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**AN EXPLORATION OF THE INFLUENCE OF
SOCIAL BALLROOM DANCING ON HEALTH AND
WELL-BEING FOR OLDER ADULTS**

SARAH RACHEL CHIPPERFIELD

A thesis submitted to the University of Huddersfield in partial fulfilment of the requirements for the degree of Doctor of Philosophy

The University of Huddersfield

Submission date as August 2018

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Abstract

Background

The world's ageing population is frequently cited as presenting economic and social burdens and critical challenges to healthcare systems, with falls and mental health featuring as two of the biggest burdens. Whilst physical activity is recommended for older adults to optimise functional independence and guidelines for the intensity, duration and frequency of physical activity exist, there are few guidelines on the specific types of exercises that are recommended. As a physical activity that incorporates the recommended aspects of aerobic, strengthening and balance work, the aim of this study was to explore the influence of ballroom dancing on the physical, mental and social health of community-dwelling older adults.

Method

A qualitative-dominant, concurrent mixed-methods design was utilised. Ethical approval was granted via the University of Huddersfield's research ethics panel.

Participants were community-dwelling older adults (over 55 years of age) who were recruited from local ballroom dancing classes in West Yorkshire. They participated in ballroom dancing classes for at least one hour per week for 12 months and were tested during this period at baseline, and after 3, 6, 9 and 12 months. Demographic details were collected at baseline and the incidence of falls, changes to medical history or medications and levels of exercise were recorded at each data collection point.

Quantitative measures of physical function were assessed using the Functional Reach Test (FR test), Timed-Up-and-Go Test (TUGT), the Four Square Step Test (FSST) and Tinetti's test. In addition, balance was specifically assessed using a Biodex Balance System SD (BBS). The Falls Efficacy Scale- International (FES-I) was completed alongside the Clinical Outcomes in Routine Examination- General Population (CORE-GP) for well-being.

The qualitative aspect of the study used semi-structured interviews at baseline, 6 and 12 months. Forty-one interviews were performed with participants individually or in dancing pairs. Qualitative data were managed and analysed using the Framework Analysis approach.

Results

Of the 26 older adult ballroom dancers recruited to the study who consented to participate, 23 (10 male, 13 female) completed the 12-months of data collection (mean age 66.5 years (SD 5.96 years; age range 58-83 years)).

Using a Framework Analysis approach, 4 key themes were identified amongst the sample of older adults. 'Active ageing' considers physical health perceptions, the acceptance,

adaptation and frustrations of ageing and maintaining an active body and mind. The theme 'class commitment and congruence' highlights factors that were deemed important to the success of a dancing class and would encourage participants to keep dancing. The 'Social dance community' theme considers the influence and dynamics of dancing partnerships and the importance of building social networks. Finally, 'enjoyment' acknowledges the role of ballroom dancing for well-being.

This study demonstrated a low attrition rate, no adverse effects due to ballroom dancing and a low falls risk in this sample of older adults. The primary outcome was assessment of functional changes between baseline and 12 months, with the 3-monthly intervals serving as interim data collection points. Over the 12-month period, whilst not expected in a feasibility study, there were no significant changes in the FR test, TUGT, FSST or Tinetti's test. For the CORE-GP scale 97.5% of recordings were within the 'healthy' well-being score range, and there was a 10% decrease in points-score for the FES-I, indicating a possible substantive finding for clinical practice. The BBS tests demonstrated women had a statistically significant better level of postural stability than men, and as a group, their scores on the FR test were significantly lower than normalised scores for their age group.

Discussion

The findings suggest that ballroom dancing should be promoted by health professionals as a socially inclusive, safe physical activity that provides considerable pleasure. In addition to the current literature, the 'pleasure of practice' and the 'pleasure of community' are two types of pleasure suggested to be associated with ballroom dancing. Ballroom dancing also enhances opportunities for physical, psychological and social resilience in older adults by resisting age-related physical decline, assisting with acceptance of the ageing body, providing a strong sense of enjoyment and well-being and helping to form strong social connections, which are all important factors for resilient ageing.

It is recommended that future comparative studies are of an adequate power to detect group differences that may exist in quantitative outcome measures, such as assessing balance with the BBS. A control group should be used for comparison with the ballroom dancing intervention group, with the intervention group all starting ballroom dancing at baseline. Given the findings of this study that the participants appeared to be high functioning when performing physical tests, it is recommended that alternative outcome measures are sought that will discriminate sufficiently amongst community-dwelling older adults.

KEYWORDS: Ballroom Dancing, Older Adults, Well-being, Active-Ageing, Resilience, Pleasure.

Table of Contents

Chapter 1 The Ageing Population	21
1.1 Defining 'Old Age'	21
1.2 The Ageing Population	22
1.3 Models of Ageing	25
1.4 Health Policy and Ageing	28
1.5 Falls in Older Adults.....	29
1.6 Physical Activity for Older Adults	30
1.7 Physical Activity Recommendations for Older Adults	33
1.8 Limitations of the Studies.....	34
1.9 Chapter Summary	36
Chapter 2 Dance and Health	38
2.1 Review of Different Types of Dance and Health	38
2.1.1 Dance and Physical Health.....	39
2.1.2 Dance and Mental Health and Well-being	43
2.1.3 Dance and Dementia	45
2.1.4 Dance and Social Health	45
2.2 Chapter Summary: Limitations and Conclusions	47
Chapter 3 Social Ballroom Dancing (SBD) and Health.....	48
3.1 Background to the Study.....	48
3.2 Social Ballroom Dancing for Health and Well-being in Older Adults	49
3.2.1 The Literature Search	50
3.2.2 Search Results.....	50
3.2.3 Summary of Literature Findings	53
3.3 Social Ballroom Dancing and Physical Health in Older Adults.....	53
3.4 Social Ballroom Dancing and Cognitive Health in Older Adults.	61
3.5 Social Ballroom Dancing and Mental Health and Well-being in Older Adults.....	63
3.6 Social Ballroom Dancing and Social Health in Older Adults.....	66

3.7	Summary of the Studies.....	67
3.8	Chapter Summary: Conclusions	70
3.9	Research Aim	72
3.9.1	Research Questions:.....	73
Chapter 4 Methodological Considerations.....		74
4.1	Methodological Considerations: Mixed Methods Research in Healthcare and Rationale for the Study Design	74
4.2	Ontological and Epistemological Perspectives	77
4.3	Qualitative Approaches	79
4.4	Framework Analysis (FA).....	81
4.4.1	Data Collection: Semi-Structured Interviews	83
4.5	Qualitative Inquiry: Considering the Lived Experience	85
4.6	Chapter Summary	89
Chapter 5 Methodology: The Research Design.....		90
5.1	Sampling and Participants	90
5.2	Recruitment.....	91
5.3	Outline of Data Collected.....	92
5.4	Procedure for Data Collection.....	92
5.5	Mental Health and Well-being Outcome Measures.....	94
5.5.1	Clinical Outcomes in Routine Examination- General Population (CORE-GP) ...	95
5.5.2	Falls Efficacy Scale- International (FES-I).....	97
5.6	Quantitative Data Collection: Physical Testing Measures.....	97
5.6.1	Dynamic Balance - The Biodex Balance System SD.....	98
5.6.2	Assessment of Falls Risk and Function	100
5.6.3	Performance Orientated Assessment of Mobility (POAM)/ Tinetti's Test	100
5.6.4	Timed Up and Go test (TUGT)	101
5.6.5	Functional Reach Test.....	102
5.6.6	Four Square Step Test (FSST).....	103
5.7	Statistical Analysis for Quantitative Findings	105
5.8	Qualitative Methods Research Design: Semi-Structured Interview Procedure	106

5.8.1	The Interview Experience	106
5.9	The Framework Analysis Approach	109
5.9.1	Data Analysis using Framework Analysis in the present study	112
5.10	Ethical and Risk Considerations	114
5.10.1	Consent and Right to Withdraw	114
5.10.2	Confidentiality and Anonymity of Research Participants.....	114
5.10.3	Collection and Storage of Data.....	115
5.10.4	Physical Outcome Measures: Risk Considerations	115
5.10.5	Mental Health and Well-being Measures: Risk Considerations.....	115
5.11	Chapter Summary	116
Chapter 6	Quantitative Findings: Physical Assessment Outcome Measures	117
6.1	Demographic Data.....	117
6.1.1	Age	118
6.1.2	Body Mass Index (BMI).....	119
6.2	Potential Confounding Variables	121
6.3	Outcome Measures	123
6.3.1	Clinical Outcomes Routine Evaluation-General Population (CORE-GP) measure 123	
6.3.2	Falls Efficacy Scale-International (FES-I).....	127
6.3.3	Timed Up and Go Test (TUGT)	127
6.3.4	Performance Orientated Assessment of Mobility (POAM) or 'Tinetti's' Test ...	128
6.3.5	Four Square Step Test (FSST).....	129
6.3.6	Functional Reach Test (FR Test)	129
6.4	The Biodex Balance System Measurements	131
6.4.1	Falls Risk Test.....	131
6.4.2	Postural Stability Test (PST)	132
6.4.3	Limits of Stability (LOS) Test	133
6.5	Summary of Outcome Measures.....	135
6.5.1	Demographics.....	135
6.5.2	Analysis of Well-being Outcome Measures	137

6.5.3	Analysis of Balance Outcome Measures	138
6.5.4	Biodex Balance System Measures.....	139
6.6	Chapter Summary	141
Chapter 7	Overview of Qualitative Findings	143
7.1	The Participants	143
7.2	The Qualitative Findings: Key Themes and Sub-Themes.....	145
7.3	Chapter Summary	147
Chapter 8	Active Ageing	148
8.1	Preventing Inactivity and Apathy.....	148
8.1.1	Summary of Preventing Inactivity and Apathy	153
8.2	Active Minds: 'The Brain Gym'	154
8.2.1	Summary of Active Minds: <i>The Brain Gym</i>	155
8.3	Ageing: Acceptance, Adaptation and Frustration.....	157
8.3.1	Summary of Ageing: Acceptance, Adaptation and Frustration	162
8.4	Physical Health Perceptions	164
8.4.1	Summary of Physical Health Perceptions	169
8.5	Chapter Summary	169
Chapter 9	Class Commitment and Congruence	172
9.1	The Dancing Class.....	172
9.1.1	Summary of the Dancing Class	178
9.2	The Acquisition of Dancing Skills: 'Something I can do'	179
9.2.1	Summary of The Acquisition of Dancing Skills: ' <i>Something I Can Do</i> '.	184
9.3	Action, Commitment and Maintenance	184
9.3.1	Summary Action of Commitment and Maintenance	190
9.4	Relapse: Barriers and Interruptions	190
9.4.1	Summary of Relapse: Barriers and Interruptions.....	196
9.5	Chapter Summary	197
Chapter 10	Social Dance Community	198
10.1	Ballroom Dancing: 'Life is designed for two'	198

10.1.1	Summary of Ballroom Dancing: ' <i>Life is designed for two</i> '	202
10.2	Dancing Through the Life Course: A Personal History of Dance.....	203
10.2.1	Summary of Dancing through the Life Course: A Personal History of Dance .	205
10.3	Come Dancing: Stepping Out for an Occasion	206
10.3.1	Summary of Come Dancing: Stepping Out for an Occasion	209
10.4	Influence of Self and Others	210
10.4.1	Summary of Influence of Self and Others	215
10.5	Fellowship and Friendship: Social Interaction and Identity	216
10.5.1	Summary of Fellowship and Friendship: Social Interaction and Identity	220
10.6	Chapter Summary	222
Chapter 11	Enjoyment	223
11.1	Raising Spirits: Among the Land of the Living	223
11.1.1	Summary of Raising Spirits: Among the Land of the Living	225
11.2	Expressing Oneself	225
11.2.1	Summary of Expressing Oneself.....	228
11.3	Distraction from Life's Worries	229
11.3.1	Summary of Distraction from Life's Worries	231
11.4	Beneficence	231
11.4.1	Summary of Beneficence.....	233
11.5	Chapter Summary	233
Chapter 12	Discussion.....	235
12.1	The Practice of Ballroom Dancing for Older Adults	236
12.1.1	Ballroom Dancing and Social Inclusivity	236
12.2	The Practice of Ballroom Dancing	237
12.3	The Ballroom Dancing Class.....	239
12.4	Ballroom Dancing and the Experience of Pleasure.....	243
12.4.1	Developments in Pleasure and Physical Activity	244
12.4.2	Ballroom Dancing and Sensual Pleasures.....	246
12.4.3	Ballroom Dancing and the Pleasure of Habitual Action.....	248

12.4.4	Ballroom Dancing and the Pleasure of Immersion	251
12.4.5	Ballroom Dancing and the Pleasure of Practice	252
12.4.6	Ballroom Dancing and the Pleasure of Community	253
12.4.7	Summary: Pleasure and Ballroom Dancing	256
12.5	Ballroom Dancing: Resilience in Older Adults	258
12.5.1	Psychological Resilience in Older Adult Ballroom Dancers	258
12.5.2	Physical Resilience in Older Adult Ballroom Dancers.....	260
12.5.3	Social Resilience in Older Adult Ballroom Dancers.....	262
12.5.4	Summary: The Role of Ballroom Dancing for Resilience in Older Adults	264
12.6	Ballroom Dancing: Implications for Healthcare Practice and Policy	265
12.7	Methodological Strengths and Limitations of the Study.....	267
12.7.1	Methodological Limitations	267
12.7.2	Strengths of the Study.....	268
12.8	Reflexive Account.....	269
12.9	Chapter Summary: Contribution to the Literature.....	271
Conclusion.....		274
Recommendations for Health Promotion Practice		274
Recommendations for Further Research.....		276
Appendix 1 Ballroom Dancing Literature Summaries		279
Appendix 2 Research Ethics Proposal Form		300
Appendix 3 Risk Assessment Form		309
Appendix 4 Participant Information Sheet		314
Appendix 5 Consent Form		317
Appendix 6 Baseline Questionnaire		318
Appendix 7 Follow-Up Questionnaire		320
Appendix 8 CORE-GP.....		322
Appendix 9 Falls Efficacy Scale- International.....		323
Appendix 10 Tinetti's Test/ POAM		324
Appendix 11 Interview Guide		326

Appendix 12 Example Transcript and coding process	327
Appendix 13 Example Framework with verbatim quotes.....	329
Appendix 14 Post-graduate training courses and timeline	331
Bibliography	332

Word Count: 101,276 (excluding contents, bibliography and appendices).

List of Figures

Figure 1	PRISMA Flow diagram for ballroom dancing and health literature	p.52
Figure 2	The Biodex Balance System SD	p.98
Figure 3	The Biodex Balance System SD Footplate	p.99
Figure 4	The Functional Reach Test	p.103
Figure 5	The Four Square Step Test	p.104
Figure 6	Box plot for age of male and female participants	p.119
Figure 7	Mean CORE-GP scores plus confidence intervals (CI) for all completing participants (n=23) at 3-month intervals	p.125
Figure 8	CORE-GP mean scores CI at each data point for the participants still dancing at 12-months	p.126
Figure 9	The practice of ballroom dancing for older adults	p.238
Figure 10	Important dance class characteristics	p.241
Figure 11	The pleasures of ballroom dancing for older adults	p.245

Appendices Figures

Figure A1	Excerpt from interview 1 with participants 1 and 2, page 1	p.327
Figure A2	Excerpt from interview 1 with participants 1 and 2, page 2	p.328
Figure A3	Examples of coding notes for 'preventing inactivity and apathy'	p.330

List of Tables

Table 1	Mixed methods designs arranged by timing and dominance	p.76
Table 2	Look up scale of CORE-OM scores and severity levels (CORE-IMS, 2014)	p.95
Table 3	Interpretation of results from the TUGT	p.102
Table 4	Functional Reach results in inches and relative risk of falls	p.103
Table 5	Key features of Framework Analysis	p.109
Table 6	Framework Analysis 5-stage process	p.111
Table 7	Framework Analysis 7-stage process (Gale et al, 2013)	p.112
Table 8	Categorisation of socio-economic groups by IMD scores	p.117
Table 9	Summary of ages for female and male participants at baseline and at 12- months	p.118
Table 10	BMI range and frequency by gender at baseline all participants (n=26)	p.120
Table 11	BMI and frequency of dancing at baseline	p.120
Table 12	Time spent dancing per week at data collection points between baseline and 12-months in all completing participants	p.122
Table 13	Time spent dancing in hours per week by participants who continued dancing for 12-months (n=17)	p.122
Table 14	CORE-GP scores at 3-month intervals all completing participants (n=23)	p.124
Table 15	CORE-GP scores at 3-month intervals all completing dancers (n=17)	p.124
Table 16	Comparison of mean CORE-GP scores in dancers and non-dancers over 12- months	p.126
Table 17	Frequency of participants in each age range with mean and standard deviations (n=23)	p.128
Table 18	Functional Reach interpretation of results and frequency of mean scores in each category (n=17 dancers v n=6 non dancers)	p.129
Table 19	Mean Falls Risk test OSI results from all 5 data collection points	p.131
Table 20	Group statistics limits of stability scores by gender	p.133
Table 21	t-test for equality of means for the limits of stability test	p.134
Table 22	Participant demographics and pseudonyms	p.144
Table 23	Final key themes and sub-themes	p.146

Appendices Tables

Table A1	Ballroom Dancing Systematic/ Literature Review Chart	p.279
Table A2	Ballroom Dancing Qualitative Literature Review Chart	p.281
Table A3	Ballroom Dancing Quantitative Literature Review Chart	p.284
Table A4	Risk Assessment form	p.309
Table A5	Example of the 'Framework' chart layout for verbatim quotes	p.328
Table A6	Postgraduate training courses and timeline	p.331

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List of abbreviations

ACSM	American College of Sports Medicine
AD	Alzheimer's disease
ADL	Activities of Daily Living
AGILE	Chartered Physiotherapists Working with Older People
AGS/BGS	American Geriatrics Society/ British Geriatrics Society
APSI	Anterior-Posterior Stability Index
BBC	British Broadcasting Corporation
BBS	Biodex Balance System SD
BDI	Beck Depression Inventory
BMI	Body Mass Index
CI	Confidence Interval
COPD	Chronic Obstructive Pulmonary Disease
CORE-GP	Clinical Outcomes in Routine Examination- General Population
CORE-OM	Clinical Outcomes in Routine Examination- Outcome Measure
CSP	Chartered Society of Physiotherapy
DH	Department of Health (UK)
DHPAHIP	Department of Health, Physical Activity, Health Improvement and Protection
DMT	Dance/ Movement Therapy
EBM	Evidence Based Medicine
EBP	Evidence Based Practice
EMS	Elderly Mobility Scale
EU	European Union
FA	Framework Analysis
FES	Falls Efficacy Scale
FES-I	Falls Efficacy Scale- International
FOG	Freezing of Gait
FRI	Falls Risk Index
FRT	Falls Risk Test
FR Test	Functional Reach Test
FSST	Four Square Step Test
GDS	Geriatric Depression Scale
GP	General Practitioner
GT	Grounded Theory
HSCIC	Health and Social Care Information Centre

IMD	Index of Multiple Deprivation
LOS	Limits of Stability Test
MDS-UPDRS	Movement Disorder Society- Unified Parkinson's Disease Rating Scale
MLSI	Medial-Lateral Stability Index
<i>n</i>	Number
NA	Narrative Analysis
NHS	National Health Service
NICE	National Institute of Health and Care Excellence
NOS	National Osteoporosis Society
NPEU	National Perinatal Epidemiology Unit
NSF	National Service Framework
ONS	Office for National Statistics
OSI	Overall Stability Index
PALS	Physical Activity and Leisure Scheme
PD	Parkinson's disease
POAM	Performance Orientated Assessment of Mobility
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PST	Postural Stability Test
<i>p</i> -value	Probability Value
RA	Rheumatoid Arthritis
RCT	Randomised Controlled Trial
SBD	Social Ballroom Dancing
SCD	Strictly Come Dancing
SD	Standard Deviation
SOC	Sense of Coherence
TA	Thematic Analysis
TUGT	Timed Up and Go Test
UK	United Kingdom
USA	United States of America
WHO	World Health Organization

Introduction

There is no account of the origin of the practice of dancing among mankind. It is found to exist among all nations whatever, even the most rude and barbarous, and, indeed, however much the assistance of art may be necessary to make any one perfect in the practice, the foundation must certainly be the mechanism of the body itself. The connection that there is between certain sounds and those motions of the human body called dancing, hath seldom or never been enquired into by philosophers, though it is a very curious speculation.

(Encyclopaedia Britannia, 1778-83 (press mark 737h:2375) cited by Williams, 2004, p.54)

As a chartered physiotherapist, I have a special interest in promoting public health and successful ageing. Much of my clinical career was spent working in community settings in the north of England with older adults who were beginning to be troubled by physical problems associated with ageing and comorbidities. I have seen the social isolation caused by individuals having physical health problems and the effects of bereavement following the death of lifelong partners and friends. Having spent the majority of my clinical and educational career in the north of England, I have been aware of the plethora of community 'social dancing' events that occurred in local community group settings. These were often dances during the day and aimed at older adults who had perhaps retired and wished to participate in an enjoyable, social activity that maintained contact with other likeminded individuals.

I have also participated in social Latin and Ballroom classes myself intermittently over the last 20 years and can relate to how social ballroom dancing could enhance social connections, as it did for me. As a physiotherapist I am also aware of the health benefits of dancing as a form of physical exercise. However, at dance events that I have attended, I have often heard other dancers say they participated in social ballroom dancing primarily for the social activity and not for health benefits. Although one comment I had heard was of particular interest to me, regarding an older male car mechanic who participated in ballroom dancing and had said it was, 'the best thing I have ever done for my health', yet he would not admit to anyone he worked with that he danced in his leisure time.

I thought further about these comments and about my role as a physiotherapist and how a physiotherapist's role within promoting public health had changed in the last two decades since I began my undergraduate physiotherapy training. Physiotherapy has evolved over recent decades from the influence of a biomedical model of health, working under the direction of doctors, to physiotherapists becoming autonomous practitioners and more than just managing ill-health or disability. Physiotherapy's ethos has developed to focus on a 'whole person approach to health and well-being' for individuals of all ages, which would include advocating movement, exercise and education and advice (Chartered Society of Physiotherapy, CSP, 2013). Whilst there was some literature discussing the social benefits of ballroom dancing and benefits for those with diagnosed mental health illness, there was, at the time, little discussing the physical health benefits of ballroom dancing as an adjunct to promoting health for older adults.

A key problem for physiotherapists working with older adults is the prevention and management of falls. Preventative activities are known to include maintaining physical health in terms of aerobic fitness, strength and balance through exercise programmes (HSCIC, 2017). Social ballroom dancing, which involves skills such as remembering steps and sequences, balancing, maintaining a good posture, pivoting and turning movements and a good level of cardiovascular fitness could be an ideal activity to engage and maintain older adults in physical activity and with these movements, help to meet recommended physical activity guidelines for older adults (HSCIC, 2017).

For the purposes of this research, social ballroom dancing encompasses two main categories of dance: 'Standard' and 'Latin'. Standard consists of the slow waltz, Viennese waltz, foxtrot, tango and quickstep, and Latin, consisting of rumba, cha cha, samba, paso doble and jive (Hall, 2000, p.4). 'Dancesport', as competitive ballroom dancing is now known in the United States of America (USA), is a highly specialised activity across the USA, Europe and Asia taking a lifetime of training to achieve. However the term 'social' ballroom dancing is used to differentiate it from competitive ballroom dancing as ballroom dancing is also an intergenerational activity enjoyed by many on a social dancing level and it is this population of people with whom this study is concerned. Participants in this study mainly danced the waltz, quickstep, cha cha and jive and variations of these dances in a sequence dance format in a social dance setting.

Outline of the thesis

The present chapter provides an insight into the personal and professional reasons behind researching the health benefits of social ballroom dancing for older adults.

Chapter 1 considers the ageing population in terms of aspects of the epidemiology of ageing, falls and physical activity for older adults. Physical activity guidelines for older adults are considered alongside a review of literature for physical activity for community-dwelling older adults. Chapter 2 outlines the health benefits of dancing, including Dance Movement Therapy and other different forms of dancing and Chapter 3 presents a review of the literature specific to social ballroom dancing for older adults and health.

Chapters 4 and 5 present the methodological considerations and the research design, encompassing the ontological and epistemological perspectives and the theoretical lens of 'resilient ageing', before the research design protocol, methods of analysis and ethical and risk considerations and outlined.

Chapter 6 focuses on the presentation of results for the outcome measures tested and subsequent discussion of the quantitative element of this study.

Chapter 7 provides an outline of the qualitative findings, including a summary of the participants' pseudonyms, age and demographic information to assist the reader with 'placing' the participants in the subsequent presentation of the qualitative findings in chapters 8 to 11. An outline of the key themes and sub-themes is also presented.

Chapter 8 presents the theme of 'Active Ageing' and its sub-themes of; preventing inactivity and apathy; active minds: *The brain gym*; ageing: acceptance, adaptation and frustration and physical health perceptions. Chapter 9 outlines the findings with regards to 'Class Commitment and Congruence' including the subthemes; the dancing class; acquisition of dancing skills: *something I can do*; action, commitment and maintenance and the final sub-theme, relapse: barriers and interruptions. Chapter 10 considers the theme of the 'Social Dance Community' with its sub-themes of ballroom dancing: *life is designed for two*; dancing through the life course: a personal history of dance; come dancing: stepping out for an occasion; influence of self and others and fellowship and friendship: social interaction and identity. Chapter 11 presents the findings for the final key theme and a unanimous topic amongst participants; that of 'Enjoyment'. Sub-themes discussed in Chapter 11 include; raising spirits: *among the land of the living*; expressing oneself; distraction from life's worries and beneficence. All of the themes are presented supported by verbatim quotes from participants' interviews.

Chapter 12 provides the discussion of the qualitative and quantitative findings using a 'complementarity' approach linking both sets of findings. The themes are discussed with

reference to the literature, with a focus on pleasure and resistance. The methodological strengths and limitations of the study are discussed, alongside implications for clinical and health promotion practice. The discussion section also provides a reflexive account of the PhD process before the Conclusion, which summarises the thesis and suggests recommendations for health promotion practice and recommendations for further research.

Chapter 1 **The Ageing Population**

The Introductory chapter provided a rationale for the conception of this study from the perspective of a physiotherapist with an interest in promoting public health and physical activity for older adults. Chapter 1 discusses some of the issues surrounding an ageing population; the definition of age, models of ageing, health policies and common problems associated with an age related functional decline and the current guidelines for physical activity for older adults.

1.1 **Defining 'Old Age'**

Definitions of age groups for older adults vary as age is a socially constructed concept. Given there are diverse cultural, geographical and economic interpretations there is no universal consensus for a definition of 'old age'. It has long since been argued in the field of gerontology that "ageing is a lifelong process of growing up and growing *older* from birth to death, moving through all the strata in society; it is not simply growing *old* beyond some arbitrary point in the life course" (Riley, 1985, p.254, cited by Wilmoth and Ferraro, 2013, p.11).

Historically, individuals were considered 'old' when they became physically incapacitated to the extreme they were unable to be involved in society or work, rather than at an 'arbitrary point' and thus ageing was seen in terms of physical or mental capacity, or loss thereof. In the United Kingdom (UK), the introduction of 'retirement' and the Welfare State began to identify and categorise a period in the life cycle, generally around the age of 60, where individuals were considered 'old' (Phillipson, 2013).

Larkin (2013) considers the 'life course' approach whereby adults are categorised into 'young adulthood', 'midlife' and 'old age'. Using this categorisation 'midlife' is considered to be 40-65 years of age, 'old age' is defined as being over 65 years of age and those over 85 years of age are referred to as being 'old old' (Degnen, 2007, cited by Larkin, 2013, p.129). Phillipson (2013, p.13) also notes a possible gender difference, that an ageing population may be defined as over 60 for both sexes *or* over 60 years of age for females and over 65 years of age for males. However, it must be borne in mind that classifying those around 60-65 years of age as 'older adults' is not uncontentious and will not be appropriate for all individuals and groups. For example, it might be rejected by some adults who do not categorise themselves as 'old', and in certain geographical regions, where life expectancy is

often considerably lower, this categorisation would not be appropriate. Indeed Baars (2012, cited by Phillipson, 2013, p.66) discussed the heterogeneity of older adults and concluded that chronological age classifications provide little value and, whilst practical, have not enhanced the understanding of ageing.

The American College of Sports Medicine (ACSM, 2009) additionally note that some 'old age' activity guidelines might also be relevant and appropriate in adults between 50-64 years, if there is sufficient functional disability, for example due to chronic illness. Conversely, Phillipson (2013, p.55) discusses older adults who do not 'fit' with a 'pathological model of ageing'; for example those who remain fit and active and leading a purposeful life, cannot really be considered 'elderly' at all.

The difficulties in defining an age range that might be considered as 'old' mean that a comparison of research trials can prove difficult as researchers are not working to a standard definition. However, research studies and policy documents often use a criterion of 60 years of age and above to delineate 'old age', which is the criterion used by the United Nations (World Health Organization, WHO, 2002). This is the definition used for this research as it has historically tended to coincide with the age at which people retire in the UK.

1.2 *The Ageing Population*

In the United Kingdom (UK), the percentage of over 65-year-olds has risen from 15% in 1984 to 18% in 2014 and the number of adults in the 'oldest old' age bracket, above 80 years, has risen from 19% of the over-65 population in 1984 to 22% in 2014 (Office for National Statistics (ONS), 2015). The WHO (2017) predicts that between 2015 and 2050 the world's population of adults over the age of 60 will double from 12% to 22%. An ageing population is frequently described in the literature as potentially presenting a number of economic and social burdens, including critical challenges to governments in financing pensions (Prosser, 2006), and is therefore often considered a 'problem'. For example, an ageing population increases the burden on healthcare services and provision of long-term care for older adults who develop chronic illnesses, such as cardiovascular disease, dementia and cognitive decline in older age (Campbell and Robertson, 2003; de Noronha Ribeiro Daniel et al, 2011; Department of Health, Physical Activity, Health Improvement and Protection (DHPAHIP), 2011; Hamer, Lavoie and Bacon, 2015).

The link between socioeconomic deprivation and a poor health status is well acknowledged not only within nations but also when considering global inequalities between nations (George, 2013; Harvey and Taylor, 2013; Green, Tones, Cross and Woodall, 2015; Barry and Yuill, 2016). The effects of socioeconomic deprivation across the life course are likely to heighten in older age following the, "cumulative effects of having experienced a lifetime of disadvantage and more unhealthy lifestyles" (Larkin, 2013, p.151) and it is noted that older adults, particularly those in lower socioeconomic groups are more likely to live in poverty (Barry and Yuill, 2016). Crystal and O'Shea (1990, cited by George, 2013, p.162) describe this as the Cumulative Advantage/ Disadvantage Theory; that socioeconomic disadvantage earlier in life leads to a greater decline in health in older adulthood compared to the health of older adults who were more socioeconomically advantaged in childhood.

Although levels of relative poverty amongst older adults in the UK showed a decline over recent decades, since 2012/ 2013 levels have been increasing once again (Age UK, 2017). Poverty has a negative effect on one's health status, for example, exposure to unhealthy environments, poor diet and healthcare (Green, Tones, Cross and Woodall, 2015) and a predisposition to physical ill-health and poor emotional well-being (Allen, 2008). Rees Jones et al (2011, cited by Larkin, 2013, p.125) suggest that individuals are more likely to be "locked into" these unhealthy lifestyles particularly if socioeconomically disadvantaged since childhood.

Older adults in lower socioeconomic groups have a lower life expectancy and fewer disability-free years (Pickard, 2016) and engage in lower levels of leisure time physical activity (Marshall et al., 2007; Elhakeem et al., 2016) than those in higher socioeconomic groups. However, upward social mobility during the life course may in part ameliorate the effects of early socioeconomic disadvantage on health in older adulthood (Luo and Waite, 2005, cited by George, 2013) and also have a positive effect on leisure time physical activity levels (Elhakeem et al., 2016). It is suggested that appropriate government public health policies are key to help reduce health and well-being inequities for older adults, particularly addressing those stemming from childhood poverty (Green, Tones, Cross and Woodall, 2015) and to encourage individuals to be more active (HSCIC, 2017).

Approximately 65% of older adults aged 65-85 years live with at least two long-term health conditions (Barnett et al., 2012, cited by Wolff, Warner, Ziegelmann and Wurm, 2014).

Although adults in the UK are living longer and are healthier and wealthier than previous generations, age is by far the biggest risk factor for a wide range of clinical conditions, with musculoskeletal conditions, particularly arthritis, being the main cause of disability for older

adults (Beswick, Gooberman-Hill, Smith, Wylde and Ebrahim, 2010). Age-related functional decline can be problematic for many, and functional dependence of older adults aged over 65 is a key determinant of hospital admissions (Sona et al., 2011). Risk factors for functional decline have been found to include co-morbidities, poor physical and psychosocial health, environmental, lifestyle and social circumstances, depression and cognitive impairment (Beswick et al., 2010).

There is an acknowledged age-related risk of many chronic health conditions such as musculoskeletal conditions, coronary heart disease, type 2 diabetes and cancer (Beswick et al., 2010; DHPAHIP, 2011) and progressive functional decline due to ageing may have a significant impact on many individuals' quality of life.

In the over-65 age group, 30% of people demonstrate age-related hearing loss, with the figure rising to 50% of adults over the age of 80 (Mogle and Sliwinski, 2013). Hearing impairment and indeed an age-related decline in vision can make individuals less likely to socialise. There is growing evidence of the negative effects of social isolation in older people (Mogle and Sliwinski, 2013), including its relationship to accelerating functional decline (Beswick et al., 2010). Health has been identified as the, "most important determinant of happiness amongst the over-55s" (Allen, 2008, p.24).

Amongst those aged 75 and over, it is thought that around 25% live in ill-health and are particularly at risk of poor mental health and well-being or social exclusion issues (Allen, 2008). 'Well-being' is a term often used in healthcare practice as evidenced by the induction of Health and Well-being boards following the Health and Social Care Act in 2012 (The King's Fund, 2018) but there remains some debate around the meaning of well-being and how it might be measured (Hartwell, 2013). Allen (2008, p.13) considers levels of emotional well-being to be related to the presence or absence of mental health problems, life satisfaction and levels of happiness. Since relative poverty is increasing in the over 50s, it is suggested emotional well-being is worsening and that older adults in the UK face higher rates of poverty compared to many neighbouring European Union (EU) countries (Allen, 2008, p.22).

In the UK and elsewhere in the developed world, demographic and societal changes often mean that older people do not live near to family, and can become socially isolated, lonely, and depressed and this is particularly so for those who are in ill-health, those who are carers or those living alone (Allen, 2008). Loneliness and isolation are associated with worse cognitive functioning in older adults (Shankar, Hamer, McMunn and Steptoe, 2013) and depression has been identified as the most common mental health problem for older adults

in the UK (Allen, 2008). The WHO (2017) states that approximately 15% of older adults will have a mental health illness, including depression. It has been suggested that by 2030, depression will have become the leading cause of 'disease and burden in middle and higher income countries' and that depression is associated with an increased risk of disability, dementia and death (Rodda, Walker and Carter, 2011) and is negatively associated with 'subjective health' attitudes in older adults (Ruthig, Hanson, Pedersen, Weber and Chipperfield, 2011).

Positive and negative views on ageing can influence an individual's health (Wolff et al, 2014). Having 'health optimism', in spite of poor objective health indicators, can positively influence an individual's functional and psychological health with health optimists more likely to engage in physical activity. Conversely 'health pessimism' can lead to poorer health outcomes and can occur for those who have perceived a lack of social support or depression (Ruthig et al., 2011, p.2). For those who hold negative views on ageing, Levy (2009, cited by Wolff et al., 2014) proposes a self-fulfilling prophecy of decline in psychological and physiological mechanisms, leading to poor health behaviours. Wurm, Tomasik and Tesch-Römer (2010) also reported that positive views on ageing can contribute to increased levels of physical activity and walking for older adults.

1.3 Models of Ageing

Given the gradual increase in the average age at which older adults retire and claim a state pension, it is increasingly important that older adults maintain a good level of health and functional autonomy to accommodate the extended years in work (Dominiczak, Swinford, Morley and Hyde, 2014). Therefore, designing effective health and welfare policies for an ageing population is of a pressing concern. Over the last decade, due to the rise in an ageing population, worldwide health policy has focused its priorities on the theme of 'healthy ageing', which Beswick et al. (2010) suggest, consists of the ability for individuals to remain independent, demonstrate personal growth, good physical function, psychological perceptions and social involvement.

Ageing theories such as 'successful ageing', 'active ageing' (Larkin, 2013), 'ageing well' (The Lancet, 2012) 'productive ageing' and 'resilient ageing' (Hicks and Conner 2013) have been suggested. Such concepts have focused on maintaining good levels of emotional and cognitive health, personal growth, physical activity and independence, autonomy and on reducing social isolation, age-related discrimination and abuse (Beswick et al., 2010). Whilst these concepts aim to address the needs of older adults, they have been criticised for their

political rhetoric; 'successful' and 'active' ageing may suggest ageing is a social and economic burden if not well 'managed', and indeed, will be unachievable for some (Larkin, 2013, p.153). However, Beswick et al. (2010) suggest that successful ageing can still occur in those who have significant dependence upon others if social engagement is strong.

The concept of successful or active ageing can have negative connotations, that if 'successful' ageing is not achieved, one is ageing *unsuccessfully*. Gingold suggests successful agers are individuals who are determined to remain independent and are "robust individuals who remain physically, mentally and socially active" (1999, p.11 cited by Gattuso, 2003, p.173). It must be recognised that for some, over-coming the inherent physical decline of the ageing body is hampered by long term health conditions, which makes successful ageing near impossible. Lenneis & Pfister (2017) argue this further suggesting 'active' ageing considers ageing an undesirable problem. Gattuso argues "the rhetoric of successful ageing or agelessness denies the wisdom that age may bring in spite of vulnerability and frailty. To misunderstand this is to have a limited and limiting view of wellness in later life" (2003, p174).

Hicks and Conner (2013) suggest that a more inclusive concept is that of 'resilient ageing'. Resilience in ageing is defined as "the ability to bounce back and recover physical and psychological health in the face of adversity" (van Kessel 2013, p.125) and it recognises a process of adaptation to one's new circumstances during the ageing process. Hicks and Conner extend this definition by suggesting resilient ageing is a "process an older person endures beyond physical, psychological or cognitive adversity, through protective factors that influence the attributes of coping, hardiness, and self-concept, in the person's quest towards quality of life" (2013, p.749). Resilience might be in the form of overcoming health issues concerning physical and mental health or other determinants such as social and environmental factors (Davydov, Stewart, Ritchie and Chaudieu, 2010; van Kessel, 2014) although few studies have considered specific events such as bereavement or illness as adversities to overcome (van Kessel, 2013). Davydov et al. (2010) suggest a biopsychosocial model of resilience to mental health stressors and that individuals must display in-built mechanisms, external and internal resources to overcome adversity. Whilst the concept of resilience has been criticised as perhaps ambiguous in its definitions (Davydov et al., 2010) it is considered a useful concept when considering physical activity and ageing. Just as Van Kessel (2013) discusses the lens of resilience for use in the nursing profession, resilience can be considered as a salutogenic health promotion tool for physiotherapists and other health professionals involved in health promotion activities and assist with designing physical activity programmes for older adults.

Resilience is related to Antonovsky's theoretical framework of 'salutogenesis', which focuses on the factors that lead to 'wellness' rather than the 'pathogenic' disease causing aspects of health (Green and Tones, 2010, 79). Salutogenesis considers a 'health-ease/dis-ease continuum' (Antonovsky, 1984, p117 cited by Green and Tones, 2010, p.79) whereby there is a deeper understanding of the factors associated with health and consideration is given to one's coping strategies. These successful coping variables are said to be explained by one's 'sense of coherence' (SOC), which has been defined as:

A global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that

1. The stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable;
2. The resources are available to one to meet the demands posed by these stimuli; and
3. These demands are challenges worthy of investment by engagement.

(Antonovsky, 1987, p.19 cited by Hicks and Conner, 2013, p.749)

The three components as detailed above are termed comprehensibility, manageability and meaningfulness. In Hicks and Conner's (2013) concept analysis of resilient ageing, it is noted that some of the concepts of healthy ageing are somewhat biased towards those older adults who are categorised into a 'young-old' age-group and who have not been diagnosed with long-term health conditions. However, they propose that resilient ageing differs from other successful ageing concepts and is applicable to health promotion for all older adults, including frail older adults who are affected by chronic illness. This review of four studies of resilient ageing found three 'core attributes' of 'coping, hardiness, and self-concept', attributes that Hicks and Conner (2013) consider to have strong similarities to the attributes of SOC. In contrast to SOC, resilient ageing also included 'protective factors'; life experience, activity and social support and a consequence of quality of life. The authors suggest that resilient ageing cannot be explained by models of health promotion, it is better related to a modified model of salutogenesis that recognises 'the importance of social factors in promoting a healthy ageing process' (Hicks and Conner, 2013, p.752).

1.4 **Health Policy and Ageing**

In response to the political climate associated with ageing societies and the need for older adults to stay in employment for longer, organisations such as the United Nations (2002) and The WHO responded with 'active ageing' policies (WHO, 2002; 2007, cited by Cheung-Ming Chan and Cao, 2015). Cheung-Ming Chan and Cao (2015, p.55) provide an example in practice of an 'active ageing' policy in Hong Kong, which includes components within its framework for security of living (financial and physical environment), health maintenance and social participation and 'age-friendly neighbourhoods' being built. They suggest that to be successful, such policies require not only the active involvement of the individual, but supporting policies and interventions from government to create 'supportive environments', which includes appropriate housing, opportunity for social engagement and facilities to optimise independent living (Cheung-Ming Chan and Cao, 2015, p.56).

The active involvement of the individual in taking responsibility for their own health and well-being, in what Ayo (2012) described as a 'neoliberal climate', is also a common theme in current public health research worldwide (Ayo, 2012; Beswick, et al., 2010; Crawford, 2006; Mikkelsen, 2017). Neoliberalism is a political concept that works towards expansion of the free market, privatisation of core areas of the public sector; thus igniting competition and widening consumer choice in the market (Mikkelsen, 2017). With regard to public health policy, neoliberalism asserts that social and health interventions are framed so that the individual can self-govern their own health (Mikkelsen, 2017). Crawford (2006) had discussed the notion that health, in such a way as 'successful' ageing promotes, must be achieved. Not only do governments place emphasis on public health policy with much resting on such policies in times of government election, it is also suggested that the *individual* has a personal responsibility and moral obligation to look after their own health (Crawford, 2006; Lenneis & Pfister, 2017; Mikkelsen, 2017) so as not to be the cause of burden to others, including the state or caregivers. This "health consciousness" and "moralisation of health" is an ideology particularly associated with the professional, middle classes; Crawford names this "healthism" (2006, p.410). Within this social group, Crawford suggests health is achieved by means of a self-controlled, disciplined, continuous work ethic and as such is not achieved by instant gratification (2006, p.412) and that health promotion has become professionalised to focus on health education, lifestyle and behaviour change. Allen (2008) notes there is still some question as to whether longer life expectancies in the UK are being matched by years of good health; therefore further research needs to assess health promotion policies and whether or not individuals are living fewer years with disabilities as life expectancies increase.

The importance of individuals gaining 'pleasure' from their health-seeking behaviours is increasingly considered an important aspect of health promotion and advocated as a factor that should be incorporated into public health policies (Crawford, 2006; Mikkelsen, 2017). Phoenix and Orr (2013; 2014) suggest that the pleasures of physical activity are considered across the life course and become a focus of health promotion for older adults, as pleasures are central to an individual's long-term adherence to healthy behaviours.

1.5 Falls in Older Adults

Promoting a healthy, resilient ageing process is dependent upon multiple factors including appropriate policies at national level to combat the known risks associated with ageing. There is a need for preventative healthcare strategies for older adults to identify and treat risk factors associated with loss of one's independence. One of the known risk factors and leading reason for functional impairment and reduced independence in older adults is falls (Beswick et al., 2008). There is a known relationship between declining ability to balance and advancing age; and between poor static balance and decreased functional autonomy (de Noronha Ribeiro Daniel et al., 2011). Introduced in 2001, the UK National Health Service's (NHS) National Service Framework (NSF) policy for Older People highlighted 'falls prevention' as a healthcare priority (Department of Health (DH), 2001). The NSF suggests that integrated falls services involving local authorities and health and social care provision are needed, as this has been shown to reduce the number of falls and their negative impact by up to 30% (DH, 2003, p.8). Included in its key interventions were aspects of promoting public health and active living in older people with the aim of preventing falls and the onset of osteoporosis. However, problems with adherence to multifactorial falls prevention programmes have been noted (Beswick et al., 2010). Bohannon et al. (1984) found that adults over 60 years of age were unable to balance on one leg with their eyes closed for as long as younger subjects and problems with balance are amongst the multi-factorial list of intrinsic factors causing falls including co-morbidity, low physical activity and muscle weakness (American Geriatrics Society and British Geriatrics Society (AGS/BGS), 2011; Beswick et al., 2010).

It is known that falls occur more frequently in community-dwelling older adults over the age of 65 (NICE, 2013). Falls are a leading cause of both injury and death in the over 65-year-old age group (Lueckenotte and Conley, 2009; Mitty and Flores, 2007; Perell et al., 2001) and in the over 75-year-old age group (DH, 2003). Falls can lead to an increased need for long-term care amongst older adults (Campbell and Robertson, 2003) and, in addition, can

leave older adults with a loss of confidence, distress, anxiety and pain (NICE, 2013). NICE (2013) estimated the cost of falls to the NHS to be £2.3 billion per year, with the incidence of falls in over 65 year olds suggested to be between 29% and 35% (Beswick et al., 2010; DHPAHIP, 2011; NICE, 2013; Tiedemann et al., 2015) and in over 80 year olds approximately 50% fall at least once per year (DHPAHIP, 2011). It is predicted that the incidence of falls will rise 2% each year with increasing numbers of people aged 60 and over (McMillan, 2012).

The AGS/BGS (2011) echo the importance of falls prevention programmes and suggest, given the consequences of hospitalisation, functional decline and reliance on nursing home care, that falls prevention is 'an important public health objective' (p.148). The AGS/BGS also emphasise the effectiveness of multifactorial fall intervention programmes for community-dwelling older adults when they include an exercise component that varies in intensity and includes resistance, balance, gait and co-ordination training of more than 12 weeks' duration (AGS/BGS, 2001, p.151). NICE guidelines (2013) echo the need for strengthening and balance training for those at risk of falling and those with recurrent falls.

1.6 *Physical Activity for Older Adults*

It is said that the direct costs of physical inactivity to the UK's NHS was in excess of £900 million in 2009/2010 (Health and Social Care Information Centre, HSCIC, 2017, p.5). The literature indicates that social and cultural factors have a considerable impact on one's ability to adhere to physical activities. Financial, accessibility and environmental factors have previously been cited as perceived barriers to physical activity (Buckley, Holmes and Mapp, 1999; Flynn and Stewart, 2013) and these are barriers that might become more prevalent for older adults. Whilst a complex topic to examine, lower socioeconomic group status has also been associated with lower levels of leisure time physical activity (Elhakeem et al, 2017; Marshall et al., 2007). Using the Index of Multiple Deprivation (IMD) measuring local deprivation, recent findings suggest that 50% of those in the lowest quintile, the 'most deprived' group, met the aerobic activity guidelines, in comparison to 68% of those in the least deprived socioeconomic group (HSCIC, 2017).

It is evident that, in addition to social factors, exercise or physical activity is a key component in programmes aimed at maximising the health and well-being of older adults. A lack of physical activity has been estimated to directly result in 35,000 deaths per year (Murphy, McNeilly & Murtagh, 2010). Maintaining physical activity for older adults is

important in encouraging social interaction, preventing chronic diseases, decreasing cognitive decline and maintaining physical independence (Wurm et al., 2010). Physical activity for older adults has been shown to provide health benefits such as reductions in coronary heart disease, stroke, type 2 diabetes and some forms of cancer. It can also assist with reducing the risk factors associated with musculoskeletal conditions such as osteoporosis and the age related decline in muscle mass (sarcopenia), strength (ACSM, 2011; Flynn & Stewart, 2013) and cardiovascular efficiency (ACSM, 2011).

Loprinzi's (2013) study of light and moderate to vigorous physical activity for older adults found that for every increase of 60 minutes light physical activity per day, participants were 20% less likely to report symptoms of depression. In a longitudinal study of ageing, Nusselder et al (2008, cited by Beswick et al., 2010) also found that for older adults with no disability at baseline, participation in moderate physical activity was associated with a reduction in the incidence of disability and a reduced number of years living with a disability.

In 'The English Longitudinal Study of Ageing' (Hamer, Lavoie and Bacon, 2015) the association between physical activity and healthy ageing was prospectively studied. Healthy ageing was considered to be the "absence of disease, freedom from disability, high cognitive and physical functioning and good mental health" (Hamer et al., 2015, p.5). At baseline, demographic and health-related co-variables were recorded for 11,391 participants who were recruited from a sample of mixed gender, disease-free, older adults aged 63.7 years (SD 8.9 years). After an 8-year follow-up period, 3454 participants were included in the final analysis. It was found that those participating in moderate or vigorous activities were 3.1-fold and 4.3-fold more likely to be healthy agers compared to inactive participants and 19.3% of the final sample were defined as healthy agers (Hamer et al., 2015, p.3).

However, whilst research promotes the importance of physical activity to support 'successful' ageing (Flynn and Stewart, 2013) and guidelines for exercise 'dose' exist for older adults from associations such as the ACSM (2009), what is less clear is the amount of exercise necessary to prevent a decline in physical function (Beswick et al, 2008), or the specific *types* of exercise or physical activity that are recommended for community-dwelling older-adults. In addition, generic exercise guidelines for older adults have been criticised for focusing on health outcomes, not being tailored to account for individual capabilities and circumstances and perhaps being used by non-exercise professionals to advise inappropriately (Handcock and Tattersall, 2012). Supporting the notion that physical activity ought to be tailored to individuals, NICE (2013) also state that there is little evidence for

the effectiveness of exercise groups for the prevention of falls if they have not been individually tailored for older adults, although they recommend that they should not be discouraged.

An important aspect of successful ageing is the ability to maintain functional independence (Hicks and Conner, 2014). In Paterson and Warburton's (2010) systematic review of 35-prospective cohort studies, including a total of 83,740 male and female community-dwelling participants aged between 65 and 85 years of age, greater physical activity levels were found to predict a higher functional status in older age. The studies examined provided details of the physical activity included in terms of its volume (for example, the frequency of physical activity), intensity (for example 'light' or 'moderate') or types (for example 'walking'). Findings suggested that increased levels of aerobic and resistance activities are associated with higher physiological and functional status for older adults and a reduction in the incidence of mobility disabilities. In addition to the physical benefits of exercise, a relationship between physical activity and cognitive function was found; long-term, high levels of physical activity in older adults related to better cognitive function and a reduction in the risk of developing dementia and Alzheimer's disease. Whilst there were no recommendations for specific types of physical activity, it is suggested that to be effective, physical activity needs to be of a 'dose' of at least a 'moderate' intensity level to gain significant outcomes (Paterson and Warburton, 2010). This concurs with the physical activity guidelines for adults published by the ACSM (2011) and DHPAHIP (2011) who both suggest moderate to vigorous physical activity is necessary for health benefits. However, these guidelines are also slightly ambiguous as the frequency of exercise is dependent upon the intensity achieved in sessions and an individual's previous activity levels, thus potentially making it difficult for older adults who wish to start physical activity programmes to gauge appropriate training levels.

Stevens et al. (2014) also suggest there are difficulties in defining a recommended frequency for physical activity. Within their systematic review of 6 randomised controlled trials (RCTs) of general practice based physical activity interventions, advice had been tailored to individual participants. In these RCTs a total of 1522 sedentary, independent-living participants were studied with an age range of 65- 74 years. Interventions in the studies ranged from 6-week to 6-month programmes of physical activity that included walking, exercise training for heart rate, moderate intensity aerobic activities and a 12-week leisure pass. Three of the RCT studies reported a significant increase in physical activity levels or fitness (for example in VO₂ max) when intervention groups were compared to control or comparison groups at follow-up points up to 12 months later. Interventions

included a 12-week telephone counselling programme, tailored exercise prescription or exercise sessions with an exercise specialist (Kolt, Schofield, Kerse et al., 2007; Petrella, Koval, Cunningham and Paterson, 2003; Halbert, Silagy, Finucane et al., 2000 respectively, cited by Stevens et al., 2014). Although adherence to the physical activity interventions improved in the trials reviewed and some recommendation was provided for a beneficial dose, there was little mention of the *specific* activities that participants were engaged in (Stevens et al., 2014).

1.7 Physical Activity Recommendations for Older Adults

The majority of the literature found in a literature search considered physical activity for older adults with a diagnosed pathology or those living in residential care establishments, rather than for community dwelling older adults with non-specific diagnosis or no pathology. Of the articles reviewed, none provided any specific conclusions with regards to advice on the *type* of physical activity recommended. Indications pertaining to the 'dose' are instead provided (that is, guidelines as to frequency, duration and intensity). This in itself might not be particularly useful to the older adult who is wanting to maintain or improve their functional status through physical activity, yet is unsure of whether they are working to the correct 'intensity' if they have no professional guidance and physical activity plans are not tailored to the individual.

Paterson and Warburton's (2010) review suggested the systematic reviews considered in their study provided 'vague' directions for the varieties of exercise that were beneficial for reducing functional decline. There was some indication that the exercise utilised within the trials included walking, jogging, cycling and gardening and that these activities, if performed to at least a moderate intensity level for 30- 45 minutes, 3 days a week would represent a minimum frequency and intensity to improve functional status in older adults. Patterson and Warburton (2010) also suggest that it was not possible to provide definitive guidelines for the intensity and volume of exercise. However, they recommended aerobic training, balance and resistance exercises combined in exercise programmes of moderate intensity exercise for 150-180 minutes per week. This concurs with current UK guidelines for aerobic physical activity being 150 minutes of moderate intensity activity, for example 30 minutes on at least 5 days of the week, or vigorous aerobic exercise for 30 minutes, 3 times per week to improve functional outcomes (DHPAHIP, 2011; HSCIC, 2017). However the DHPAHIP (2011) suggest for those already achieving moderate intensity levels of activity, 75 minutes of vigorous intensity activity spread across a week can also provide comparable

improvements, or a combination of moderate and vigorous physical activities in bouts of 10 minutes or more (HSCIC, 2017). This in itself might well appear confusing to older adults wishing to commence physical activity. In terms of resistance exercise, physical activities to work major muscle groups to increase bone and muscle strength and balance and co-ordination exercises for those at risk of falls are required at least 2 days a week (HSCIC, 2017).

Hamer et al. (2014) also highlight in the findings of their trial that significant health benefits were gained even in participants who commenced physical activity later in life but that the criteria used to define 'healthy ageing' itself can vary between research trials, which might have implications for comparison of trial results.

1.8 *Limitations of the Studies*

The studies at times utilised sub-categories for age within the 'older people' age bracket. Literature searches included studies with participants from the age of 50 (Stevens et al., 2014). This might have affected the comparison of results in the studies reviewed and the recommendations provided.

The ethnicity of participants was not consistently reported in any of the studies, although geographical location was considered, in terms of countries in which the studies were conducted. Given that ethnicity can have an impact upon predisposition to certain pathologies and one's life expectancy (Wilmoth and Simpson, 2013, pp.210-211) and 25%-30% of the variation of lifespan between individuals is suggested to be due to genetics (Waters and Kariuki, 2013) this may be of some relevance to the interpretation and application of trial outcomes.

Paterson and Warburton's (2010) systematic review contained studies with periods of follow-up between 2 and 35 years. The authors acknowledged that physical activity was often self-reported, as did Hamer et al. (2014) in their trial. This can cause difficulties in providing a correct figure for the amount of physical activity reported as there might be over-estimation or problems with retrospective recall, thus creating reporting bias (Sims et al., 2014).

It is likely to prove difficult to provide definitive guidelines for physical activity for older adults as physical activity programmes need to be tailored to individual older adults due to the likelihood of pre-existing pathology, which may impact upon the amount or type of

exercise advised. Flynn and Stewart (2013) suggest there are risks that older adults need to consider when exercising, in addition to tailoring programmes to accommodate any pre-existing conditions, including exercise machines not being designed for the older exerciser, weights being too heavy or increments too great.

Whilst the absence of definitive guidelines might be problematic for some group-based exercise programmes, in that a generic 'dose' of physical activity is provided within the class structure, group activities that can be tailored to individuals' own health status should provide functional benefits. The DHPAHIP's (2011, p.38) 'Start Active, Stay Active' exercise guidelines for older adults are said to provide a generic set of guidelines that are relevant 'irrespective of gender, race or socio-economic status' but it is acknowledged that programmes should be tailored to suit individuals, particularly for older adults with disabilities based upon one's personal capacity and known health risk issues. For some older adults, activity levels will need to be progressed on a more gradual incline towards achieving the recommended guidelines of 150 minutes and if surpassed, further health benefits will accrue (DHPAHIP, 2011). These inconsistencies in guidelines might in part account for the low uptake of physical activity in older adults if they are unsure of the right amount or type of physical activity (Allender, Cowburn and Foster, 2006). In the UK, 48% of men and 41% of women over 65 years of age meet current recommendations for aerobic physical activity levels, 13% of men and 10% of women over 65 years of age meet aerobic and strengthening guidelines and 27% of those additionally meet the balance guidelines (HSCIC, 2017). Flynn and Stewart (2013, p.91) note that only 6% of adults aged 75 and over are participating in the recommended exercise guidelines for vigorous activity for at least 30 minutes and 13% in the 65-74 age group in the United States of America. In a large Australian study, Sims et al (2014) found a greater prevalence of physical activity behaviour in men compared to women over the age of 65 years: they too concluded that for older adults to engage in physical activity, attention must be given to the physical and social environment and motivators for behaviour change. Motivators for physical activity in older adults have been found to include reducing the effects of ageing and being physically able to play with grandchildren (Hardcastle and Taylor, 2001, cited by Allender et al., 2006). Maxwell, Bastini, Vida and Warda (2002) further this by suggesting that physical activities should be culturally specific to optimise engagement in physical activity.

1.9 Chapter Summary

The main difficulties highlighted in the literature are that whilst guidelines for the intensity, duration and frequency of physical activity exist for older people, there is little recommendation for the specific *types* of physical activity that are beneficial. There is some suggestion that walking, jogging, cycling and gardening are suitable activities but there is criticism that this remains 'vague' (Paterson and Warburton, 2010) and that the methodologies reviewed contained insufficient details on the *minimum* volume of physical activity recommended to enable any strong conclusions to be formed. Stevens et al. (2014) acknowledge that all of the physical activity interventions in the studies they reviewed were left to participants to organise and as the studies were heterogenous in design and at times poorly reported, the types and quantity of activity were difficult to compare for the most beneficial intervention.

In addition, there may have been some discrepancy in defining what 'physical activity' is compared to 'exercise' in the articles reviewed. The ACSM define *exercise* as a 'physical activity that is planned, structured, and repetitive and [that] has a final or intermediate objective the improvement or maintenance of physical fitness' (Casperson, Powell and Christenson, 1985 cited by ACSM, 2011, p.1337). The term *physical activity* is defined as, 'any bodily movement produced by skeletal muscles that results in energy expenditure above resting (basal) levels. Physical activity broadly encompasses exercise, sports, and physical activities done as part of daily living, occupation, leisure, and active transportation' (Casperson, Powell and Christenson, 1985 and US Department of Health and Human Services, 2008, cited by ACSM, 2011, p.1337). For the purposes of this study looking at physical activity, it is considered as a leisure activity for older people, rather than exercise as a planned physical activity with specific health objectives.

Aerobic and strengthening exercises were found to be of benefit in the studies considered by Paterson and Warburton (2010) and included alongside these guidelines were the inclusion of balance and resistance exercise. The DHPAHIP (2011) guidelines also recommend older adults perform a physical activity to improve muscle strength in large muscle groups, balance and co-ordination (particularly if at risk of falls) on at least two days a week. It is also important to recognise the other variables that will have an influence on one's ability or desire to perform physical activities, such as disability levels, economic or environmental factors such as access, public transport and safe environments (DHPAHIP, 2011) and time poverty (Allender et al, 2006). Health professionals need to assist with changing negative views on ageing to encourage older adults to partake in physical

activities and positive healthy lifestyle behaviours to enhance quality of life. Wolff et al (2014) found that a 'views on ageing' component in physical activity sessions assisted with changing attitudes and related to longer term physical activity levels at 10-months post intervention.

The following chapter will move on to consider the potential benefits of dance as it has been mentioned in DHPAHIP (2011) guidelines regarding falls reduction, and more specifically Ballroom dancing as a physical activity suitable for older adults. Ballroom dancing involves strengthening core and large upper and lower limb muscle groups, balance, co-ordination and cardiovascular work and in addition its ability to enhance social, physical and mental health will be considered.

Chapter 2 **Dance and Health**

For centuries dance has been used as a therapy for healing and curative rituals, alongside medicine, religion and music in many cultures worldwide (Kiepe, Stöckigt and Keil, 2012; Meekums, 2008; Wennerstrand, 2008; Williams, 2004). It has been studied in diverse areas including anthropology, politics and health. Whilst the focus of this study is not dance as 'therapy' per se, but more so dance as a tool to maintain health and well-being, from a physiotherapy perspective it is of relevance to briefly consider the principles of dance/movement therapy (DMT) in healthcare and how they may be applied to dance as a form of physical activity to maintain or improve 'health'. Chapter 2 introduces the concept of dance as a therapeutic tool and presents a summary of the health benefits of different forms of dance for older adults. Following a literature search performed in a systematic manner, the health benefits of ballroom dancing for older adults are reviewed.

2.1 *Review of Different Types of Dance and Health*

Since the 1960s there has been a growing interest in dance as a therapeutic modality for physical and, in particular, mental health problems (Fairweather, 1997; Lee, 2004; American Dance Therapy Association, 2016; Association for Dance Movement Psychotherapy UK, 2013). Dance is said to be an enjoyable form of physical activity that can maintain good coordination, joint movement, flexibility and muscle tone and also has positive social and mental health benefits for older adults as it may assist with combatting social isolation and depression (Federici, Bellagamba and Rocchi, 2005; BUPA, 2011). Although ballroom dancing would not be classified as a DMT, due to being a partnered dance activity and movement dependent upon one's dance partner (Kiepe et al., 2012), some of the principles behind DMT are applicable in terms of therapeutic benefits. Haboush, Floyd, Caron, LaSota and Alvarez (2006) support this notion, particularly for the management of mental health conditions. Mendelsohn highlights the use of movement within DMT to "encourage contact, communication and expression of physical and emotional needs" (1999, p.65) in hospitalised children, yet it could be argued that these qualities are equally likely to benefit older adults who also may be troubled by social exclusion, loss of sense of human contact and human touch, community and self-esteem. Just as Goodhill and Morningstar stress the importance of dance as a therapy to maintain the "integrity of a child's body image when it is threatened by illness and hospitalisation" (1993, cited by Mendelsohn, 1999, p.66), the same could also apply to older adults whose body image may

be 'threatened' by the existence of the ageing process itself and the additional occurrence of age-related pathology.

The following sections will consider some of the health-related benefits of different forms of dance for older adults.

2.1.1 **Dance and Physical Health**

Dancing for 'bone health' has long since been suggested by the UK NHS (NHS, 2004) and the National Osteoporosis Society (2011). There appears to be a lack of research into the specific area of dance and bone health although Uusi-Rasi et al (1999 cited by Keogh, Kilding, Pidgeon, Ashley and Gillis, 2009) found older adult dancers demonstrated a significantly greater tibial bone mineral density than non-dancers. As such this warrants further dance-specific clinical trials, as it is well known that weight-bearing activity in general optimises bone density, maintains balance and assists with the reduction of falls in older adults (Federici, Bellagamba and Rocchi, 2005; Fernández-Argüelles, Rodríguez-Mansilla, Antunez, Garrido-Ardila and Muñoz, 2015; Keogh et al., 2009; Krampe et al., 2010).

Dancing includes elements of balance, co-ordination and resistance work and as a weight-bearing activity, and hence could assist with the mechanical stimulation needed to influence the rate of decline of bone mineral density loss, particularly in post-menopausal women (Rubin et al., 2004). Exercise programmes for older adults such as Campbell and Roberson's Otago Exercise Programme, which has been clinically proven to reduce the incidence of falls in older adults (2003) and Gottschalk et al's (*n.d.*) physical therapy exercises for the reduction of risk of falls among older community dwelling adults, both propose weight-bearing exercises that mirror dancing steps, such as backwards walking, heel-toe walking, turning around and side steps. Such movements are particularly prevalent in ballroom dances.

Exercise programmes often present barriers to older adults who lack confidence to travel to venues for fear of falling, or because they have other health-related issues that might affect motivation to participate in physical activity. However it is suggested dance engages older adults and increases adherence through enjoyment and improvements in physical attributes such as balance and mobility, which in turn have a positive impact on one's quality of life (Britten, Addington and Astill, 2017; Hackney and Earhart, 2009a; Krampe et al., 2010; Pisu et al., 2017). Fernández-Argüelles et al. (2015) performed a systematic review on the effects of dancing on risk of falling related factors in healthy older adults and reviewed 7

articles which demonstrated improvements in balance, physical function, dynamic joint mobility, gait and strength and hence would have a positive impact on the reduction of falls risk for older adults. Whilst the studies reviewed used validated assessment and outcome measure tools, there was a lack of homogeneity in the measures used making cross-study comparisons difficult, in addition to the variety of different styles of dance being considered, small sample sizes and lack of methodological quality highlighted within studies.

The effect of dance on balance has shown positive effects in several studies. Federici et al. (2005) performed a randomised controlled trial of a 3-month Caribbean dance-based exercise programme for 40 adults aged between 58 to 68 years of age. Of note, unlike many other studies on dance, this study included both male and female participants (14 males and 26 females) and all participants completed the trial. The dance programme successfully led to significant improvements in balance between baseline and at the 3-month completion of the study versus a no-activity control group who participated only in social activities, such as talking and board games and no significant differences were found between genders. In fact, the control group were found to have a slight non-significant deterioration in balance ability over the course of the study. It is unclear, however, why the no physical activity control group demonstrated a deterioration in balance, since one of the inclusion criteria for the trial was that only participants who did not exercise regularly were included. A decline in a 3-month period with no change in physical activity status would appear to be a relatively short period of time in which to demonstrate a decline, even accounting for age-related changes but these findings support the need to maintain regular and consistent physical activity in older age.

Zhang, Ishikawa-Takata, Yamazaaki, Morita and Ohta (2008) found male and female social dancers aged 60 years plus (n=112) in China demonstrated a significantly greater balance stability index, faster leg reaction times and a 'trend' towards faster walking speeds over a 10-metre distance in comparison to matched controls (n=112); and male dancers showed a greater flexibility than male controls. However, the group of 50-59 year old dancers in the study (n=90, versus n=90 matched controls) did not show such improvements, only improvements for lower back flexibility, with the authors concluding social dancing may have different health physical benefits for different age groups as the intensity of the dance may not have been sufficient to induce physical gains in middle aged adults as compared to older adults. The 50-59 and 60 year old plus age groups were chosen as primary aims of the study with the justification that over 60 year-olds were considered 'elderly' based upon Chinese people reportedly having a lower life expectancy than other industrialised countries.

Turkish folklore dancing has similarly shown improvements in physical performance and balance in over 65 year-old participants following the study of an 8-week, 3 times per-week dance intervention programme versus a control group (Eyigor, Karapolat, Durmaz, Ibisoglu and Cakir, 2008). Thirty-seven out of 40 participants completed the trial with statistically significant improvements in the physical performance tests found in the dance compared to the control group. However, the exercise group participants were also asked to walk for approximately 30 minutes twice a week during the trial; therefore there was in fact a second intervention that was possibly a newly introduced activity for intervention group participants and potentially lessens the effect of the dance exercise itself on the physical gains as it is not possible to dissect the effects of these two interventions. Further positive findings were demonstrated in a small group of 'frail' older adults in the United States of America (USA), although a specific age range is not referred to in the paper (Krampe et al., 2010). The 11 participants were community-dwelling older adults with comprehensive care packages in place to enable independent living, and were also supported by family at home. The timed get up and go (TUGT) and Functional Reach tests were employed as a combined measure to assess gait and balance changes in the group who had been participating in a type of therapeutic dance called 'The Lebed Method' for 6 weeks at a frequency of 3 times per week. Findings from the short-term intervention indicated improvements in the combined Functional Reach and TUGT of around 50% from baseline to 6 weeks after the start of the intervention, although these improvements were not persistent at the 6-week post-intervention measures (12-weeks post baseline). This is an important finding, since it indicated that short term programmes of dance activity can lead to considerable functional improvements in older adults but if the activity is not maintained, any physical gains will soon decline once more towards baseline levels. In clinical practice, often 6-week physical activity or exercise programmes are offered to individuals with the intention that the activity is then continued independently at the end of the 'course' of sessions. However, this is often not the case due to the barriers of exercising for some older adults and, as demonstrated in this albeit small sample group, there may be limited 'carry over' benefit from a short-term 'one-off' block of sessions. This would concur with the finding that the impact of rehabilitation programmes diminishes after cessation in physiotherapy (Gage and Storey, 2004 cited by Hackney and Earhart, 2009a) and therefore longer term benefits of short-term interventions if not maintained, may be negligible at best.

In a longer 24-week programme, a traditional Greek social dancing exercise programme was found to benefit a small sample of 14 female breast cancer survivors versus a sedentary control group (n=13) (Kaltsatou, Mameletzi and Douka, 2010). Significant improvements were found in between group post-test scores for physical and handgrip

strength following the 60-minute classes, which were held 3 times a week. Although largely a dance-based programme, upper body training was also included in each session, which might have positively biased the significant findings for handgrip strength and therefore makes it somewhat difficult to postulate and dissect the extent to which the dance element of the programme will have made to this significant finding. Mavrovouniotis, Arigiriadiu and Papaioannou's study (2008) of traditional Greek social dancing also found older adults achieved increases in heart rate sufficient for the dance activity to be of a moderate intensity, which would maintain cardiorespiratory fitness in accordance with the ACSM's (2011) guidelines on physical activity for older adults.

Dance has been used as a form of physical activity for older adults with known pathology, such as Parkinson's disease (PD) and dementia; showing promising results in some small-scale studies. Marchant, Sylvester and Earhart (2010) performed a battery of physical and questionnaire-based disease severity outcome measures in a pilot study of 'Contact Improvisation dance' (CI) with 11 mixed gender participants with PD. Ten dance sessions were held over 2 weeks and all participants completed the study. Even within this short period of time, significant improvements were seen in functional outcome measures. There were also significant positive changes to gait cycles indicating more time spent in a swing and less time in a stance phase of gait, thus 'normalising' the gait cycle somewhat, which is clinically significant as it can reduce the risk of falls. These CI results were then compared to a previous similar study using tango as a dance intervention for PD patients and it was concluded there were no significant differences between the two types of dance; both provided similar benefits even in a short period of time. Although both forms of dance are based around improvisation, the authors suggest CI might be easier for some individuals with pathology such as PD because tango requires dancers to learn steps prior to being at a level at which they are able to improvise dance routines. The learning of fairly complex steps and patterns of movement in tempo with music may prove difficult for individuals with such pathologies due to their impaired neurological function.

Due to a plethora of reliable and valid clinical outcome measures used in clinical practice to assess physical functions such as balance, it is not entirely possible to compare trials on the basis of outcome measures used, since different measures have been employed and they should also be population-specific in trials; for example some measures of balance are best suited to those in community-dwelling settings, others for hospitalised patients (AGILE, *n.d.*). Indeed Keogh et al. (2009) support this by suggesting 'questionable' use of some outcome measures in their review of the physical health benefits of dance for older adults; for example, by the use of static balance tests when assessing falls risk. Because falls are

inherently *dynamic* in nature, dynamic balance tests would have provided greater specificity to trials. Although the tests employed, such as the Berg Balance Scale, are commonly used clinically, reliable and valid measures, they might have 'ceiling effects' in some of these studies as the dancing populations often displayed functional independence at baseline; therefore participants might have already scored high or maximum points. In addition, although all consider dance-based activities, many of the papers differ in the specific type of dance employed as an intervention; for example, using individual, group or partnered dance activity, which also makes comparisons between trials difficult. Many of the studies had small sample sizes and included predominantly female participants, making inferences to similar health benefits for male dancers problematic. However, the studies mentioned above are unanimous in their findings that there are substantive findings for improvements in several key elements of physical health for successful ageing.

Keogh et al's (2009, p.17) review of the physical benefits of dancing summarises these to include improvements in aerobic power, lower limb muscle endurance, strength, flexibility, static and dynamic balance, agility and gait speed of female dancers.

2.1.2 **Dance and Mental Health and Well-being**

There is a general consensus throughout the literature on dance as a form of physical activity that it is a 'fun' and 'enjoyable' activity that can hold an important role in successful ageing (Keogh et al., 2009). Albeit in younger ballroom dancers, Zajenkowski, Jankowski and Kołata (2014) found that dance did elicit difference mood states and this was situation specific; for example competitive dancers had higher states of tense arousal prior to the competition and demonstrated less pleasure during the dance when compared to recreational dancers, who demonstrated positive changes in mood, arousal and increased energy after dancing. This is in agreement with Kiepe et al's (2012) study that demonstrated increased well-being and decreases in depression and psychological distress for adults with mental illness who danced.

Borges de la Costa (2012) discusses the implementation of 'circle dance' as a tool for optimising well-being based on the occupational therapy theory that well-being is "shaped by the idea that individuals gain benefits through engagement in meaningful activity" (p.115). Circle dance is advocated as a physical activity drawing on the tradition of folk dances from many different cultures. The interaction of holding hands and performing steps in time with the rhythm of the music emphasises the importance of the group dynamic and assists with a sense of improved well-being, spirituality, social identity, belonging and

quality of life in a range of dancers; for example, for individuals with dementia and mental health conditions.

In Kaltsatou et al's study (2010) of traditional Greek dancing there were significant improvements in life satisfaction (36.3% as measured by the Life Satisfaction Inventory) and significant reductions in depressive symptoms (35% as measured by the Beck Depression Inventory) in their experimental group of breast cancer survivors ($n=14$) adhering to the programme of dance exercise classes versus the control group ($n=13$). The authors note the strength of this finding given the diagnosis, possible prognosis and medical management of breast cancer and the impact this can have on an individual's body image, psychological well-being and quality of life. In addition, the improvements in physical function discussed above possibly link to an improvement in psychological well-being as the links between physical activity and improved mental health are well documented (see Cox, 1998; Zajenkowski et al., 2014).

Eyigor et al's (2008) 8-week Turkish folklore dancing study ($n=19$ in the dance group, $n=18$ in the control group) similarly showed improvements in some of the subscales of the SF-36 quality of life questionnaire, for physical functioning, general health and mental health. However, there were no significant improvements for depression scores as measured by the Geriatric Depression Scale (GDS), quite possibly because it was not a sufficiently sensitive measure in this population of physically active adults; of whom more than half scored as 'normal' at the GDS baseline assessment. The dance was performed in a group exercise setting and it is noted by the authors that this might have increased motivation. Indeed, such enjoyment can be demonstrated by the dance participants in Zhang et al's (2008) study who performed an average of 479 minutes of social dancing per week, which is beyond the ACSM's exercise guidelines (2011). The coupling of movement to musical accompaniment is noted by Mavrovouniotis et al. (2008) to provide a significant improvement in psychological well-being and reduced anxiety. They studied quality of life in a group of 111 older adults who participated in traditional Greek dancing for 10 weeks, compared to a matched control group who 'socialised' and watched television for one hour a week. It was found that the dance intervention had a positive effect in increasing well-being by significantly reducing anxiety and stress levels in comparison to the control group and it was suggested this was linked to improvements in physical fitness, improved body image and provides 'time out' from life's problems. Keogh et al. (2009, p.3) advocate dance as 'a connection to everyday life' through its promotion of a sense of community. In addition, Roberson and Pelclova (2013) acknowledge the 'serious' situations older adults often face,

such as bereavements of partners, friends and family and ill-health and the role that dance can play in providing some enjoyment in life.

2.1.3 **Dance and Dementia**

Verghese et al. (2003) examined the relationship between leisure activities and the risk of dementia in 469 community-dwelling adults over the age of 75 years as part of a large 21-year prospective study of ageing. None of the participants had a diagnosis of dementia at baseline. The authors found a protective effect of cognitive leisure activities at baseline, such as reading, playing board games or musical instruments; in that increased participation in such activities at baseline was associated with a reduction in memory decline. Dancing was found to be the only physical leisure activity associated with a reduced risk of dementia although the frequency, intensity or type of dancing was unclear. It was hypothesised that dancing was beneficial because of the pattern-recognition of dance steps and having to follow the rhythm of the music when dancing. With other physical activities such as group exercise and walking, both of which are common activities for older adults to become involved in seemingly not providing a protective effect against the risk of dementia, the finding that involvement in dance did reduce the risk of dementia indicates its potential worth as a cognitive, as well as physical activity. However, it is unclear whether this reduces the risk per se or if it slows the pathological process of dementia in its pre-clinical phase. Whilst it was suggested that further controlled trials were necessary to consider the protective effect of leisure activities on dementia, this is likely to be ethically problematic over long-term studies such as this one, if groups are not involved in leisure activities that have previously been found to demonstrate some protective effect. In the UK, it is estimated that there are 800,000 people living with dementia and these figures are predicted to double by 2040 due to an ageing population (Parkin and Baker, 2016). Therefore, activities that have the potential to reduce the risk of dementia, such as dance, should be promoted by healthcare professionals.

2.1.4 **Dance and Social Health**

Within the present generation of older adults, many will have learnt some form of dance at school, spent time in dance halls in their youth and indeed in young adult years, may have met their life partners at such venues. Keogh et al. (2009) acknowledge that earlier experiences with dance are likely to have been positive social experiences; therefore it may be a less 'threatening' and popular choice of physical activity to return to, since it holds some familiarity and promotes social interaction and a sense of community. The sense of

45

community, belonging and enjoyment of dance is further emphasised in Roberson and Pelclova's (2013) study of social dancing in the Czech Republic as being due to the historical importance of folklore dancing, singing and costume in Czech Republic communities ('social' in this sense referred to dancing that is not a formal physical activity dance class with a taught element and is often 'citizen initiated'). Using participant observation, case study, questionnaire and focus group methods they raised 3 key themes: social dance was considered to be a vigorous physical activity for dancers yet was considered a fun activity more so than a form of exercise; social dance and a 'party' atmosphere, with the inclusion of music, conversation, dressing for the dance and socialising with friends all adding to the enjoyment of the dance; and 'reconnection to one's history', whereby dancers restored memories of dancing at school, 'old music', national folk songs and participants 'dancing like they were younger' (Roberson and Pelclova, 2013, p.9). They concluded that dance was a significant cultural activity providing a safe place for older adults to participate in sufficient levels of a 'fun' and 'enjoyable' form of physical activity each week and one that provides social interaction, human contact, opportunities to 'look one's best', reminiscence and the opportunity to find new friendships and partnerships.

Reinforcing the 'cultural' theme; Kaltsatou et al's study (2010) suggests a key factor in the enjoyment of dance is the importance of its cultural role in Greek national identity, with dance being prominent in celebrations and ceremonies in Greek society. Eyigor et al's (2008) research similarly highlights the importance of dance within Turkish culture with regards to its cultural significance making participation more enjoyable. Roberson and Pelclova (2013, p.2) also suggest that the body movement involved in dancing is "a natural expression of one's culture" and this cultural element contributes to the popularity of dancing.

In addition to the physical health benefits mentioned above in section 2.1.1, Federici et al. (2005) also found a Caribbean dance group demonstrated statistically significant improvements in sexual activity and sleep quality and non-significant reductions in smoking and alcohol consumption, suggesting dance can have a beneficial effect on some of the psychosocial factors of health. Whilst this is a lot of outcomes for a small study of 20 dance group participants in the dance group and perhaps over-capitalisation on chance these are, nonetheless, overall positive results that demonstrated significant improvements in a short 3-month period of dance activity.

2.2 **Chapter Summary: Limitations and Conclusions**

Whilst these studies show numerous health benefits of different types of social dancing as an individual or group activity it is not entirely straightforward to apply all these benefits to social ballroom dancing, as it is a more formal 'partnered' activity. This is likely to have an impact upon many factors associated with the activity; for example, adherence to the dancing if one partner is unable to participate due to illness or the individual capabilities of each individual in the dance partnership. Keogh et al. (2009) suggest that future research into the uptake and adherence to dance-based activity would be helpful to understand the barriers older adults might face for participating.

The above papers also tend to predominantly include female participants, so whilst there is some evidence health benefits are gained by male dancers too, the evidence for this is not as comprehensive. Many of the studies were fairly short term, pilot or small scale studies, with insufficient detail about randomisation or blinding of assessors and at times utilised outcome measures that, although validated, might not have provided sufficient sensitivity or specificity for the populations studied. Fernández-Argüelles et al's (2015) systematic review of the effect of dancing on falls risk in older adults notes several problems with the published trials: firstly, there is a paucity of evidence considering dancing; secondly, that which has been published largely focuses on participants with known disease or illness. There has been a range of ages and different types of dance studied, and different variables and a heterogeneous set of outcome measures used to measure them, with no consensus on frequency, duration or timing of dance sessions; thus making cross-study comparison difficult. Therefore results, albeit often positive, are based on small-scale studies that may not be generalisable to the older adult dancing community or general population, so further research into the optimum time and frequency for dance sessions to provide statistically significant health benefits would be of value.

Chapter 3 follows with specific consideration of Social Ballroom Dancing and health for older adults.

Chapter 3 **Social Ballroom Dancing (SBD) and Health**

Following the review of the health benefits of different types of dancing for older adults in Chapter 2, Chapter 3 considers the specific type of social ballroom dancing and its influence on health and well-being for older adults.

3.1 ***Background to the Study***

This research was in its embryonic stages at a time when the Chartered Society of Physiotherapy's 'Move for Health' campaign (a partner of Change4Life, 2009) was launched (CSP, 2009). The then Labour government's health policy reflected the need to raise the nation's activity levels to prevent public ill-health. In addition, health policies aimed to improve the prevention of public ill-health nature of the NHS, thus easing the long-term economic burdens of rising obesity, inactivity levels and the ageing population.

In the UK, the success of the BBC television series *Strictly Come Dancing* (SCD) over the last decade has helped ballroom dancing to lose its 'old-fashioned' label and led to a resurgence of social ballroom dancing in communities (BUPA, 2011). Of note for this research, the programme has included a number of older adult and male celebrity contestants each year. Whilst the benefits of physical activity in general have been well researched in a variety of age-groups, there remains a paucity of evidence, albeit now growing, of the specific health benefits of social ballroom dancing for community-dwelling older adults. As a physiotherapist who participated in ballroom dancing, with a special interest in the promotion of public health, I wished to explore further the health benefits of social ballroom dancing for community-dwelling older adults.

Dance has often been associated with political activity, and its resurgence in popularity did not go un-noticed in 2009 with the then Labour government enlisting one of SCD's ex-judges to be a government 'dance champion' with the hope that a famous figure might help encourage sedentary people in the UK to dance. Local councils also began to hire experts as local 'dance development officers' to encourage all generations on to the dance floor (Hastings and Holehouse, 2009) and due to its success, this is still in place in many communities at the present time. Whilst there was some suggested criticism of the council-funded dance schemes in the media (Hastings and Holehouse, 2009), the promotion of *any* inclusive physical activity by local councils was seen as a positive step, not least because the promotion of healthier lifestyles can assist with successful ageing for older adults and

perhaps prove cost effective for health services. Indeed, Macdonald (2010) called for more dance workers to be employed by health services due to its recognised health benefits.

Ballroom dancing classes are likely to be perceived as a less threatening environment for those who are beginning a new form of physical activity. This might particularly be the case for older adults as it is a 'partnered' activity, which tends to attract couples who have recently retired or groups of friends to attend classes, as well as individual participants.

Although perhaps not throughout its history, SBD has more recently been seen by many as an acceptable form of physical contact with partners of the opposite sex (Nieminen, 1998). However, there are also ballroom dance classes aimed solely at same-sex couples and these might also be enjoyed by women whose cultural beliefs restrict pre-marital contact with the opposite sex, albeit likely to be women of a younger generation or older women who feel less comfortable dancing with a male who is not a life partner. Lima and Vieira (2007) note in their study of older adult ballroom dancers in Brazil, that some women still felt uncomfortable dancing 'cheek to cheek' with someone who was not a close friend, so same sex classes might also be favoured by some older adult women. Therefore SBD can be enjoyed by a diverse range of social groups and it can help to develop new social networks within a SBD community. This is of particular value for older adults who often find themselves at risk of social isolation following changes in social communities and circumstances after retirement, bereavements, periods of reduced mobility or ill-health. In addition, one of the factors contributing to risk of falls for older adults is the fear of falling itself, which might well prevent older people from seeking new opportunities to be involved in physical activities for fear of leaving the home environment (McKinley et al., 2008).

3.2 *Social Ballroom Dancing for Health and Well-being in Older Adults*

As concluded in chapter 1, physical activity should be encouraged in older adults. It can help to maintain healthy lifestyles, functional independence, prevent falls and age-related decline in strength and bone density (Campbell and Robertson, 2003; Flynn and Stewart, 2013). Whilst physical activity is recommended for older adults, there remains a paucity of evidence for specific *types* of exercise that are beneficial. This is likely to be because programmes often need to be tailored to the needs of individuals who may have multi-pathology when entering older adulthood.

Social ballroom dancing is a physical activity that includes elements of aerobic, balance and strengthening exercise (Blanksby and Reidy, 1988; Gomes da Silva Borges et al., 2014; Verghese, 2006). It is an inherently social activity that can help build one's confidence, skills and sense of worth (Cooper and Thomas, 2002), therefore, it appears to be an ideal physical activity to engage older adults.

Considering the findings of the above papers studying different dance forms in sections 2.1.1 to 2.1.4, and the recommendations for physical activity suggested in chapter 1, it is suggested that social ballroom dancing could be a suitable physical activity to enhance the physical, social and mental health components of resilience in ageing.

3.2.1 The Literature Search

Electronic search strategies were performed in a systematic manner to consider the evidence for ballroom dancing as an activity to benefit health (encompassing physical, mental and social aspects) in older adults. The following electronic databases recommended for healthcare and physical activity research were used: Cumulative Index to Nursing and Allied Health Literature (CINAHL), PEDro, Rehabdata, Cochrane Library, NICE Evidence Search Health and Social Care, Social Care Online Care Institute for Excellence, PubMed, Scopus and PsychInfo. The search keywords initially were 'ballroom dancing', 'ballroom danc*', 'tango dance', 'waltz dance', 'foxtrot dance', 'quickstep dance' and 'salsa dance'. Restrictions were placed on older adult age groups but there were no restrictions on publication dates as only small numbers of 'matches' were being returned for the keywords in these health databases.

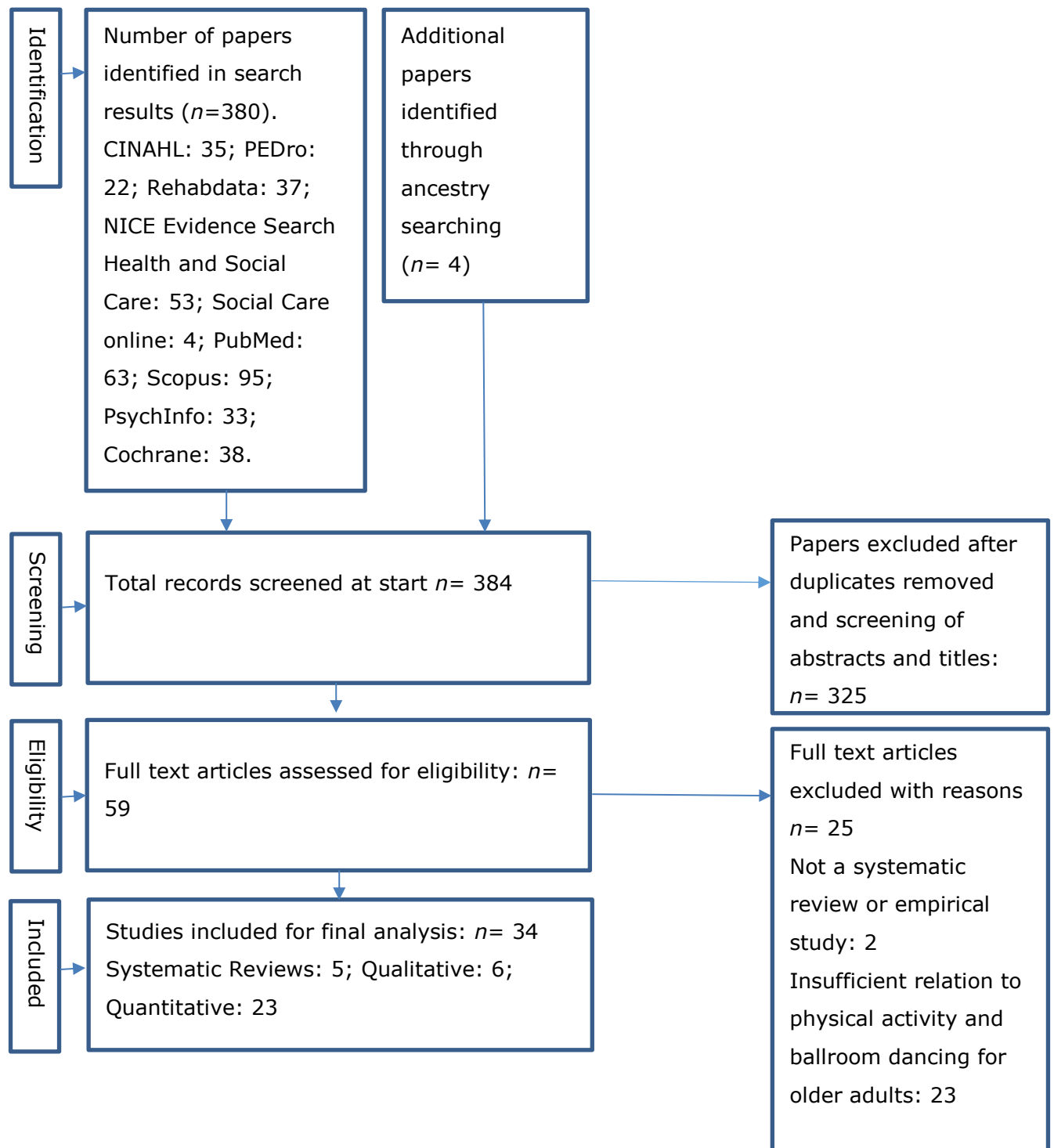
Inclusion criteria for full review were: 1) studies written in English; 2) specific focus on ballroom dancing; 3) older adult age group; 4) empirical research, review or editorial articles. Exclusion criteria were: 1) publications not written in English; 2) studies with insufficient relation to social, mental or physical health effects of ballroom dancing; 3) studies with adapted forms of ballroom dancing such, as chair-based dance exercises.

3.2.2 Search Results

An initial full search was conducted in 2010, with updates in 2015 and 2018. The final selection of papers was based on the updated February 2018 search. The final database search yielded 380 papers from the chosen health-related electronic databases and 4 additional papers by ancestry searching using the keywords listed above. The 384 articles

were then further examined against the inclusion and exclusion criteria, specificity of content to ballroom dancing and health by titles and abstracts and duplicates removed (n=325). Since 9 electronic databases were utilised for searches within the total number of papers there were a considerable number of duplicates removed. Numerous papers made reference to dance-related terms for example, 'two to tango' but were related to subject areas such as biochemistry, not dance. Fifty-nine papers remained for a full text review. Following this process a further 25 papers were excluded according to the exclusion criteria, leaving 34 articles for the final analysis. The search strategy and findings are presented in a PRISMA flow diagram (PRISMA, 2015) in Figure 1 below. Summary charts for the findings from systematic reviews, qualitative and quantitative studies found are presented in Appendix 1. Critical appraisal tools, such as those used in pure systematic reviews, were not utilised to consider the findings in this instance as the initial searches at the start of this study yielded limited data to formally appraise and this could be a limitation of this process, although section 3.7 follows to provide a commentary on the studies' limitations. Whilst the approach to this literature search was systematic, it was not a true systematic review methodology, for which the benefits of critical appraisal tools as discussed by Gough, Oliver and Thomas (2012) are recognised.

Figure 1 PRISMA flow diagram for ballroom dancing and health literature



3.2.3 **Summary of Literature Findings**

The literature search was performed to gather evidence published on the health benefits of ballroom dancing. Thirty-four papers (6 with qualitative methodologies, 23 quantitative research studies and 5 systematic reviews) met the inclusion and exclusion criteria and considered ballroom dancing for older adults. Papers considered older community-dwelling adults or those in residential care, with or without pre-existing pathology. The findings are presented in a tabulated form in Appendix 1.

Of the 34 papers considered in full, 11 studies focused on aspects of physical health in older adults, 5 on mental/cognitive health, 6 on ballroom dance experiences and 12 on physical and mental/cognitive health. Fourteen of these studies considered the health effects of ballroom dancing for groups of individuals who had a pre-existing, diagnosed pathology.

3.3 ***Social Ballroom Dancing and Physical Health in Older Adults***

The ageing process is generally considered alongside negative changes to physical health, such as a declines in function, mobility, muscle strength, vision, vestibular, somatosensory and central nervous system changes and an increased risk of falls, yet there are limited numbers of older adults participating in vigorous physical activity which could have a preventative effect on such age related decline (Flynn and Stewart, 2013; Fernández-Argüelles et al., 2015; Gomes da Silva Borges et al., 2014). Figures suggest 13% of adults in the 65 to 74 age-group and 6% over the age of 75 participate in vigorous activity, with 35% of males and 45% of females aged over 75 being considered inactive (Flynn and Stewart, 2013 p.91). This section reviews the studies focusing on social ballroom dancing as a physical activity for older adults to improve physical function.

The literature refers to positive physical health for older adults alongside such terms as 'functional independence' and 'functional autonomy'. Functional independence is defined as the ability to perform activities of daily living (ADLs) independently; or 'functional autonomy' in therapeutic terminology is defined as being able to reside independently in a domiciliary sense (Curzel, Forgiarini and de Mello Rieder, 2013), but both terms are used interchangeably and associated with successful ageing. The ability to perform ADLs and therefore demonstrate functional independence will consist of individuals demonstrating sufficient functional abilities in strength, balance and joint mobility. It is difficult to separate

these physical components and maintain functional independence, hence these factors are often included in elements of functional outcome measures.

Kiepe et al. (2012) performed a systematic review of the effects of dance therapy and ballroom dances for adults with physical and mental illnesses. Of the 5 articles with a focus on ballroom dancing cited in this review (Belardinelli, Lacalaprice, Ventrella, Volpe and Faccenda, 2009; Haboush et al., 2006; Hackney and Earhart, 2009a and 2009b; Hackney, Kantorovich, Levin and Earhart, 2007) all were noted to have used validated measures to assess for post intervention changes in various components of health, these being; balance, gait, depression, quality of life and psychological measures and disease specific outcome measures. Abreu and Hartley's (2013) case study of an older adult with Alzheimer's, co-morbidities and recurrent falls demonstrated that a 12-week salsa dancing programme lead to improvements in functional activities, strength and mobility outcomes.

These papers found positive changes to some of the outcomes measured including improvements in balance, co-ordination and cardiopulmonary benefits and are considered further in the relevant health sections of this chapter. It is worth note at this point that Kiepe et al. (2012) present limitations to these studies such as small sample sizes in the dance intervention groups, with some dance groups being older and in poorer health than comparison groups (for example in Hackney et al's 2007 study of PD patients), which might account for a lack of differences found between the interventions. Pisu et al. (2017) also highlight the benefits of ballroom dancing for individuals who have survived cancer. Whilst their adult population was not entirely specific to older adults, promising findings were highlighted in terms of its benefits for improving quality of life, time spent with partners and being able to exercise together and to provide a means for individuals to return to an active lifestyle post-treatment.

There have been several relatively short-term studies of ballroom dancing for older adults with Parkinson's disease (PD), which have shown promising improvements in balance and function. Postural instability, gait disturbances and a reduction in functional mobility, particularly 'freezing' of gait are common physical problems associated with PD (Hackney and Earhart, 2009a); all of which have implications for functional independence and risk of falls. Ballroom dancing has been found to assist with improvements in co-ordination and turning for people with PD (Hulbert, Ashburn, Roberts and Verheyden, 2017) and significant improvements in dynamic balance (Rios Romenets, Anang, Fereshtehnejad, Pelletier and Postuma, 2015). Blandy, Beevers, Fitzmaurice and Morris (2015) performed a feasibility study of tango dancing with a small cohort of 6 older adults with PD over a short period of 4

weeks. Adherence to the programme was 89% and it was deemed to be a safe activity. In addition, involvement in ballroom dancing has been found to assist with encouraging individuals with PD to increase participation in activity and engage in new activities (Foster, Golden, Duncan and Earhart, 2013). Whilst these results have provided an indication of positive findings, they have largely been short-term and involving fairly small numbers of participants. This might account for the inconclusive results of some outcome measures, such as in Kunkel et al's (2017) feasibility RCT of ballroom dancing for PD.

In Hackney and Earhart's (2009a) short-term pilot study, the benefits of high-dose social tango classes for a group of 12 community-dwelling older adults with idiopathic PD was assessed. Participants were involved in dance classes for 90 minutes per day, for 5 days a week over a period of 2 weeks. Although there is recognition of the small sample size and it was a relatively short but very intensive tango course, significant improvements were found in balance and functional mobility measures and non-significant improvements in mobility outcomes. The authors discussed the attrition rate of 14% (2 of the original 14 participants were unable to complete the programme due to health and family issues) and they suggested this was good considering the classes were 5 days a week and when compared to similar studies of general exercise programmes (which had attrition of more than 30%) and cited reasons for the good attrition being the enjoyment, improvements in well-being and a desire to continue the programme post-study reported by the participants in informal interviews. This study was followed by Hackney and Earhart's (2009b) extended randomised controlled trial of ballroom dancing programmes for older adults diagnosed with idiopathic PD. This study was novel in that it compared two different dance groups, and three difference dances to a control group. Participants were randomly assigned to a Tango (n=14) a Waltz/Foxtrot group (n=17) or a control group (n=17). Classes were of one hour's duration and held twice a week and participants had to complete 20 lessons within 13 weeks; therefore a less intense but longer duration programme than their 2009a study. Balance, functional mobility and forwards and backwards walking were measured pre and post-intervention using the same outcome measures as in Hackney and Earhart (2009a) with the addition of the Freezing of Gait (FOG) questionnaire (Giladi et al, 2000, cited by Hackney and Earhart, 2009b). Both dance intervention groups were found to improve significantly versus controls for balance, backward stride length and mobility measures and these were also said to be 'clinically significant' changes (meaning that a participant might have moved to a lower risk group for falling) compared to controls. These are positive findings in a relatively short duration trials of 12-weeks (2009b) and Hackney and Earhart's 2-week intervention (2009a) trial, and might be used as motivational factors to encourage people with PD to participate in dancing.

In a slightly earlier, larger, longer duration study, Hackney et al. (2007) considered the effects of tango dancing compared to an exercise class on functional mobility in 19 participants with a diagnosis of idiopathic PD. Participants were randomly assigned to tango T (n=9) or exercise E (strength/ flexibility exercise) groups (n=10). Both of the groups participated in two 1-hour dance/exercise sessions per week for a total of 20 sessions within 13 weeks. There were no significant differences in terms of functional mobility, gait mobility or freezing of gait between the tango and exercise groups at baseline on all measures. Overall, although there were improvements in balance and mobility in both the tango and exercise groups, the improvements were found to be stronger in the Tango group and there were fewer overall gains in the exercise group. This was postulated to be due to many of the exercises being performed in a seated position compared to the more dynamic, standing nature of the tango classes. The sample size was very small and had a greater attrition rate at approximately 20% than the 2009a study (which was accounted for by it being a longer duration trial), but it did indicate some differences between the tango and other forms of exercise. It might also be due to the nature of the music, the staccato movements in tango and stop/start nature, that is beneficial to PD patients to initiate movement through external cues (such as the music and the partner in tango) and step patterns after episodes of freezing of gait (Hackney and Earhart, 2009b), which might explain the positive findings in Hackney and Earhart's (2009a) trial for improvements in the freezing of gait in the tango group compared to the waltz/ foxtrot group or controls. Since most ballroom dancing classes will teach a variety of dances, it is of relevance that some dances might provide more beneficial effects than others, particularly when recommendations are that exercise is tailored for older adults as discussed previously in chapter 1. It is perhaps relevant to consider these findings that tango appears to provide superior benefits compared to other dances or other exercises for older adults with PD so that tango might be a targeted dance programme for PD, particularly when there is some evidence to suggest the basal ganglia, which are affected in PD, demonstrate increased activity in tango dance movements (Brown, Martinez and Parsons, 2006 cited by Hackney et al., 2007). Lakes et al. (2016) demonstrated that the physical benefits of social ballroom dancing are perceived to be greater the longer the time one spends dancing.

Waltz dancing for patients with chronic heart failure has been studied by Belardinelli et al. (2008). In their 8-week randomised trial of 130 individuals with chronic heart failure, waltz dancing (n=44) was compared to an aerobic exercise programme at 70% of peak VO_2 (n=44) and a non-activity control group (n=42). Both the dancing and exercise groups met 3 times per week over the 8-week study period. In the 128 participants who completed the trial, improvements were shown in both the dance and exercise groups versus the control

group in peak VO_2 , and this increased functional capacity also showed significant improvements in ventilation and cardio-circulatory efficiency. The Minnesota Living with Heart Failure Questionnaire (MLWHFQ, Rector and Cohn, 1992, cited by Belardinelli et al., 2008) scores for the dance and exercise group demonstrated improvements, although the emotional score improvements for the dance group were more marked than in the exercise group. Of note, adherence to the dance programme was better than in the exercise group, which might provide some further indication that dancing is an activity that older adults are motivated to participate in, possibly more so than generic exercise classes. As ballroom dancing is a partnered activity, the act of being in a 'couple' might also help to enhance the social aspect of dance, in addition to being in the group as a whole and therefore assist with improving one's emotional status.

McKinley et al. (2008) conducted a study of a community-based, 10-week Argentine tango programme and its effect on functional balance and balance confidence in a group of 25 older adults aged 62-91 years of age. Participants had all sustained a fall within the previous 12 months and had a fear of falling, but were otherwise healthy enough to complete the programme. The tango programme (n=14) was compared to a walking exercise programme (n=11), and outcome measures were performed pre-intervention at one week prior to the start of the classes, post-intervention one week after the classes ceased and at follow up; 1 month after the classes finished. The tango and walking groups met for 2 hours twice a week and participated in a total of 3 hours of exercise, as each session included a 30-minute rest period. Post intervention change scores for sit-to-stand, normal walk speed and the Activities-specific Balance Confidence scale were greater in the tango group compared to the walking group, although the authors note that this might be due the baseline scores for the tango group being poorer, thus the gains were greater. In addition, tango was found to be a 'sustainable' activity in terms of adherence as many of the participants continued with classes after the end of the trial, which echoes the findings from Hackney and Earhart (2009a) and Pinniger, Brown, Thorsteinsson and McKinley (2012). However, albeit in a small sample the clinically important findings indicated that many of the participants moved from high to moderate or low fall risk groups at the post intervention tests and these improvements were maintained at the one-month follow-up period. The maintenance of findings at one month suggests there may be more positive carry-over effects if interventions are run for longer periods of time, in this instance 10 weeks, compared to Krampe et al's (2010) shorter 6-week study as previously mentioned, whereby improvements were not maintained at a further 6 weeks post therapeutic dance intervention. As Teixeira-Salmela et al (2005 cited by McKinley et al., 2008) suggest, one

month is sufficient time to observe decline, this could also indicate that different types of dance provide greater and more sustainable health benefits than others.

In Verghese's (2006) study of cognitive and mobility profiles, 24 older social dancers (OSD) aged 70 and over were matched for age, gender and education to 84 older non-dancers (OND). The mean age of the OSD was 80 years and the OND group 80.8 years and dancers had been dancing for long periods of time (mean 36.5 years (SD 26.5 years)). Participants were identified from a non-disabled, community-residing group of participants and tested for balance, gait and physical performance. The OSD performed better than the OND in gait and balance tests, for the physical performance battery tests and unipedal stance and demonstrated longer steps, strides and a faster walking speed but there were no significant differences in strength as demonstrated by chair rise and grip strength tests. The results for the gait tests, as analysed using a computerised gait mat, demonstrated the dance group walked faster, had a more stable gait pattern, thus 'normalising' gait and had a lower frequency of falls, albeit not significant. However the small scale nature of this investigation means that further larger trials would be of benefit to assess for significant differences in falls risk and occurrence but there are some indications of clinically relevant changes and benefits to physical performance for long term older adult dancers.

In a randomised controlled trial (RCT), Gomes da Silva Borges et al. (2012) studied the effect of ballroom dancing on the 'functional autonomy' and postural balance of institutionalised older adults in Brazil. Eighty older adults from 3 long-term institutions were randomly assigned to an experimental ballroom dancing group (EG) or Control Group (CG), although details were unclear as to how the random selection of participants occurred. Five participants withdrew leaving 39 participants in the EG and 36 in the CG. The intervention in the EG was a 50 minute ballroom dance programme 3 times per week for 8 months. The CG maintained normal activities of daily living and no participated in no other physical activity for the duration of the study. For functional autonomy and balance outcomes the ballroom dancing EG obtained significant differences to the post-intervention, thus increasing the level of functional autonomy and physical balance in institutionalised older adults. The protocol tests measured provide good examples of functional activities that older adults would need to complete as ADLs, such as sit-to-stand, walking 10 metres and dressing in a shirt. Therefore significant improvements in these tests would assist with individuals being able to live more autonomous lives and perhaps require less physical assistance. This is of note as the authors cite the work of Ramos et al. who suggest that "the most important factor that affects dependence and the risk of mortality in older adults is their ability to perform ADLs" (2001, cited by Gomes da Silva Borges et al., 2012, p.495).

In a further RCT involving institutionalised older adults in Brazil, Gomes da Silva Borges et al. (2014) studied the influence of ballroom dancing on balance and falls. Fifty-nine community dwelling older adults in long-stay institutions were included in the trial and randomised into either a dance group (n=30) or control group (n=29). The ballroom dancing classes consisted of 3 x 50 minute sessions per week on alternate days over a 12 week period. It was found that the dance group improved significantly between pre and post-tests compared to the control group and the dance group also demonstrated a significant reduction in the number of falls from the pre to post test period. The authors concluded that ballroom dancing could assist with improved postural balance, the occurrence of fewer falls and improved functional autonomy in older adults. Although by 12-weeks of intervention physiological gains are likely to be expected, it remains a relatively short period of time to demonstrate significant positive findings. Reductions in falls and improved balance after only 12-weeks of ballroom dancing could be used as a motivational factor when trying to engage older adults with ballroom dancing as a suitable physical activity to improve functional autonomy.

In an observational cross-sectional study Rahal et al. (2015) studied Tai Chi Chuan and ballroom dancing to consider which activity promoted better postural balance, gait and postural transfer in active, independent older people over the age of 60. Those included in the dancing group and Tai Chi Chuan groups had to be participating in their respective activities for at least 3 times per week for at least 1 year. Static and dynamic balance was assessed using an electronic balance force plate system and clinical outcome measures. It was concluded that older adults participating in Tai Chi Chuan had faster walking speeds, shorter sit to stand test times and better static bilateral postural balance with their eyes open or closed compared to the dancing group but that the dancing group presented better unilateral balance with their eyes closed. A reduction in postural sway and greater balance abilities are likely to have a positive impact for older adults and reduce one's falls risk. The slow, controlled and sequential nature of Tai Chi Chuan movements between unipedal and bipedal stance is likely to explain the greater balance ability within this group compared to the ballroom dancers. However, further studies would be useful as the Tai Chi group included more participants (n= 51 and Dance n=25) and a comparison to a matched control group might provide an indication that whilst ballroom dancing does not demonstrate findings as positive as for Tai Chi, that it still proves more beneficial to static and dynamic balance than other forms of physical activity or none.

One of the earliest papers considering the physical effects of ballroom dancing was Blanksby and Reidy's (1988) study of heart rate and estimated energy expenditure when ballroom

dancing. In a younger population of 10 male and 10 female participants in their 20s, ballroom dancing was deemed to have physical benefits and was defined as a 'heavy' physical exercise that should provide a physiological training effect in modern and Latin ballroom (Blanksby and Reidy, 1988). Participants were found to be in excess of 80% of VO₂ max (oxygen consumption), and ballroom dancing was therefore considered to be as demanding as other sports such as basketball, squash and cross-country running. Moderate ballroom dancing has also been found to burn 250-300 calories per hour and if more vigorous, up to 400 calories per hour (Lima and Vieira, 2007, p.132). At present, physiological measurements such as the VO₂ max as measured in Blanksby and Reidy's (1988) trial have not been replicated in more recent studies nor studies specifically of older adults. This may be due to the high energy demands involved and the potential risk with intense exercise when there is a likelihood that older adult populations may have underlying pathology and perhaps a questionable relevance when 'moderate' intensity exercise is generally recommended as sufficient for older adults (NICE, 2007).

Kattenstroth, Kalish, Kolankowska and Dinse (2011) assessed performance in older adults where 'expert ballroom dancers' were compared to a sedentary control group. To be deemed an 'expert', participants had to be performing regularly in official dance contests and championships. Forty-nine healthy volunteers, aged between 60 and 94 years of age were recruited, with 11 in the Expert Dancer (ED) group. Balance, sensorimotor and cognitive performance tests were completed by the participants and it was found that the ED group performed better on tests of perceptual, motor and some cognitive performance. The ED group also showed significantly better performance in reaction time and posture and balance tests and improvements in these elements are also likely to reduce the risk of falls.

Whilst there is some evidence that ballroom dancing can improve elements of older adults' physical capabilities, Merom et al. (2016a) attempted to improve upon the small sample sizes and relatively short duration trials in their 12-month RCT of social ballroom dancing for the prevention of falls in older adults. When compared to a wait-list control group, there appeared to be no significant differences between the two groups for the majority of outcome measures employed, including those for balance, lower limb strength and cognition and conclude that social dance (which included ballroom and folk dancing) should not be considered a useful strategy for falls prevention. There was only a small improvement in gait in the dancing group. However, the authors note that this needs further exploration given the other positive findings for physical outcomes in older adult ballroom dancers and that perhaps the low attendance at dances meant that participants did not reach a 'critical training' level. Granacher et al. (2012) also discuss the possibility that the high functional

level of some of the older adult participants who are involved in their study of salsa dancing might limit the potential for positive changes from training. Citing a high adherence rate of 92.5% for classes, there was improvement in static and dynamic postural control, stride velocity and length but that the non-significant findings for lower limb strength improvements indicate more specific strengthening exercises should be recommended. In contrast, Cepeda, Lodovico, Fowler and Rodaki (2015) found that an 8-week ballroom dancing programme for older female adults gave rise to significant improvements in the muscle architecture of the lower limbs. Dancers also demonstrated improvements in all functional tests such as the timed up-and-go test and the Tinetti test, indicating the potential of dance to improve functional capabilities.

Although the majority of studies reviewed above used small sample sizes, results demonstrated that even in very short duration studies, ballroom dancing appears to give rise to significant changes in functional activity and balance outcome measures. Different types of dance style may provide superior benefits; for example the tango dance has been shown to be associated with greater improvements in physical outcome measures compared to waltz or foxtrot dancing particularly for patients with PD. These styles of dance are often slower, perhaps less intense styles of dance compared to the tango and therefore tango appears to have the potential for greater physiological gains.

3.4 *Social Ballroom Dancing and Cognitive Health in Older Adults.*

As mentioned in section 2.1.3, there are an estimated 800,000 people living with dementia in the UK (Parkin and Baker, 2016). As some forms of dance have shown to be of benefit to those with dementia (Verghese et al., 2003) and cognitive impairment (Lazarou et al., 2017) this is an area that warrants further research. Lakes et al. (2016) found a small correlation between one's length of time dancing and the perceived cognitive benefits, and this correlated with age, with older participants perceiving greater cognitive benefits. Palo-Bengtsson, Winblad and Ekman (1998) studied residents and day care visitors of a nursing home in Stockholm, where social dances (the waltz, foxtrot and tango) had been held once a month for over ten years with a live band performing the music. Dance sessions were recorded and a content analysis performed on six participants. Social dancing was considered to support spontaneous activity, assist communication, orientation and participants were seen to be conscious of timing. Reminiscence was evident throughout the dancing, as evidenced by male dancers inviting females to dance, by following the 'rules' of the dance floor and by recognising fellow residents and staff. This is a powerful vision;

individuals 'lost' to dementia, once again able to act autonomously in free movement and thought, even if for only the short duration of the dance session. The evidence from this study suggests that the reminiscence of the ballroom dances enables participants with dementia to preserve intellectual, emotional and motor functions and that carers partnering the persons with dementia are able to assist them with reducing negative feelings due to reduced abilities; hence the authors consider it a useful therapeutic nursing intervention.

Rösler et al. (2002) also found daily 30-minute waltz dancing over a 2-week period had a beneficial effect on 5 older adults with Alzheimer's disease (AD) in comparison to 5 matched participants with major depression (MDE). Through the analysis of video clips by a professional dance teacher, AD participants were found to make 'substantial progress' in their dance scores compared to MDE participants and it was suggested that some aspects of motor learning are preserved in mild AD, whereas there is impaired procedural learning for individuals with major depression. However this was a brief report on a small scale, short term study therefore larger-scale, longer term studies are required to consider these preliminary findings further.

In addition to the physical elements discussed in section 3.3 above, the cognitive profile of older social dancers was also studied by Vergheze (2006) and compared to non-dancing controls. An activity levels questionnaire was completed documented by researchers and several validated outcome measures employed for cognitive scores but there were no significant differences found between groups in the cognitive status performance tests. Although the type of social dance that the older adults in this study participated in included ballroom, other dances were also performed; line, swing and square dancing and 7 of the 24 dancing participants did not specify the type of dance. There was no comparison between sub-groups of dancing styles and it is therefore difficult to compare these results to other studies. In addition, both dancers and non-dancers were involved in other 'cognitive' activities such as reading, writing, playing instruments and puzzle activities and there were no significant differences in the frequency of these activities. Matching of participants was by age, sex and education which have been shown to be risk factors for dementia, therefore there was likely to be a reduction in cognitive differences by nature of the matching process and dance as an intervention would have been *another* rather than the *only* cognitive activity performed by the dance group. Further to the above, Merom et al. (2016b) performed a randomised controlled trial (RCT) of the cognitive benefits of a social ballroom dancing intervention versus a home-based walking programme for older adults. The dancing group consisted of 1 hour sessions twice a week for 8 months. The dancing group only improved in the spatial memory cognitive domain compared to the walking group. No other

significant differences in function, learning, memory or social networking were evident between groups. However the authors discuss their participants might have been high functioning older adults hence there was a ceiling effect upon testing and that perhaps the intervention was not of a sufficient intensity to elicit change. Rios Romenets et al's (2015) RCT of ballroom dancing for PD also demonstrated 'modest' benefits in cognition and fatigue levels.

Lazarou et al's (2017) discovered positive changes to neuropsychological evaluation tests following a 10-month study of older adult ballroom dancers with mild cognitive impairment versus a control group. Whilst ballroom dancers showed significant changes in cognitive function, daily function, mood and behaviour not only did the control group not show improvement, they actually showed a decline in cognitive function at the end of the study period. The authors suggest that ballroom dancing should be considered as an adjunct to physical therapy and that exercise programmes for older adults should incorporate dancing as a form of exercise for older adults residing in community or hospital settings.

3.5 *Social Ballroom Dancing and Mental Health and Well-being in Older Adults*

Rudolph Laban (1986, cited by Lima and Vieira, 2007) suggested that rather than dance having purely a practical meaning, it offers a restorative role in providing health and relaxation for individuals who become immersed in their own movement and emotions; it helps the dancer to recover from the excess of 'doing' in life. As mentioned previously, dance has been used as a therapeutic tool and particularly in the field of mental health. With older adults said to be at risk of mental health conditions such as depression, anxiety, loss of self confidence and self-esteem (Allen, 2008) as they progress through the life course (albeit perhaps not as great a prevalence of depression as in younger adults; Haboush et al., 2006; WHO, 2017), dancing might well provide some 'restorative' value as dance is noted to have a positive impact on well-being for people with physical, social or psychological problems (Kiepe et al., 2012). In addition, Lakes et al. (2016) found perceived benefits in affect and self-confidence in older adults who participated in ballroom dancing, with affect being greater in women than men.

Haboush et al. (2006) studied ballroom dance lessons for 25 community-dwelling older adults diagnosed with depression. Mental health outcomes measures were assessed at baseline, at the end of the eight-week ballroom dancing intervention and three months post-intervention. Twenty (of the starting 25) participants completed the eight-week

programme of foxtrot, waltz, rumba, swing, cha-cha and tango. Possibly due to the small sample size and low statistical power, there was no statistically significant treatment effect for the dance lessons found. A post-intervention qualitative element was also included. However, 14 of the 18 participants noted the lessons to be immensely enjoyable, and that they found pleasure in learning that they were able to dance. Two participants added the classes were the only thing they looked forward to in the week and without them, they would not have left the house. There was also suggestion that the lessons were given in a group setting, rather than individual dance classes, to increase social interaction and learning. Whilst the mental health outcome measure results were found not to be statistically significant, the authors note there to be a 'moderate effect' in outcome measures and suggest this to be "impressive for an intervention not specifically designed for depression" (Haboush et al., 2006, p.95) and that the effect size for psychotherapy for older adults with depression is not much greater than the effect size found in their study. It was also suggested that the process of learning to dance, the social interaction and the physical contact with humans during dance lessons might combine to dispel some negative self-attitudes in individuals, although one aspect of the dance classes that some participants mentioned was feeling frustrated with trying to learn new steps, in spite of programmes being individually tailored to suit individual capabilities by the instructor in this study. Of note, participants with higher self-efficacy scores were deemed more likely to benefit from dance lessons, compared to those with higher hopelessness scores; who, it was suggested, would benefit more from depression-specific treatment. Participants found ballroom dancing to be an acceptable intervention for depression compared with seeking help from a mental health professional and much positive feedback was gained. This might be because it carried less of a 'stigma' as a form of management for mental health illness and one that individuals were more likely to engage in.

Lima and Vieira (2007) studied the meanings of ballroom dancing and its health benefits in 60 people aged sixty years and over within a 'third-age centre' in a municipal nursing home in Brazil. Fifty-four women and six men were recruited to the one-hour, twice-weekly dance classes over the course of a year. Upon completion of the study, questionnaires were completed and confirmed the psychosocial benefits of ballroom dancing alongside benefits to physical skills, such as flexibility, balance and co-ordination. Ballroom dancing was said to be 'entertaining' and 'relaxing' (2007, p.137) and participants felt happiness and an ability to forget their problems and unpleasant experiences during classes. Observation of the participants by the researchers revealed high self-esteem and physical values such as flexibility and respiratory resistance, thus, confirming the overall health benefits of ballroom dancing for older people. Lima and Vieira quote participants who said, "life becomes lighter

and we do not remember unpleasant experiences” and “everything turns into beautiful moments” (2007, p.138) and suggest the older adult dancers were able to empower their own bodies and change the conventional role of older adults, “the body may change from a source of oppression to a course of freedom” (2007, p.140). Koch et al. (2016) also consider the theme of the dancing body in their feasibility study of a tango intervention for adults with PD. While based upon only a single 90-minute intervention with 34 participants, findings suggested significant improvements in well-being, body self-efficacy and cognitive outcome expectancy. Additional measures demonstrated increases in happiness and elements such as those related to aesthetic experiences, emotional expression, unison with partner and joy and pleasure.

Allen (2008, p.20) highlights that of all the factors associated with poor emotional well-being in older adults, the most significant are a lack of active social or community life. Rodio and Holmes (2017) explored ballroom dancing for older adults who resided in an assisted living facility and discovered it provided a sense of community and allowed individuals to reconnect, reminisce and actively engage in life. Similarly, Stevens-Ratchford discusses ballroom dancing as a ‘serious leisure’ (2016, p.291) for older adults, models of occupational engagement and the ability of individuals to *become* a dancer, this relating dancing to gains in knowledge, social dimensions and well-being in older adults. Stevens-Ratchford’s (2016) study found older adults considered ballroom dancing to provide cognitive challenge and stimulation of their minds, motivation to develop their dancing skills despite its challenges and that dancing had become an important and pleasurable part of their lives. The results from these studies provide positive findings that suggest ballroom dancing could enhance successful ageing and emotional well-being in older adults since participation in ballroom dancing has been found to provide a sense of community and social inclusion (Cooper and Thomas, 2002; Lima and Vieira, 2007; Stevens-Ratchford, 2016; Thomas and Cooper, 2002).

One problem that can also lead to social isolation is the onset of deterioration in vision for older individuals. Pinniger et al. (2012) conducted a study of 17 female participants aged 65 years or older with age-related macular degeneration who self-reported feelings of sadness or depression. Participants were randomised into a tango dance group (n=8), 90 minute sessions, twice a week for 4 weeks, or a wait-list control group (n=9) who were offered free tango lessons after completion of the trial. There was 100% retention to the programme and all participants said that they wished to continue with the classes after the end of the trial. There were also reductions in feelings of depression and increases in self-esteem for those participants in the tango group and self-reported improvements in social integration

and balance, although balance was not objectively tested. These results would concur with those of Hackney and Earhart (2009a) who suggested dance programmes have a better level of retention and motivation to attend due to dancing being an enjoyable activity, with one of the participants noting they felt able to partake in life again. The self-reported improvements in balance in this short-duration trial warrant further objective investigation, since a reduction in vision for older adults can have not only social and mental health implications but also decrease functional independence and increase the risk of trips and falls due to diminished balance abilities.

3.6 Social Ballroom Dancing and Social Health in Older Adults

Linked closely with well-being, social health factors are often neglected in older adult groups. Many older adults in the UK live with loneliness and social isolation (Allen, 2008) and limit their activities external to the home due to a fear of falling (McKinley et al. 2008), and yet this could be preventable if a greater sense of community and social inclusion were fostered for this age-group. Indeed, Shenk and Sokolovsky (2013, p.229) consider the cultural perceptions of ageing and global differences in attitudes towards ageing and elders, from images of dependent, frail adults to a period of 'second life' or 'third age' and suggest that 'the global community has come to embrace this new vision of ageing'.

Improvements in social health from ballroom dancing were key in Lima and Vieira's (2007) findings. The authors argue that the social isolation and exclusion of senior citizens from society expedites the physical, intellectual and emotional aspects of the ageing process and hence, marginalisation from society and yet dance can slow down the ageing process and act as a therapeutic intervention. It was found that ballroom dancing provided a 'culture of inclusion' (Lima and Vieira, 2007, p.130) and other major therapeutic meanings to those involved, these being: ballroom dancing is fun, provides health benefits, leadership skills, allows recall of good memories and opportunities for socialising and a sense of community. Lakes et al. (2016) support this notion further, having found that ballroom dancing was associated with greater perceived social benefits for older adults, and that this perception increased over time.

Thomas and Cooper (2002) studied a group of social dancers over a 1-year period in a qualitative, ethnographic research study which aimed to assess the meanings of social dance for older adults. This first paper (Thomas and Cooper, 2002) written about their study was at the 7-month point and followed by Cooper and Thomas (2002) at the conclusion of the study. The study involved older adults aged 60-90 years who participated in dance

events in two areas: an inner-city borough and a suburban area. Whilst not specific to ballroom dancing, participants danced several types of social dances including modern sequence, ballroom and line dancing. The key themes emerging at the 7-month point in the study included those of dancing and ageing; keeping the body and brain active, dancing and community spirit; the 'sociality' of dance and the participants' enjoyment of the relation between music and dance. The authors concluded that with these participants in their dancing groups, a 'community' was constructed through the dancing as there was a strong sense of community spirit evident. Whilst the themes were overall positive, concerns were raised by participants that social dancing was a dying art and that it would not be a form of activity when current younger generations are older.

In their second paper Cooper and Thomas noted dancing to provide older adults with a second 'teenagerhood' (2002, p.690) when the burdens of family and work life have gone and there is time for 'fun' once again. Dancing raised a sense of community between individuals, regardless of social status, a sense of self-worth and achievement, at a time when one's ability for other skills were perhaps declining. Thirty-one interviews, participant observation and filming were employed to explore participants' experiences. Social dancing, defined as either 'ballroom' or 'modern sequence' (a structured form of ballroom or Latin dance popular with groups of couples) was found to present a sense of "continuity of identity, skills and cultural codes" (Cooper and Thomas, p.693) for this generation of older people, who have experienced more social and technological change since their own childhoods than any other. Cultural connections to ballroom dances were also highlighted as important in Lima and Vieira's (2007, p.138) study of older adult dancers in Brazil, which is known as a dancing country. One participant stated, "I feel Brazilian again"; so dance can re-connect participants to their culture and identity. Dancing can bring a sense of stability following the loss of a loved one, indeed; women who lose partners will often attend dances with another female friend. Dancing has been found to lift spirits, promotes nostalgia, provide social interaction a sense of community and an opportunity for older people to 'look good' on the dance floor.

3.7 Summary of the Studies

The studies considered used ballroom dancing as an intervention for health improvements for periods of time ranging from 2 weeks (Hackney and Earhart, 2009a) to 'ongoing' involvement in dancing competitions (Kattenstroth et al., 2011). Even in the shorter duration 'feasibility' study undertaken by Hackney and Earhart (2009a) significant findings were found for positive changes in balance, concentration and reaction times. Longer

duration studies might provide more definite findings and could also track maintenance of or decline in changes with more accuracy than very short study durations. The majority of studies reviewed included intervention programmes of around 2 to 3 months' duration. During such an intervention period, positive results were found for significant improvements in function and gait measurements, motor, cognitive and perceptual performance, cardiac efficiency, balance and physical performance, functional autonomy, a reduction in depression and improvements in self-esteem and observations of increased physical participation (Belardinelli et al., 2014; Gomes da Silva Borges et al., 2014; Haboush et al., 2006; Hackney et al., 2007; Hackney and Earhart, 2009b; McKinley et al., 2008), although these were not always significant due to the small sample sizes and short duration of the studies. Two studies involved participants who had already been dancing for longer periods of time; Kattenstroth et al's (2011) study of 'expert' older ballroom dancers, where experts exhibited superior scores for cognitive, functional, perceptual and motor performance and Verghese's (2006) study of 'long term' social dancers, which found improvements in physical performance and balance measures compared to a matched control group. Gomes da Silva Borges et al's (2012) study monitoring an 8-month ballroom dance intervention also found significant improvements in functional autonomy and physical balance. It would be of interest to consider the maintenance of these positive physiological and emotional changes following short-duration programmes of ballroom dancing by tracking the maintenance or decline in mental health improvements at longer-term follow-up points, particularly in light of Krampe et al's (2010) findings that improvements in physical function were not maintained at 6-weeks post dance intervention programme. In terms of mental health, Haboush et al's (2006) study of an 8-week ballroom dancing intervention for geriatric depression did not find any statistically significant treatment effect of the dance lessons, although there was a moderate reduction in depression scores and some positive subjective experiences such as enjoyment, social interaction and a pleasure for learning being reported in questionnaire responses. In the shorter duration study by Pinniger et al. (2012) of 4-weeks of tango classes for a group of participants with macular degeneration who were experiencing feelings of sadness and depression, there were significant reductions in depression and improvements in quality of life and self-esteem measures post-intervention, compared to a control group. However, the baseline level of depression for the individuals in Pinniger et al's (2012) study is unclear compared to Haboush et al. (2006) who note an inclusion criteria of a Hamilton Rating Scale for Depression of 10 (indicating mild depression) or higher (HRSD; Hamilton, 1967 cited by Haboush et al., 2006).

The recommendations for general physical activity for older adults discussed in section 1.7 suggest that programmes should be tailored for older adults' abilities taking into

consideration any existing pathology. Therefore it might be argued it is important that dance teachers have sufficient understanding of the underlying principles of exercise and the importance of tailoring programmes for individual older adults accordingly. Kiepe et al. (2012) raise the point in their systematic review of dance therapy and ballroom dances that papers generally failed to report on the qualifications or education levels of the dance teachers, and the same findings are evident in the ballroom dancing papers reviewed in this chapter. This might have implications for the suitability of programmes for older adults with pre-existing pathologies if dances are not adapted to a suitable level or intensity to accommodate one's abilities as there may be risks associated with inappropriate exercise, but also on one's motivation and adherence to dance if it is considered beyond one's capabilities. McKinley et al. (2008) suggest it is vital that dance teachers need to be supportive and patient to avoid discouraging older adult participants who are having trouble learning steps and routines.

The lack of detail in some studies of baseline measurements and the plethora of heterogeneous outcome measures used within each of these studies makes comparison and interpretation of findings across the studies problematic. Additionally, the studies collectively used a variety of quantitative measurements and qualitative research methodologies, again making comparisons of studies' findings difficult as there might be uncertainties about the reliability of apparently significant findings due to multiple outcomes tested with no *a priori* statements about primary outcomes. Outcome measures or other data collection techniques were clearly stated in methodologies, although some of the non-significant findings might be explained by a lack of sensitivity or specificity of the tests for the particular client population studied (see AGILE, *n.d.*, for examples of best practice in physiotherapy). In addition, cross-study comparisons were difficult because different outcome measures were used for assessing each outcome, for example, 'balance' within each study was measured by numerous combinations of static and dynamic balance outcome measures. Some studies, whilst not reporting *statistical* significance suggest that there were *clinically* significant changes evident in some outcome measures and that this is of value in practice. For example, in McKinley et al's (2008) study of tango dancing for functional balance and confidence in older adults, a 'clinically significant' change was suggested in the sit-to-stand test (Guralnik et al., 2000 cited by McKinley et al., 2008) and fear of falling whereby participants moved into 'lower risk' falls group categories. This is clearly of benefit to individuals.

In addition to the different outcome measures used, different types of ballroom dancing were included within the studies. Some studies provided minimum detail of the types of

ballroom dancing performed in comparison to the 10 dances learnt in Lima and Vieira's year-long study (2007) and the study by Hackney and Earhart (2009b), where the tango dance was compared to a group performing waltz and foxtrot dances and a control group of older adults with Parkinson's disease. Whilst the dancing groups both significantly improved upon balance and mobility measures, the tango group showed some additional improvement in the Freezing of Gait (FOG) questionnaire and the Timed-Up-and-Go Test which may have been clinically meaningful even if not statistically significant. Although this was a relatively short trial of 3 months duration, there were signs that some styles of ballroom dances might provide more benefits than others. It was also not possible from the methodologies to gauge the intensity of the dancing, which would also impact upon physiological outcomes; other than in Belardinelli et al's (2008) study of patients with cardiac pathology, where participants had completed exercise stress testing prior to inclusion and they were monitored for heart rate during dancing. In this study participants were suggested to be working at an exercise intensity of the heart rate corresponding to 70% of peak VO_2 , as it was presumed that the dance would be of a similar intensity to 'traditional training'. This would indicate a moderately-hard exercise intensity and therefore might not have been achieved to this level by participants in other studies, particularly those studies of populations with a diagnosed pathology whose physical capabilities would not have allowed such intensities of exercise. Ballroom dancing at a moderate to vigorous intensity would however comply with exercise guidelines such as those provided by the ACSM (2011) for moderate to vigorous exercise to be performed by adults 2-5 days per week (depending on the intensity of each session) and the DH (2011) who suggest similar moderate to vigorous intensity exercise sessions at intervals throughout the week, dependent upon previous activity levels.

3.8 Chapter Summary: Conclusions

The main findings in the literature review as presented above are that social ballroom dancing is an activity that can provide older adults with improvements in functional independence, balance, cognitive performance and sociality even over relatively short durations of time. Kattenstroth et al. (2011, p.7) suggest that dance can enrich the environment for individuals given its, "unique combination of physical activity, rhythmic motor coordination, emotion, affection, balance, memory, social interaction and acoustic stimulation". However, there is little evidence to suggest these effects sustain a 'carry-over' effect post-intervention and this is an area that requires further research.

A positive aspect of these studies was that there was a fairly low attrition rate; participants tended to remain involved in the dancing intervention and the small numbers of withdrawals tended to be due to illness, injury or changes in personal circumstances rather than disinterest in the intervention. Hwang and Braun's (2015) systematic review of dancing for older adults found completion rates of 81%- 100% in the studies reporting attrition. Adherence to dance programmes was often better than in alternative exercise groups, indicating that dancing is a physical activity that older adults are motivated to participate in (see Belardinelli et al., 2014; Hackney and Earhart, 2009a; Pinniger et al., 2012). As dance is a partner activity, the act of being in a 'couple', in addition to being in the group as a whole, might help to enhance the social aspect of dance and therefore assist with improving one's emotional and social health status and reduce social isolation. There is also some indication that ballroom dancing may assist with preventing fear of falls, and thus falls themselves, in older-adult age groups (McKinley et al., 2008).

Whilst there is some evidence to support the use of ballroom dancing to reduce the risk of dementia or manage diagnosed mental health conditions (Haboush et al. (2006) for moderately lowering depression and Palo-Bengtsson et al. (1998) and Verghese et al. (2003) for dementia) given its popularity, there remains a paucity of literature supporting the use of ballroom dancing as an engaging activity beneficial to physical and social health and mental well-being in community-dwelling, non-symptomatic older adults. The ability of ballroom dancing to act as a 'distraction' to life's worries is supported by the findings of Goldstein-Gidoni and Daliot-Bul (2002) and Lima and Vieira (2007). Bosse suggests this lack of research may be due to dance not being a, "clearly defined academic discipline" as some genres of dance have tended to, "fall between the cracks of scholarly purview" and it has been "largely disregarded among scholars" (2007, p.28).

Social ballroom dancing classes organised in local community settings during the day time are often aimed at older adults, which are commenced at the point of retirement or beyond. As the risk of falls begins to rise in the older adult age group and older adults often develop multi-pathologies during their ageing process, such exercise groups require leaders with the appropriate skills and knowledge to be able to provide individualised dance programmes, as also recommended in the research reviewed in chapter 1 on general exercise. NICE's evaluation of four commonly used methods to increase physical activity (2006) concluded that 'brief interventions in primary care', this being opportunistic health promotion advice provided by healthcare professionals, such as general practitioners and physiotherapists did have a positive effect on increasing levels of physical activity for middle aged and older adults in the short and long term, however, to maintain this increase at one year, follow-up

consultations were suggested. Therefore, health professionals prescribing or advising physical activity require the skills to tailor programmes and adapt dances to suit an individual's needs and functional capabilities and ideally progress should be monitored at regular intervals to optimise adherence to and participation in physical activity. To provide further evidence of SBD's value for older adults, longer-term cohort studies assessing its health benefits with regular follow-up periods are necessary.

3.9 Research Aim

This study was a 12-month investigation into social ballroom dancing and health for older adults, unique in terms of its approach combining the quantitative outcome measure analysis of individuals and qualitative data from semi-structured interviews. This differs from the above studies by the use of qualitative means to consider aspects of social health and dance experiences and by measuring well-being and physical health in non-symptomatic community-dwelling older adults who participate in ballroom dancing.

Ballroom dancing is a physical activity that has been advocated as providing beneficial physical, mental and social health outcomes amongst older adults with long-term conditions (Bellardinelli et al., 2008; Blandy et al., 2015; Duncan and Earhart, 2014; Haboush et al., 2006; Hackney and Earhart, 2009; Hackney et al., 2007; Palo-Bengtsson et al., 1998; Pinniger et al., 2012) or for those in residential care (Gomes da Silva Borges et al., 2012; Gomes da Silva Borges et al., 2014). There have been fewer studies exploring community-dwelling older adults who have not been diagnosed with a specific pathology who participate in ballroom dancing. Those that do consider specific 'health' aspects such as balance and cognitive performance (Kattenstroth et al., 2011; McKinley et al., 2008; Rahal et al., 2015) or the experience of social dancing (Cooper and Thomas, 2002; Lima and Vieira, 2007; Thomas and Cooper's, 2002).

At present, there have been few long-term studies found that specifically consider social ballroom dancing as an activity to maintain or improve balance and functional activity levels in community-dwelling older adults with the consideration of its impact on falls risk. Following on from the above literature review, which provides some evidence that ballroom dancing could be promoted as an activity to maintain well-being and challenge the psychological and physical decline in older adults, the aim of this study was to explore the influence of ballroom dancing on the health and well-being of older, community-dwelling adults over a 12-month period.

3.9.1 **Research Questions:**

1. Does social ballroom dancing influence resilience in older adults?
2. Does social ballroom dancing influence balance and functional activity outcome measures for older adults?
3. Does social ballroom dancing influence psychological well-being for older adults?

This chapter has presented a summary of the literature on dance for older adults, followed by a focus on ballroom dancing. The research aims and objectives are outlined. Chapters 4 and 5 now follow to present the methodological considerations and the research design.

Chapter 4 **Methodological Considerations**

This chapter describes and explains the methodological considerations for the present study including considerations of Evidence Based Practice, the study's ontology, epistemology, research paradigm and rationale for the design of the study. The use of mixed methods for healthcare research will be discussed alongside a rationale for its implementation in this study. The longitudinal concurrent mixed methods approach with a dominant qualitative over quantitative design as used in this study is presented. The specific design of the study and research protocol is presented in detail in chapter 5. This chapter accounts for the choice of data collection and analysis methods used and considers the theoretical underpinnings of the methods with consideration of the particular dilemmas in qualitative research and how they were considered for the interview data collection and analysis in my study. A background to the subtle realist approach of Framework Analysis employed for the qualitative element of data collection and analysis is presented. In this chapter, the philosophical stance underlying my research is discussed.

4.1 *Methodological Considerations: Mixed Methods Research in Healthcare and Rationale for the Study Design*

In planning this research study and considering the epistemological stance, the debate surrounding the hierarchy of Evidence Based Medicine (EBM) was considered. Sackett et al. (1996 cited by Goldenberg, 2006, p.2622) define EBM as, "the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients" and the use of 'best practice' is a core consideration of service user management in physiotherapy. The hierarchy of EBM traditionally values the positivist, scientifically rigorous approaches to research, randomised controlled trials, systematic reviews and meta-analyses and has held less regard for mixed methods approaches or qualitative research (Goldenberg, 2006). However EBM methods such as these do not necessarily encompass the ethos of physiotherapy and its more biopsychosocial approach, with EBM research methods favouring more of a biomedical approach. In addition, Lambert, Gordon and Bogdan-Lovis (2006) suggest the accepted forms of evidence in EBM have been drawn too narrowly; positivist approaches do not consider the experience of ill-health that can be explored using qualitative methods. Following the EBM movement there was a move by other healthcare professions towards evidence based health-care practice, including in the field of public health to aid decision-making (Jarlais, Lyles, Crepaz and the TREND group, 2004).

Whilst qualitative methods alone have been historically criticised for lacking rigour and validity and have previously been considered lower down the hierarchy of evidence, over recent decades qualitative inquiry has been recognised as a valuable research method in the social sciences, applied research, health services research and public health (Smith, Sparkes, Phoenix and Kirkby, 2012; Srivastava & Thomson, 2009). Mixed methods approaches have also become increasingly commonplace in multidisciplinary healthcare research, where large, multi-skilled teams of researchers are employed in clinical trials and applied research projects. The use of both qualitative and quantitative research methods in this applied research study aims to provide a more valid, complementary and complete analysis of research data (Creswell, Fetters and Ivankova, 2004; Gale, Heath, Cameron, Rashid and Redwood, 2013; Srivastava and Thomson, 2009). However, Smith et al. (2012) suggest that a mixed methods approach is not necessarily straightforward and encourage physiotherapists to engage in 'critical dialogue' on mixed methods research. Shaw, Connelly and Zecevic consider a pragmatic, mixed methods approach to align with the theoretical practice of physiotherapy in terms of informing decision making and clinical reasoning and that mixed methods work to "integrate the multiple concerns and practice paradigms" (2010, p.511) to optimise the clinical practice of physiotherapists rather than using quantitative or qualitative research methods individually. Parry (1997, cited by Shaw et al., 2010, p.514) furthers this thought by suggesting that physiotherapy is a "multiparadigm science".

Quantitative methods do not generally answer adequately how or why a phenomenon occurs but quantitative findings can be used in conjunction with qualitative methods to support subjective experiences, thus leading to enhancement of exploratory research studies. Doyle, Brady and Byrne (2006, p.178) discuss the paradigm of 'pragmatism' and advocate an 'eclectic' approach to the research process, whereby the merits of combining both qualitative and quantitative research paradigms in mixed method studies are utilised to optimise the ability to answer one's research questions. Greene (2008) suggests that pragmatism, "proposes a realist perspective of the physical world in conjunction with a constructionist perspective of the social world, which lends itself to the integration of both quantitative and qualitative lines of inquiry" (cited by Shaw et al., 2010, p.516). Doyle et al. (2009, p.175) highlight that mixed methods are useful in healthcare research as they not only report on outcomes, but also the context of outcomes measured and because healthcare research presents, "complex and multi-faceted research problems". The use of mixed methods research is also supported by NICE (2007) for studying mechanisms of behaviour change and Allender et al. (2006) who suggest its use to explore motives and

barriers to physical activity therefore it is useful for studying participants' physical activity behaviours.

A mixed methods approach is particularly suited to this applied research study exploring health, which is, in itself, a multi-faceted phenomenon. Within mixed methods there are several ways in which the components of qualitative and quantitative elements are devised. Padgett (2012, p.49) cites Creswell's (2003) work, which provides an explanation of the typologies of mixed methods designs, as outlined in Table 1 below.

Table 1 Mixed Methods Designs Arranged by Timing and Dominance

	Sequential	Concurrent
Dominant- Less Dominant	CELL 1 QUAL → quan qual → QUAN QUAN → qual quan → QUAL	CELL 2- "Nested" QUAL + quan QUAN + qual
Equal Weighting	CELL 4 QUAL → QUAN QUAN → QUAL	CELL 3- "Fully Integrated" QUAL + QUAN

(QUAL/qual = qualitative, QUAN/quan = quantitative) (Padgett, 2012, p.49)

The design of this study will use a longitudinal 'concurrent QUAL + quan' design, as shown in CELL 2, indicating concurrent data collection, with the qualitative inquiry (interviews) dominant over the less dominant quantitative element (the standardised clinical outcome measurements). This typology of mixed methods might also be referred to as 'partially mixed concurrent dominant status design' whereby the qualitative and quantitative elements of research are conducted independently with a better description of the process being described as 'mixing' occurring at the point of data analysis only (Leech and Onweugbuzie, 2007, cited by Doyle et al., 2009, p.182-183). Concurrent data collection is also advocated as more practical than a sequential approach to data collection if there are limits upon time (Creswell, Fetters and Ivanokova, 2004).

Caracelli and Greene (1997 cited by Padgett, 2012, p.48) consider there to be three main purposes for conducting mixed methods research: triangulation, complementarity and

expansion. This has been expanded upon by other authors to include such rationales as “off-setting weaknesses and providing stronger evidence”, “answering different research questions” and “illustration of data” (Doyle et al., 2009, p.178-179). There is some debate about the usefulness of the term *triangulation*, the corroboration between the qualitative and quantitative findings in mixed methods research, and some authors are seemingly keen to avoid the use of the term (Doyle et al., 2009; Padgett, 2012). Indeed, Sandelowski (2003, cited by Doyle et al, 2009, p.182) argues that triangulation, “has been used so much that it has no meaning at all”.

This study was conducted with the mixed methods intention of *complementarity*; the “enhancement or clarification” (Padgett, 2012, p.48) of one’s research by using elements of qualitative and quantitative inquiry to consider the health and well-being of older adults who participate in ballroom dancing. The qualitative element of inquiry was supported by the quantitative descriptive and inferential statistics. In this study I not only wanted to explore the participants’ experiences of ballroom dancing and health using quantitative means, but also use quantitative outcome measures to assess for changes in physical function and mental well-being status over the 12-month duration of the study, although the quantitative measures became a smaller element of the study over time. The following section considers the ontological and epistemological issues of the chosen methodology.

4.2 *Ontological and Epistemological Perspectives*

Denzin and Lincoln (2003, p.30 cited by Anfara and Mertz, 2006, p.xxi) consider that a research paradigm is how a researcher “approaches the world with a set of ideas, a framework (theory, ontology), that specifies a set of questions (epistemology) that he or she then examines in specific ways (methodology, analysis)”. Langdridge further suggests these are “beliefs that provide the principles for understanding the world” (2007, p.3). All research thus involves epistemological and ontological assumptions, whether or not these are explicitly considered. Qualitative research encompasses a range of positions, for example, critical realist, interpretivist, positivist, constructionist (Greenwood and Levin, 2005; Smith et al., 2012), which have important implications for both how research should be carried out and how data should be analysed. For quantitative researchers, concern with ontological and epistemological perspectives might not be typical since in their non-interactive, unreflective view, truth or ‘true objectivity’ is waiting to be measured (Smith et al., 2012). It is therefore important when using qualitative research to carefully consider and reflect on the philosophical stance of one’s work.

Smith, Bekker and Cheater (2011, p.40) argue there is a 'pre-occupation' with the epistemological and ontological basis of qualitative research or poor application of it, as researchers try to optimise the validity of their studies, which can distract researchers from their research priorities. Bryman (2007 cited by Smith et al., 2012) supports this stance by suggesting that epistemological and ontological considerations have been 'marginalised' with the emergence of pragmatism and mixed methods research. Thorne et al (1997, cited by Smith et al. (2011, p.43) consider this attempt to 'legitimise' research practice as 'epistemological credibility'.

Butler-Kisber (2010, p.7) suggests that in the philosophy of pragmatism, the ontological and epistemological view-points are, "...conflated. There is no gap between knowledge and everyday action". Pragmatism is said to link theory and praxis (Greenwood and Levin, 2005, p.53). Creswell (2007, p.22-23) also notes that pragmatism aligns with a mixed methods approach to research, in that there is less of a focus on 'methods' and more of a focus on the problems being studied and using the most suitable methods to address the research problem, which will often involve both qualitative and quantitative data collection methods.

The research paradigm for this research study aligned with that of pragmatism as the research questions were best suited to qualitative and quantitative methods of inquiry. Dewey, an early advocate of pragmatism notes, "neither inquiry nor the most abstractly formal set of symbols can escape from the cultural matrix in which they live, move and have their being" (1938, p.20 cited by Corbin and Strauss, 2008, p.3). Thus a pragmatic approach recognises the influence of social, cultural, political and historical contexts upon the research and the researcher utilises approaches that seem to meet the needs of the research. Hence, utilising mixed methods approaches to answer the research questions (Creswell, 2007), as was performed in this study, to explore both dancing and health experiences with qualitative methods and physical function tests and well-being using quantitative means.

The ontological position taken in this study is best characterised as that of 'subtle realism'. A subtle realist approach is a position that acknowledges a researcher's perspective is inevitably influenced by their inability to truly stand outside the social world, but nonetheless retains a belief in phenomena that are independent of the researcher and knowable through the research process – "[T]he social world exists independently of individual subjective understanding, but is only accessible in qualitative research via participants' interpretations which are further interpreted by the researcher" (Hammersley and Atkinson, 1995, cited by Ward, Furber, Tierney and Swallow, 2013, p.3). Such an

approach can thus make claims to the validity of a representation arising from research by use of participants' quotes and themes, whilst recognising that multiple realities on the phenomena are possible and 'out there' awaiting discovery (Creswell, 2007; Smith et al., 2012).

In a practical sense in this research, subtle realism aligns with a pragmatic approach in that realist methodologies often utilise mixed methods approaches for the *discovery* of new knowledge, rather than for the testing of an *a priori* hypothesis (Cohen and Crabtree, 2006). I considered the social, cultural and historical contexts of dance in particular and explored these through the participants' experiences of dancing across their life course during the interviews and when analysing the qualitative findings. Whilst, as a recreational dancer, I had my own understanding and experience of the subject area, I acknowledged my perspective would inevitably be influenced by my experiences and therefore I aligned with a realist stance that I would be unable to 'stand outside' of this social world. However, I recognised that multiple realities of the phenomena would be presented by the research participants leading to the discovery of further knowledge. My participants' interpretations would be further interpreted by me as the researcher. To discourage misinterpretation of my participants I performed member checking of the transcripts' key themes with my participants as advocated, and almost now *expected*, in qualitative research (Charmaz, 2014). The research design is further outlined in Chapter 5).

Lincoln (2010, p.7 cited by Smith et al., 2012) argues that pragmatists not considering epistemological and ontological issues are, "naïve and fraudulent" and that it is important for researchers to consider their standpoint, their relationship to others and what constitutes knowledge. Therefore, it is still considered important to recognise one's theoretical stance when performing qualitative methods of inquiry and one's ontological and epistemological position. Shaw et al. (2010, p.513) advocate that practising physiotherapists conducting 'practice-orientated mixed methods' research consider the philosophical underpinnings of their research and their research paradigm. Knowledge, experience and the researcher living the story will be discussed further in section 4.5.

4.3 Qualitative Approaches

When planning the qualitative research design, different methods of inquiry were considered. The decision-making process for the implementation of the quantitative measures for this study is presented in Chapter 5. The qualitative methods of inquiry included 'phenomenology' (Langdrige, 2007), 'grounded theory' (GT) (Glaser and Strauss,

1967; Corbin and Strauss, 2008), 'narrative analysis' (NA) (Riessman, 2008), 'ethnography' (Creswell, 2007) and 'thematic analysis' (TA) (Butler-Kisber, 2010), from which Framework Analysis derives (Ritchie and Spencer, 1994).

Ethnographic approaches to the study of ballroom dancing have been utilised by authors such as Cooper and Thomas (2002) to consider the meaning of dance for older adults. Creswell (2007, p.68) suggests an ethnographic approach tends to also be conducted amongst larger "culture-sharing groups" whereby researchers immerse themselves in a given community, observing and interviewing participants over extended periods of time. The difficulty with this method was the practicalities of the time necessary to be present in the field and hence an ethnographic methodology was not employed in this instance. However some of its principles were considered such as Thomas and Cooper (2002, p.60) suggesting, from their own involvement as participant-researchers, the researchers become part of the study and no longer remain 'objective observers', more so individuals who are influenced by inherent social and cultural factors. As someone who has participated in ballroom dancing and was dancing at the conception of this study, I acknowledged my previous experiences and the potential impact these might have on my interpretation of the findings. Thomas and Cooper (2002) also acknowledge involvement as a dancing participant during the research process might allow for them to become 'insiders' rather than 'outsiders' amongst their research participants.

I considered my prior knowledge of and involvement in ballroom dancing and hence possible 'insider' status and this discounted the use of a Grounded Theory approach (Glaser and Strauss, 1967). In Grounded Theory's original form, theory was generated by being 'grounded' from the data (Creswell, 2007) rather than on *a priori* assumptions and I recognised my background as a recreational dancer and the possible influence on and the relationship to the research topic. In addition, participants were not recruited to a method of theoretical sampling or up until theoretical saturation occurs, whereby the thematic categories emerging become saturated and no new information emerges from the data.

Langdridge (2007, p.41) discusses how much, if not all, of our experience can be best understood through the stories one tells of that experience, that is, life as experienced, is narratively structured, produced and reproduced. Hermeneutical phenomenology is concerned with the researcher's interpretation of a research participant's story. Transcendental or psychological phenomenology focuses more on the description of participants' experiences and Husserl's *epoche* or 'bracketing' off the researcher's prior experiences (Creswell, 2007). I also recognised that my immersion in the physical activity

of dance, particularly as I was still dancing at the start of this study, might make 'bracketing' in this manner difficult to implement.

An alternative qualitative methodology, narrative analysis, has been a rapidly developing method of research in healthcare and I also considered using a narrative approach to analyse the data, having completed a post-graduate certificate in narrative inquiry during the early stages of the PhD process. Approaches to the analysis of epistolary or oral narratives can vary depending upon the disciplinary field of study. Structuralist approaches to narrative analysis, such as those presented by Ricoeur and Langdrige (Langdrige, 2007), consider the timing and sequence of stories to be of great importance. Ricoeur calls this 'emplotment', which is the logical organisation of episodes into a coherent whole, with a beginning, middle and end, thereby shaping meaning (1981 cited by Langdrige, 2007). There was consideration of using a narrative approach to complement the quantitative findings, which might have been considered as a physiological 'body narrative', however such a combination would present complexities at the 'mixing stage' and Padgett (2012, p.53) suggests this combination of narrative as a qualitative and quantitative methods simply would 'not work'.

In the qualitative strand of this study, I decided to gather participants' experiences, motivations, meanings and realities of ballroom dancing via semi-structured interviews and analysed using the Framework Analysis (FA) approach. A FA approach was decided upon for the qualitative inquiry strand of this research study as it is suitable for use when analysing semi-structured interview data that has been collected to answer specific research questions, *a priori* issues that need addressing and when the research has more limited timescales (Gale et al., 2013; Ritchie and Spencer, 1994; Srivastava and Thomson, 2009).

4.4 Framework Analysis (FA)

Following consideration of different methods of qualitative inquiry, I decided upon a Framework Analysis approach as the method to collect and analyse the qualitative data in this study (Ritchie and Spencer, 1994; Smith and Firth, 2011). This was because FA does not sit with any one particular epistemology (Ward et al., 2013, p.3); rather it uses a 'pragmatic' approach and a thematic method of analysis and would therefore not conflict with the quantitative element of this study in such a way that Padgett (2012) notes other methodologies, such as narrative analysis, would. The FA approach and process used in this study is detailed further in the following chapter on the research design, under sections 5.9 and 5.9.1.

FA was developed within the independent National Centre for Social Research, Social and Community Planning Research unit in London, United Kingdom in the 1980s in response to a perceived need for rigorous, reliable and systematic methods to analyse applied qualitative data (Ritchie and Spencer, 1994; Smith and Firth, 2011). Whilst FA was initially developed for use in applied policy research, it is a popular method in healthcare research (Gale et al., 2013; Smith and Firth, 2011; Ward et al., 2013) and suitable for studies such as this where there are specific research objectives or *a priori* problems to be addressed or, as noted by Ritchie and Spencer (1994, p.175), greater “illumination or understanding of issues” is required. It is suitable for use when analysing semi-structured individual or group interview data that has been collected to answer specific research questions when the research has more limited timescales (Gale et al., 2013; Ritchie and Spencer, 1994; Srivastava and Thomson, 2009).

‘Thematic Analysis’ (TA) is often considered to be an ‘umbrella’ term for qualitative inquiry methods that require the generic skill of thematic coding as there has been a paucity of literature outlining what it is and how it is utilised in practice, however Braun and Clarke (2006) argue that it should be seen as a qualitative method in its own right. TA is also said to be similar to FA, although it is argued that the FA method provides a greater depth of understanding than a TA approach might allow as there is a more structured and transparent approach to data analysis and the staged development of codes and themes (Smith and Firth, 2009). FA is considered useful for examining cross-sectional descriptive data and its structured approach allows for transparency in researcher’s interpretations of participants’ experiences. The interconnected staged process can also be a helpful mechanism of inquiry for novice researchers (Smith and Firth, 2009) and it provides a transparent audit trail of the data analysis process.

Ritchie and Spencer (1994, p.176) highlight that one of the functions of a FA approach is that it can assist with, “finding associations: between experiences and attitudes, between attitudes and behaviours, between circumstances and motivations”. Given the framework of this research lies in health promotion and behaviour change, such associations, for example, between circumstances that led to individuals participating in social ballroom dancing and their motivations to continue to adhere to the activity are suitable for the employment of a Framework approach. FA is considered useful for examining cross-sectional descriptive data and its structured approach allows for transparency in researcher’s interpretations of participants’ experiences. The interconnected staged process can also be a helpful mechanism of inquiry for novice researchers and it provides a transparent audit trail of the data analysis process (Smith and Firth, 2009).

Although FA is likened to Grounded Theory (GT) by some, in terms of the terminology and process of coding when using 'line by line' (Charmaz, 2014) and 'open coding' (Corbin and Strauss, 2008) a GT approach encourages a more inductive approach to new theoretical concepts emerging from the data, concepts that are thus, 'grounded' in the data (see Charmaz, 2014, p.343; Corbin and Strauss, 2008; Creswell, 2007; Glaser and Strauss, 1967), whereas FA is better suited when research questions have been defined in a pre-designed sample (Srivastava & Thomson, 2009). FA is not necessarily associated with either an inductive or deductive approach. It depends somewhat on how the research questions are posed as to whether an inductive or deductive approach is taken, but *how* questions, such as those posed during the interviews in this study as to *how* ballroom dancing influences one's health and well-being, will take a more inductive approach as the themes will be generated through coding of the data and Gale et al. (2013, p.3) note "this allows for the unexpected and permits more socially-located responses".

With regard to a research paradigm with which Framework Analysis identifies, there appears to be a paucity of literature discussing this area. Ward et al. (2013, p.3) suggest that FA uses a 'pragmatic' approach. However, Ward et al. (2013) continue to cite Snape and Spencer (2003) who suggest Framework Analysis's ontological position aligns closely with 'subtle realism', where it is considered that, "the social world exists independently of individual subjective understanding, but is only accessible in qualitative research via participants' interpretations which are further interpreted by the researcher" (Hammersley and Atkinson, 1995, cited by Ward et al. 2013, p.3).

This study aims to explore the health experiences of older adults who participate in social ballroom dancing. Taking a pragmatic, subtle realist approach, participants' experiences, motivations, meanings and realities were gathered and analysed via the use of semi-structured interviews. There were specific research questions to address, which aimed to illuminate the reasons why older adults engage in and adhere to social ballroom dancing as a physical activity and the relationship between ballroom dancing and health and well-being.

4.4.1 **Data Collection: Semi-Structured Interviews**

The choice of using semi-structured interviews was somewhat pragmatic, whilst other methods of data collection were considered, such as participant observation, semi-structured interviews were employed for data collection to explore each individual's dance story. It was considered that this would provide the necessary depth to explore how the participants' dance experiences were perceived and the meaning of these experiences

(Langdrige, 2007) in regard to their health and well-being. Utilising an interview 'guide' (hence 'semi-structured') can also help to prompt the interviewee into the research topic (Srivastava and Thomson, 2009). The semi-structured nature of the interviews meant that the interview schedule required careful planning to avoid 'over-general recall' whereby individuals provide general memories rather than recounting specific events as instructed (Williams, 1996 cited by Pillemer, 2000, p.205). As a fairly novice researcher I also found it helpful to use an interview guide, which was modified following each round of interviews, having considered the findings from the preceding interviews.

Based upon the literature review and research questions, themes for the semi-structured interviews at baseline focused on such areas as why did the participants dance and what were the instigators to participating in social ballroom dancing; for example were health considerations involved? A history was taken of dancing activities, had participants danced in classes when younger or at school? Was dance part of their social activity across the life course? What were people thinking about when they were dancing? Was there a focus on steps, their health or even their appearance?

Participants were also asked about any health benefits they thought they might have gained from dancing and if they considered their body and health as an aspect of their dance life. Pre-existing pathologies were discussed with reference to dancing and any problems that dancing might cause, for example, injuries that might have occurred as a result of the dance classes. With regard to the 'social' aspect of the social ballroom dancing classes, participants were asked to consider how they thought social ballroom dancing shaped their lifestyles or relationships with dance partners, other dancers, friends and family since they started the classes and indeed, what they thought made them devote their spare time to dancing and how it fitted into the rest of their day or week. (The interview procedure is outlined in section 5.8 and the interview guide can be found in Appendix 11).

Participants were interviewed either as individuals, if they attended their dance classes alone; or as a pair if they attended with a dance or life partner. This assisted with consideration of the interactions and dynamics of a dance partnership but the researcher was cautious not to allow one individual to be dominant over the other and involve both participants in the questioning. Anderson and Arsenault (2000, p.192) note that involving one or more participants in an interview can help provide a rich source of data when one participant 'triggers responses for another'. Section 4.5 considers some of the dilemmas qualitative inquiry can present for the researcher.

4.5 **Qualitative Inquiry: Considering the Lived Experience**

Williams (2004, p.23) suggests it is important that the theory must come from the people to whom any given dance belongs. Therefore, it was important that this research studied the meaning of health in those who ballroom dance. It was also important that I considered my 'position' in the research; as an interviewer and as a dancer, perhaps almost an 'insider', as this would help to define the specific methodological and analytical strategies that impact upon the process of the research. Whilst the qualitative method was not one of an ethnographic approach due to the limitations of my availability to work in the field, some of the theory behind ethnographic work in dance research was acknowledged and the impact that my prior experiences might have had on interpretation of the findings (Marion, 2008; Thomas and Cooper, 2002).

Considering qualitative methodologies, Marion (2008, p.168) reminds researchers that "ethnographers should not be absent from their ethnographies", Pálsson (1994, p.911) that "ethnographers must pour themselves into the community in which they work" and Butler-Kisber (2010, p.69) that narrative inquirers should "live the story" with their research participants. However, one also recognises the *epoché*; the process by which researchers attempt to abstain from and bracket off 'presuppositions' and 'preconceived ideas' (Husserl, [1931] 1967, cited by Langdrige, 2007, p.17). Whilst Husserl suggests one can be transcendental to one's data, Ricoeur suggests "we can never have a view from nowhere" (cited by Langdrige, 2007, p.139) as researchers will always be influenced by societal and cultural factors and past experiences. Indeed, to improve the rigor of qualitative research, Creswell (2007, p.46) insists the researcher's "culture, gender, history and experiences" shape the qualitative data, analysis and interpretation. Therefore, it is important that researchers are transparent about their preconceptions and the reflexive process they take during the study and acknowledge when necessary, the impact their presence might have during data analysis.

Scott argues, that by nature of the need to make experience visible, there is ignorance of the historical systems in which one's experiences are placed and that "it is not individuals who have experience, but subjects who are constituted through experience" (1999, p.779). Experience is thus 'historicised' and critically analysed through careful interpretation by the researcher. When performing qualitative research and discussing the experiences of research participants, as a researcher, it is important to ask, 'what counts as experience?' How would I ensure my preconceptions and knowledge of ballroom dancing did not ignore voices needing to be heard and for the experiences of others to become visible? How would I know that the participants' emotions were interpreted as they were meant and as they

were culturally and historically constituted? When considering the method of choice for this research, I reflected upon theories such as that of phenomenological research, which considers human experience and the perception of the “things in their appearing” (Langdrige, 2007, p.10-11). Phenomenology is concerned with first person life experiences, what is experienced and the way it is experienced, Husserl believing that one could ‘bracket off’ one’s preconceptions and be, ‘transcendental’ towards one’s research; an idea refuted by the Existentialists who believe humans to be “too practically engaged with the world through the life-world to make such an abstraction” (Langdrige, 2007, p.25). Given my dancing experience, I felt more alignment with the Existentialists in that I was likely ‘too practically engaged’ with dance to ‘bracket off’ my prior knowledge entirely. Langdrige (2007) discusses how hermeneutical phenomenology is concerned with the researcher’s interpretation of a research participant’s story and that much, if not all of our experience can be best understood through the stories one tells of that experience, that is, life as experienced, is narratively structured, produced and reproduced. I wanted to explore the participants’ experiences of health and well-being. Whilst I could have performed this using a battery of quantitative outcome measures, I, as with Langdrige (2007), felt that this experience was ‘best understood’ and explored through qualitative means and interpretations of the participants’ stories.

Certainly, one must consider the interpretations of experience as it is through certain perspectives that experience produces knowledge. The reproduction of narratives will not only depend upon how gender, sexuality, language and the social, historical and cultural experiences of the individual have shaped one’s self and one’s experiences, but also of the person interviewing and interpreting the findings. In this research, I acknowledged the previous literature on gender and dance and the strong historical, social and cultural influences upon ballroom dancing and that these were to be likely influences on the experiences of not only my participants but also my own dancing experiences. Hence, I considered the epistemology, “what is the relationship between the inquirer and the known” (Denzin and Lincoln, 2005, p.22) and tried to recognise my own voice (consisting of my experiences and prior knowledge) in amongst the voices in my research and my own influence upon the illumination of narratives and production of knowledge. As Scott (1999) suggests, as the researcher interviewing participants I had to learn to become a critical listener and remember that subjects have agency and their experiences are created through *their* life’s conditions.

Consideration needs to be given to the characteristics of the interviewer and interviewee, such as age, socio-economic status, race and gender. As a female, White British, healthcare

professional in my mid-thirties at the start of this study, I was interviewing participants who were considerably older; at least one generational gap between us. In Lillian Rubin's 1976 study of working class families (cited by Pillemer, 2000, p.180), she was surprised by the willingness of her male participants to open up to her, an unfamiliar female researcher and this provided encouraging reading prior to commencing the interviews. In ballroom, women often outnumber men in classes too and it is noted that women provide "richer" and "more embellished stories" in contrast to men (Pillemer, 2000, p.187). It has also been suggested that Western life has a "narrative or storytelling character" (Carr, 1986, cited by Crossley, 2000, p.48) in comparison to other areas, therefore it was important to consider whether race might influence the nature of the story told. Whilst age, gender, social group and race might influence one's storytelling character and hence the flow or content of interviews and despite limited experience in performing formal research interviews, I was not overly concerned about my ability to converse with a diverse range of participants given my professional background as a physiotherapist working with a diverse range of individuals of all ages and social groups.

It is recognised that individual researchers may be working under different political pressures and will have different pre-existing perceptions, knowledge and ideologies, so that the subject's 'becoming visible' might be significantly hampered by conditions imposed externally upon the researcher. Therefore, there ought to at least be recognition and reflection upon this, which might enable the emergence of new interpretations of knowledge that challenge historical and social thought. Whilst I did not feel myself to be under 'political' pressure as such, the main dance class the majority of participants attended was run and part funded by the local town council. Having made links with the dance tutor and gained permission to access potential participants, I was aware that a positive outcome from the study, that is that ballroom dancing *does* provide significant health benefits, would provide 'evidence' to support the continued council funding for the course and, potentially, maintain employment for those involved as community dance leaders. It was important that I recognised this and reflected upon how it *might* influence my findings, not only because at some point during the study a political/ economic pressure for 'evidence' might have been necessary, but also in that the class was of great importance to its participants; would *they* feel under pressure to over-emphasise benefits?

This type of consideration might link to Doucet and Mauthner's (2008) focus on the question *what* can be known about research subjects and *how* researchers can come to know them? They debate the 'degree of authenticity' that can be accessed through research subjects, posing a three-fold argument on the narrated subject and subjectivity, knowing the subject

inside and *outside* of narratives and *how* can subjects be known? Mauthner and Doucet (2003) question whether researchers can gain authenticity from research subjects when they tell their life-stories. In this sense, would participants feel a political pressure or sense that a positive outcome of this research would influence decision making processes *if* their dance class's funding was under threat?

Bruner (1987, p.31 cited by Pillemer, 2000, p.21) suggests, '[A] life is not "how it was" but how it is interpreted and reinterpreted, told and retold'. Indeed, Ricoeur's 'Narrative identity' is based on the premise that an individual's self-identity is formed only through the process of story-telling (1986 cited by Crossley, 2000). If the accuracy of stories is deemed to be questionable, researchers are urged to consider that if stories shape an individual's identity, an individual's *beliefs* about what happened should become the emphasis of the data, and, once constructed, narrative truth can become 'just as real as any other kind of truth' (Spence, 1982, p.31, cited by Pillemer, 2000, p.10). Linnell et al (2008, p.302) question how we are "accountable to ourselves or others, both as speakers and listeners" and suggest accountability is dependent upon the *ethical self* and how one's historicity is "constituted, recognized and rendered intelligible" and that this ethical self can also act as a "censorial self" (2008, p.303) and thus a political self when controlling what might be said and understood or the embodied narrative when speaking and listening.

Interviews in this study were largely carried out in dyads of life-partners who danced together. This gave opportunity for the accuracy of stories or be questioned, not only by me as the interviewer, but also by each individual in the dyad when couples recounted their life's events and stories. Memories are said to be reconstructions rather than exact replications of an experience and therefore, individual narratives will sometimes be affected by lies, forgetfulness, exaggerations, confusion and individual's simply getting things wrong (1989, p.261 cited by Pillemer, 2000, p.191). One must also recognise the importance of activity, time and sequence upon one's memories; and that these factors influence the meaning of an experience.

The act of narrative can provide self-empowerment and it can be a tool for critical reflexivity and a force of transformation. Through the creation of a private narrative, in not only the individual telling the story, but listening to their own story as it is told, recognition of power existing over oneself might have a liberating effect on an individual. Given the emphasis on self-empowerment of individuals in health promotion policies, it was hoped the use of qualitative inquiry and semi-structured interviews would provide participants with a platform for reflexivity and transformation with regard to their health and well-being practices, and in

particular as the adults moved through the life course and their transformation into older adult stages.

4.6 Chapter Summary

This chapter presents a reasoning for the implementation of a mixed methods approach. It considered the epistemological and ontological issues associated with a mixed method approach, such as the position of the researcher and the research participants within the research. The use of mixed methods research approaches parallel with the practice paradigms in physiotherapy, where a combination of qualitative subjective history taking and quantitative outcome measure collection is commonplace. In light of the current need for public health promotion, mixed methods research can play a vital role in exploring one's physical activity experiences and behaviours alongside measurements of health interventions. After consideration of some other forms of qualitative research methods, the implementation of the qualitative Framework Analysis approach has been justified. Chapter 5 presents the methodology; participants, recruitment and outline of the research design for both the quantitative and qualitative inquiry. The statistical analyses tests are highlighted. Ethical issues and research risks are also considered.

Chapter 5 **Methodology: The Research Design**

Following on from the discussion of methodological considerations in Chapter 4, Chapter 5 presents an outline of the methodological research design. Sampling, participants and recruitment are highlighted and an explanation of the process of data collection protocol provided and the statistical tests are proposed. The process for the semi-structured interviews is outlined and the stages of the Framework Analysis approach for the coding of interview transcripts is presented. Ethical issues and potential research risks are considered.

5.1 *Sampling and Participants*

This research study was framed as a feasibility study (Arain, Campbell, Cooper and Lancaster, 2010) to investigate the effect of social ballroom dancing on physical health and mental well-being outcome measures for older adults. The aim was to recruit a purposive sample of 25-30 participants. Participants were to be community-dwelling older adults who participated in social ballroom dance at least once a week.

Inclusion and exclusion criteria were minimal since the dance classes themselves did not have specific inclusion or exclusion criteria; anyone could join in, including those with known pathology. Inclusion criteria were minimised and based on considerations of age group, community dwelling status and social ballroom dancing requirements and related to the research questions and the outcome measures chosen to assess for physical function. Participants with diagnosed dementia-related pathology were excluded due to the inclusion of interviews and problems this might present with recall.

Inclusion criteria:

- Aged 55 years and over with no defined upper age limit.
- 'Community-dwelling' older adults (living in their own home and not residing in assisted living or nursing home accommodation). This was because previous research has considered ballroom dancing for older adults in residential care.
- Participated in social ballroom dancing at least once a week.
- Novice level dancer (not dancing to a competitive level).

Exclusion criteria:

- Diagnosis of a dementia-related pathology.

Whilst it is acknowledged (as in section 1.5) that falls statistics are often related to those over the age of 60, the lower age limit of 55 years allowed for one partner to be slightly younger than the other. Prior to recruitment, it was recognised that dancing classes were an activity that individuals often took up as a new activity shortly after retirement, at around the age of 60, but at times partners were slightly younger. It also accounted for the range in definitions of 'older' for adults and the age groupings for normative data findings for the Biodex Balance System SD (BBS).

As it was deemed that individuals would be at no greater exertion during the testing than during the exertion of a social ballroom dancing class, individuals with certain pre-existing pathology were considered eligible for inclusion if they had already chosen to participate in dance classes either after advice from their General Practitioner (GP) or of their own accord.

5.2 Recruitment

I made contact with 3 dance teachers who each ran several classes every week in the local area. The tutors were approached to explain the aims of the research and seek permission to access their dance groups for recruitment onto the study. These dance teachers were identified through internet and local newspaper searches. Given the social nature of recreational ballroom dancing and the events one attends as a dancer, which might enable contact with potential research participants and relationships that might be formed with other members of the dance community, I decided I would not exclude individuals with whom I had had prior contact at dance events or during dance classes. I considered the potential for bias when interviewing a known participant, however, I felt that should this situation have arisen, it should not be detrimental to the study and might even provide an avenue for a more in-depth level of data being gained.

Although all three teachers were enthusiastic about the research, only one committed to allowing a time for me to attend the dance classes and speak to participants. I attended a local ballroom dancing class on two separate occasions and one community dance leader training course with the permission of the dance teacher and a short time was allocated to provide an explanation of the study at the end of the class and recruit participants. The aims of the study and the commitment required from individuals to participate were explained, information sheets provided and there was an opportunity for potential participants to have any questions answered. Participants were advised that their involvement would cover approximately one year. This would consist of 5 data collection sessions in total, at baseline, and 3, 6, 9 and 12 months for the testing of the clinical

outcome measures; with interviews also occurring during the sessions at baseline, 6 and 12 months. All sessions took place around the allocated time points.

5.3 Outline of Data Collected

The following demographic information was collected at baseline:

1. Age in years
2. Height and weight (both converted to metric if figures were provided in imperial measures)
3. Known medical problems
4. Diagnosis of dementia or dementia-related illness
5. Previous history of falls
6. Current medication use
7. Frequency of ballroom dancing
8. Participation in any other form of exercise.

Items 3 to 8 were updated at the 3, 6, 9 and 12 month visits.

The Clinical Outcomes in Routine Examination- General Population (CORE-GP) and Falls Efficacy Scale-International (FES-I) outcome measures for well-being were completed prior to the completion of the physical outcome measurements.

The physical tests performed on the Biodex Balance System SD (BBS) were Postural Stability Test, Limits of Stability Test and a Falls Risk Test.

Balance outcome measures were collected in the following order:

1. Timed Up And Go Test (TUGT)
2. Performance Orientated Assessment of Mobility (POAM or otherwise known as 'Tinetti's Test') Balance and Gait sections.
3. Functional Reach Test (FR Test)
4. Four-Square Step Test (FSST)

Interviews were performed following the above data collection at 0, 6 and 12 months.

5.4 Procedure for Data Collection

Participants attended the University's Department of Health Sciences Exercise Laboratory on 5 occasions over the course of a 12-month period as close to the allocated months as

possible. All testing sessions took place within the same exercise laboratory room. Following recruitment during the dance events, participants received either telephone calls or emails, depending upon their preference, to arrange a convenient time to attend for testing days. If participants were then unable to attend on the scheduled day, for example due to participant illness, an alternative convenient date was found as close to the relevant data collection time-point as possible. Participants were sent the study's detailed participant information sheet at this time via email or post to provide opportunity to digest the information prior to attending the data collection session.

At baseline, the study was explained to participants again, following their receipt of the information sheet and participants were asked if they had any further questions at this point. If participants were satisfied they understood what participation in the study involved and had no concerns, they signed a written informed consent form. All participants then completed a baseline demographic questionnaire (see section 5.3 and Appendix 6), which included the identification of exclusion criteria. No participants were excluded from the trial following completion of this questionnaire. At baseline, data for age, weight and height were recorded by a clinical technician assistant for input into the BBS, if this had not been self-reported by the participants. At the start of all further visits, participants completed a follow-up questionnaire to update upon any changes to the baseline information as in 5.3 above.

Standardised explanations and instructions were given according to the test protocols for each outcome measure. Participants were given opportunity to ask any further questions to clarify the process of each test if they were unsure and there was also an opportunity to ask further questions at the end of each session.

Following the completion of the baseline or follow-up demographic questionnaires, the Mental Health and Well-being Outcome Measures (the CORE-GP followed by the FES-I questionnaire) were completed by participants. Physical tests were then performed in the order presented above in section 5.3 and results measured and recorded at all sessions by the researcher. The BBS tests were monitored and recorded by the same clinical technician assistant during all data sessions.

Follow-up questionnaires were completed to note any changes to medical history, occurrence of falls, changes to medication, frequency of attending social ballroom dancing classes or whether new physical activities had commenced since the last data collection visit.

To allow for the most efficient use of participant and researcher time, interviews took place immediately after the data collection sessions at these time-points. Interviews were performed individually or with couples who danced together and recorded using a digital voice recorder. (Please refer to section 5.8 for further details of the interview process).

Following each session, participants were contacted via e-mail or telephone to arrange a convenient time for the next data collection visit. As outlined above firstly a set of demographic data was collected and questionnaire responses monitored at each 3-month follow-up period.

The following sections present the data collected and outline the rationale for inclusion of each outcome measure.

5.5 *Mental Health and Well-being Outcome Measures*

There are a plethora of outcome measures for mental health and well-being and these are often more suitable for clinical populations; indeed, there are some more specifically for hospitalised clients leading experts in the field of psychological therapies to proclaim a “state of disarray, if not chaos” in outcome measure choice (Froyd et al., 1996 cited by Sinclair, Barkham, Evans, Connell and Audin, 2005, p.153). In addition, these outcome measures are not readily available to health care professions and often charges are incurred for their use, making them inaccessible and expensive for services. It was with this in mind, that the Clinical Outcomes in Routine Examination- Outcome Measure ((CORE-OM) CORE-IMS, 2014) was developed to provide a ‘core’ outcome measure for widespread use in clinical environments. This tool is a *copyleft* document, meaning although the content is copyrighted, it can be freely used by clinicians or researchers (Sinclair et al., 2005).

The CORE-OM and its derivatives were considered for their appropriateness for the participant sample and advice was sought from experts in the field of psychological care, both at the university and within external bodies. When choosing outcome measures for mental health and well-being, one must also be aware of the problem of contamination of mental health items by problems with poor physical health; for example, in the case of a physical problem limiting one’s ability to participate in social activity or be independently mobile outside of the home, which is likely to have a detrimental effect upon one’s general well-being.

For the purposes of assessing participants’ mental health and well-being in the present study, the Clinical Outcomes in Routine Examination- General Population (CORE-GP) and the Falls Efficacy Scale- International (FES-I) were selected as appropriate measures. The measures are described in full below.

5.5.1 Clinical Outcomes in Routine Examination- General Population (CORE-GP)

Derived from the 32-item Clinical Outcomes in Routine Examination- Outcome Measure (CORE-OM), the CORE-GP is a shorter, 14-item measure including questions covering issues such as general well-being, depression, anxiety, self-esteem and risk and life/social functioning and has been validated for use within a non-clinical general population (CORE-IMS, 2014).

The Geriatric Depression scale, which although a suitable and well used screening test for depression in older people, with high sensitivity and specificity in different environments (Thomas, 2009), only provides the option for yes or no answers, whereas in contrast, the CORE-GP scale rates an individual’s statement on a five-point scale, (see Appendix 8 for CORE-GP questionnaire). The total score is calculated by adding the response values for all 14 items. The mean score values can be calculated and multiplied by 10 to give a whole number score, but if there is missing data, that is, if a question has not been completed, this item is discounted from the mean calculations. The higher the score, the greater the individual’s level of distress measures.

Table 2 presents the scale boundaries for the CORE-GP test. Scores of 0-20 are considered to be a ‘healthy’ range, with 21-33 depicting a ‘low level of client distress’ and a national ‘clinical cut-off’ has been established as a score of 10 (CORE-IMS, 2014).

Table 2 Look up scale of CORE-OM scores and severity levels (CORE-IMS, 2014)

Severity of Client Distress	Total CORE-OM Score
Healthy	1-20
Low Level	21-33
Mild	34-50
Moderate	51-67
Moderate to severe	68-85
Severe	85+

CORE-GP items measure dimensions of subjective well-being, problems/symptoms and life functioning, but not the dimension of risk/harm (suicidal thoughts and harm to self or others), which is reserved for the clinical population CORE-OM measures (Sinclair et al., 2005).

In accordance with the CORE System implementation guidelines (CORE-IMS, 2014, p.7), which state that the CORE outcome measures, 'should be completed by clients prior to the first face-to-face contact with a practitioner and immediately preceding their final therapy session', the participants were asked to complete the CORE-GP questionnaire as their first outcome measures 'task' having been given opportunity to read through the study information sheet, had questions they might have had answered, signed the informed consent form and completed the demographic questionnaire. It is recommended that the CORE-measures are completed whilst in the clinical setting rather than sending to clients through the post; therefore this and other outcome measures requiring a written response were completed prior to starting the physical outcome measures testing. This also enabled participants to ask for help in the event that they were to need assistance with understanding any of the items as is advocated in the CORE system guidelines (CORE-IMS, 2014).

The CORE-IMS outcome measures are relatively new scales compared to some of the more popular measures for mental health and well-being. This presents a problem with confirming the measure's sensitivity for use in specific client groups, such as older people, since the data is not yet readily available. However, normative data has been found in samples from a population in Sinclair et al's (2005) study that assessed the CORE-GP's psychometric properties and its reliability and validity using four data sets (although in this trial it is referred to as the GP-CORE), consisting of student non-clinical ($n= 768$), student clinical ($n= 610$), student clinical (repeated measures, $n= 43$) and non-student clinical populations ($n= 784$). The study found that the 14 item CORE-GP measure had excellent psychometric properties in a convenience sample from a student population, high internal consistency and high reliability for distinguishing between clinical and non-clinical populations.

Whilst performed in non-clinical student populations, thus decreasing its external applicability to the general population, the authors note the diversity in age and socioeconomic status of the student population studied and suggest that this data demonstrates the potential of the CORE-GP to be used in general populations, but that further research is necessary. The CORE-GP was utilised in this study as it is for a 'non-clinical' population; that is, for a general population of people who have not been clinically

diagnosed with a mental health illness. It also considers physical health aspects as a measure of well-being and this is of interest to the dimensions of health within this study.

5.5.2 Falls Efficacy Scale- International (FES-I)

The FES-I measures one's fear, or 'concern' of falling. It has been validated across many cultures, having been translated into a range of languages and is commonly used in physiotherapy practice (AGILE, *n.d.*; Yardley et al., 2005; see Appendix 9). The FES-I was derived from the original Falls Efficacy Scale (FES), a 10-item questionnaire, but one which focuses more on one's confidence levels in performing activities of daily living without falling. It has been questioned in terms of its applicability to more able, higher functioning older people, since its original items were more focused towards frail older people (AGILE, *n.d.*). The FES-I was devised to solve this problem and this 16-item measure included additional questions that focused on one's social activities and the impact of a fear of falling upon one's social life (Yardley et al., 2005). Therefore, as the FES-I includes items relevant to higher functioning older people and their social lives, which was applicable to the sample in this study. This measure was chosen to measure the cohort's fear of falling. In the original study to establish the FES-I's psychometric properties, reliability and concurrent validity, Yardley et al. (2005) studied 704 older people from a diverse range of backgrounds and found the FES-I to score highly on all factors. Internal and test-retest reliability were deemed excellent and comparable to other existing measures of falling, and there was evidence that the FES-I performed better than the FES in detecting concerns about social and outdoor activities. As the FES-I uses all the original items of the FES, the authors consider it likely to have a similar level of validity, however, this is yet to be tested (Yardley et al., 2005).

There has since been a short version of the FES-I developed, the Short FES-I, which has been found to be a reliable, valid measure of the fear of falling (Kempen et al., 2008). However, since the Short FES-I consists of 7-items, all of which feature in the FES-I, it is recommended that the FES-I 16-item version is used where possible, as this allows for the 7-item Short FES-I to be reported upon too.

5.6 Quantitative Data Collection: Physical Testing Measures

The following section present details of the physical function outcome measures and test protocols.

5.6.1 Dynamic Balance - The Biodex Balance System SD

Dynamic balance is defined as “the body’s maintenance of equilibrium under conditions causing the centre of gravity to move in response to muscular activity” (Kinzey and Armstrong, 1998, cited by Cachepe, Shifflett, Kahanov and Wughalter, 2001, p. 98).

The Biodex Balance System SD (BBS, Biodex Medical Systems Inc., Biodex, *n.d.a*; see figure 2) is a multi-axial standing platform balance system that is used for the testing and training of both static and dynamic balance and has been previously said to have good reliability (Schmitz and Arnold, 1998). The BBS was used in this study as a test measure for postural stability (PST), limits of stability (LOS) and to provide a falls risk index (FRI); and tests were performed in this order. Dynamic balance tests were tested within this study as the assessment of motion is more relevant when assessing individuals for falls risk, since falls are usually related to dynamic rather than static activities (Aydoğ, Bal, Tolga Aydoğ and Çakei, 2005).

The BBS allows for the testing of single leg stability. However, it was decided not to perform this test given Bohannon, Larkin, Cook, Gear and Singer’s (1984) suggestion that only five seconds would be a ‘normal’ length of time for 60 to 69-year-olds to perform a uni-pedal, eyes open balance test. The Biodex footplate would also be moving during testing and this might compromise safety for individuals who are in an age-group that already has an increased risk of falling due to changes in dynamic balance ability.

Figure 2 The Biodex Balance System SD



The Biodex footplate provides a grid reference for foot positioning as in Figure 3 below so that each participant can be measured to start from the same position during testing.

Figure 3 The Biodex Balance System SD footplate



The postural stability test (PST) challenges an individual to maintain their centre of balance as close to the centre point of the circle as possible. The overall 'stability index' score generated assesses foot platform deviations from the centre in all motions during testing and is calculated for the postural stability test and the falls risk test below. Scores are a combination of the Anterior-Posterior Stability Index (APSI) and Medial-Lateral Stability Index (MLSI) and lower scores indicate a greater stability than higher scores (Biodex, *n.d.* b).

The Limits of Stability (LOS) is defined as 'the maximum angle a body can achieve from vertical without losing one's balance' (Biodex, *n.d.* b, p.10-1). The LOS test challenges an individual's ability to dynamically control their centre of gravity within the 'sway envelope' of their base of support. Participants need to move in the direction of whichever circle is randomly highlighted on the screen before moving onto the next one, and 'hit' all circles in as short a time as possible. The 'normal' sway envelope is defined as an area approximated from vertical as 16 degrees of sway from side to side (lateral sway), 8 degrees forward and 4 degrees back (anterior and posterior) with scoring for the test being percentage based. If poor control is evident, there are likely to be problems with lower limb strength, proprioception, vestibular or visual deficiencies (Biodex, *n.d.* b).

The Falls Risk Test (FRT) is a similar test to the PST, with the additional complexity of the platform moving from a more stable to less stable platform level as the test progresses through the 20-second test time.

5.6.2 **Assessment of Falls Risk and Function**

There has been much debate about the relevance of formal 'falls' risk assessments for community-dwelling individuals or inpatients in hospital settings (Donoghue, Graham, Gibbs, Mitten-Lewis and Blay, 2003; Muir, Berg, Chesworth, Klar and Speechley, 2010; Scott, Votova, Scanlan and Close, 2007). An accurate method of assessment is important to predict those at risk of falls and for an appropriate prevention programme to be implemented, but Scott et al. (2007) suggest that there is no single test that can be recommended for implementation in all settings as assessments, whilst shown to be valid and reliable in some settings, have yet to be tested in more than one setting. Therefore, questions remain regarding the inter-rater reliability, validity and specificity of the numerous tests that have been suggested. Indeed, some authors have found there to be no difference between the accuracy of some validated tests, which are time-consuming to complete, and nurses' own clinical judgements (Eagle et al., 1999 cited by Donoghue et al., 2003) or even the self-reporting of balance problems (Muir et al., 2010). The numerous outcome measures with their different indications for use mean that careful consideration is needed prior to their implementation. For example, the use of the Elderly Mobility Scale (EMS) was not appropriate for use in this research, since it is indicated for frail older people who are hospitalised (AGILE, *n.d.*). Ambulatory capacity, age, balance, lower limb strength and range of joint motion have been cited as risk factors for falls and the chosen tests in this study aim to assess some of these intrinsic factors (Donoghue et al., 2003; Hansma, Emmelot-Vonk and Verhaar, 2010; Lueckenotte and Conley, 2009; Mitty and Flores, 2007; Perell et al., 2001; Scott et al., 2007; Wolfe, Lourenco and Mukland, 2010). The outcome measurement tests used, as outlined below, are all commonplace in physiotherapy clinical practice.

5.6.3 **Performance Orientated Assessment of Mobility (POAM)/ Tinetti's Test**

The Performance Orientated Assessment of Mobility (POAM) (or Tinetti's test) is a multi-item assessment of abnormalities of gait and static and dynamic balance. It measures the risk of falling through functional activities in various settings and consists of two sections; a balance assessment and a gait assessment section (see Appendix 10). It has been found to have acceptable levels of sensitivity of predicting falls when used as a screening test in community dwelling older people (Mitty and Flores, 2007; Perell et al., 2001; Raïche et al., 2000; Wolfe et al., 2010). The maximum score for the balance section is 16 points and the gait section 12 points, with a total score of 28 points. Scores under 18 represent a high risk for falls, 19-23 a moderate risk and over 24 a low risk (AGILE, *n.d.*).

A possible alternative choice might have been the Berg Balance Scale (AGILE, *n.d.*) as several of the items are consistent between tests; for example, standing unsupported with eyes closed and turning 360°. Whilst the Berg Balance Scale provides a list of five ratings on a scale of 0 to 4, the POAM provides fewer options, between two and four 'levels' of achievement for the scoring of the items being measured. However, it was decided that the POAM tests would be implemented as these were considered more 'testing' to community dwelling older adults, whereas the Berg Balance Scale includes items such as standing unsupported for two minutes, transferring from one chair to another, sitting for two minutes, which might be more appropriate measures for hospitalised older people.

Therefore, considering the participants in this study were community-dwelling older adult ballroom dancers, it was assumed that such tests would be too easy, thus reducing the sensitivity of the tests for this population. The POAM scale's gait section was also deemed useful and applicable to ballroom dancing, in that it measures dynamic activity; for example, step symmetry, continuity and length of step. Whilst both the Berg Balance Scale and POAM have been found to be reliable, valid and responsive to change, the POAM has also been found to have good sensitivity and specificity, and this had not yet been reported on with the Berg Balance Scale at the time of data collection (AGILE, *n.d.*).

5.6.4 Timed Up and Go test (TUGT)

The Timed Up and Go test (TUGT) is used to assess elements of functional ability, motor performance, balance, gait and transfers (Fawcett, 2008) for older adults in a variety of settings and presents sensitivity and specificity above the median of falls risk assessment tests (Perell et al., 2001) and in particular for older people with mobility problems or pathology such as osteoarthritis (AGILE, *n.d.*).

The test is timed in seconds and upon the word 'go' the subject rises and walks at a safe pace for 3 metres, then turns 180°, and walks back to sit back down into a chair. Bohannon (2006, cited by AGILE, *n.d.*) suggests normative values for the TUGT in Table 3 below, which are presented as individual figures and not a range of times. AGILE (*n.d.*) also state that a community-dwelling adult's mobility can be regarded as 'normal' if the TUGT is completed in 12 seconds or less. Table 3 shows the normative data for the TUGT at the time of data collection.

Table 3: Interpretation of results for the TUGT

Age Group	Normative value in seconds
60-69	8.1
70-79	9.2
80-99	12.6

(Bohannon, 2006, cited by AGILE *n.d.* handbook)

5.6.5 Functional Reach Test

The functional reach test was performed as it is commonly used in physiotherapy clinical practice, and is an inexpensive and time-efficient measure of dynamic postural control; that is, the maximum distance an individual can reach forwards beyond arm's length, without having to take a step forward (AGILE, *n.d.*). This is a test which has strong predictive validity and good reliability (AGILE, *n.d.*; Fawcett, 2008; Muir et al, 2010) and good sensitivity and specificity (Scott et al., 2007) for predicting individuals who are at risk of falls; and although used with any age group, it is commonly used with older people.

While undertaking this procedure, participants wore their own flat-soled footwear and were given a practice attempt. They were positioned in a normal standing posture, with feet slightly apart parallel with a wall. A large sheet of paper was stuck to the wall and a starting measure was recorded by asking the participant to clench their fist. As the participant reached forwards, the position of the third metacarpal was noted (please see Figure 4). The participant then returned to their starting position without assistance. If balance was lost, the test was discounted (AGILE, *n.d.*). Three attempts of the test were performed and an average score recorded.

Figure 4 The Functional Reach Test

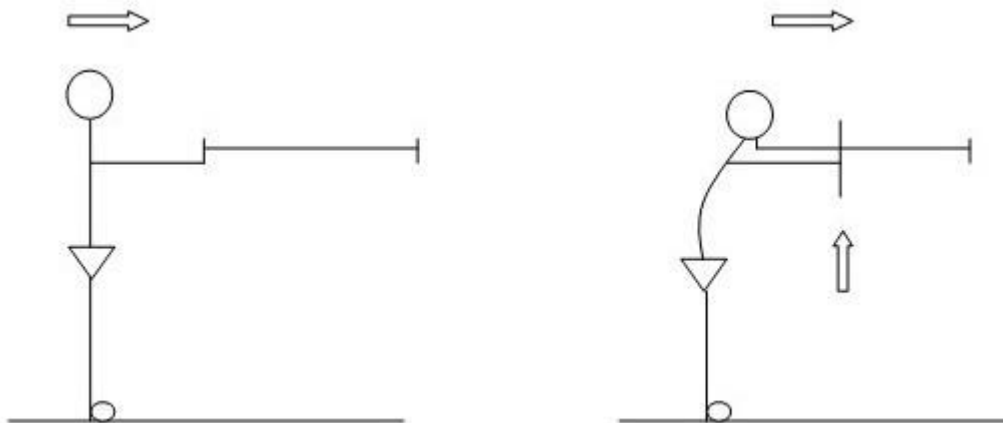


Table 4 indicates the distance reached in inches and its corresponding relative risk for falls as suggested by AGILE (*n.d.*). For the purpose of this study, measurements were recorded in centimetres and converted to inches to correspond with the relative risk table below.

Table 4 Functional Reach results in inches and relative risk of falls

Distance reached in inches	Relative risk for falls
Unwilling or unable to reach	8 x more likely to fall
1-6 inches	4 x more likely to fall
6-10 inches	2 x more likely to fall
Over 10 inches	Not likely to fall

5.6.6 Four Square Step Test (FSST)

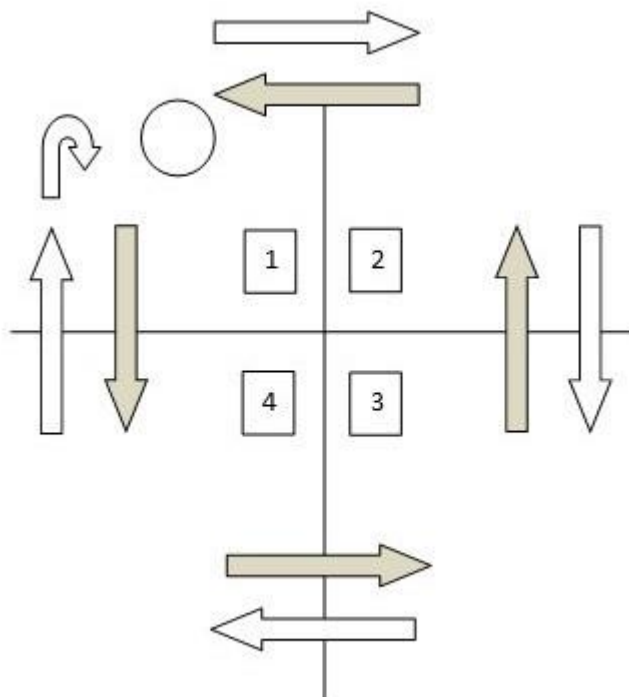
The Four Square Step Test (FSST) is a test that measures dynamic standing balance in an adult population. Its aim is to identify those at risk of falling. It has been validated for use in older people, over 65 years of age and has been found to be reliable, valid, sensitive in the original study and specific (AGILE, *n.d.*). The FSST measures dynamic standing balance in an active, older adult, community-dwelling population and attempts to identify those at risk of falling (AGILE, *n.d.*).

The FFST is performed as outlined by AGILE (*n.d.*) as follows and is demonstrated in Figure 5 below. Four walking sticks were laid on the floor in a cross shaped pattern. Participants wore flat comfortable shoes and were allowed to have a practice attempt after the instructions had been explained. Participants were instructed that they needed to complete

the sequence as fast and as safely as possible without touching the sticks, and both feet were to make contact with the floor in each square. The participant faced forwards and started in square 1, facing square 2, stepped forward into square 2, sideways to square 3, backward to square 4, sideways to square 1 and then stepped in reverse, sideways to square 4, forward to square 3, sideways to square 2, and backwards to square 1.

Figure 5 The Four Square Step Test (FSST)

White arrows denote the first four steps; grey arrows indicate the return sequence.



The score was recorded as the time taken to complete the sequence without loss of balance or without touching the sticks; this constituted a 'successful' trial. The stopwatch started when the first foot contacts the floor in square 2 and finishes when the last foot comes back to touch the floor in square 1. The FSST is repeated twice and the best time taken used as the recorded score. Dite and Temple (2002 cited by AGILE, *n.d.*) suggest a 'cut off' of over 15 seconds as being a predictor for an individual being a potential multiple faller.

5.7 Statistical Analysis for Quantitative Findings

Descriptive statistics (numerical and categorical variables) were generated from the demographic information collected (frequencies, valid percentages, means and standard deviations (SD)). Confidence intervals (CIs) were calculated where appropriate and hypothesis tests were conducted to derive p-values. Descriptive statistics were used to consider any trend in changes to the well-being and physical outcome measurements over the 12-month testing period.

Functional outcome measures, the CORE-GP and FES-I questionnaire items were analysed inferentially. As the study was cast as a feasibility study, detection of significant effects was not expected due to the levels of powers associated with this study design. However if considering this feasibility study to be a full-scale study in miniature, tests were conducted that would be appropriate for a corresponding large-scale study. Where numbers were sufficient, confidence intervals were generated with one sample, unpaired and paired samples t-tests to assess for statistically significant differences between sub-groups in this sample and to compare to normative data values (Hinton, 2004; Norman and Streiner, 2003). It was recognised that parametric tests such as t-tests may have limited reliability in small samples so the equivalent non-parametric Mann-Whitney test was also conducted (Armitage, Berry and Matthews, 2002).

Microsoft Excel® and IBM SPSS Statistics (Version 24) were used to perform the statistical analyses.

Statistical analyses were performed to compare results at baseline and 12 months which was considered to be the primary analysis period. Interim data analysis utilising data from the 3-monthly data collection points was also conducted.

5.8 **Qualitative Methods Research Design: Semi-Structured Interview Procedure**

Participants were interviewed three times during the course of the 12-month study: initially at baseline, after 6 months and at 12-months using a semi-structured interview approach (as outlined in sections 4.4.1). The interviews were performed on the same day as, but after, the quantitative data was collected. Baseline interviews considered the participants' initial motivations to dance and explored their dance experiences across the life course, with particular consideration to the influence of dancing on their health. Subsequent interviews at 6 and 12 months considered progression in dancing, adherence and the motivations of participants to continue, or reasons for cessation and explored how the experience of involvement in ballroom dancing changed over a 12-month period (please refer to section 4.4.1 for the semi-structured interview reasoning and interview schedules in Appendix 11).

A total of 41 semi-structured interviews were performed over the 12-month study period, at baseline (n=15), 6 months (n=13) and 12 months (n=13); 31 as a dancing dyad and 10 as single participants. Interviews were recorded using a digital voice recorder and transcribed verbatim either by myself or a professional transcriber. Interview lengths ranged from 9 minutes and 53 seconds to 69 minutes and 48 seconds.

5.8.1 **The Interview Experience**

Over the course of the 3 interviews I felt I established a very good rapport with the participants, and that this relationship was heightened because they knew I shared their interest in ballroom dancing. I participated in ballroom dancing at the time of data collection, had recently attended a dance leader training course I had some first-hand insight into the aspects of the ballroom dance classes or events being discussed, and as such, this appeared to assist with an 'insider's' understanding of their stories and experiences. Participants would say phrases such as 'well *you know*, you are a dancer' when explaining a difficult step or routine or the type of experience they had had, that 'being in the moment' of the dance, I could well relate to. Skinner (2007) notes the importance of being a dancer and being involved in the dancing community for both negotiating access to participants and also to gain credibility as a researcher in the field. I felt that this assisted with forming a relationship with the participants and a trust that I would understand them, perhaps enhanced by knowing of my professional background as a physiotherapist, participants did not appear to have any concerns with discussing personal health matters.

Having worked in academia for 10 years at the time of the interviews, I felt a personal sense of enjoyment too in working with a diverse range of individuals again, of hearing their stories, listening to their experiences. For me it was a reminder of what I had missed about working in clinical practice.

Due to the low attrition rates in the study I never felt that the participants resented coming or that they considered participation a chore. In fact, they appeared to enjoy the experience; not only did they enjoy telling their story and sharing their love of dance in the interviews, but they gained confidence by knowing they could complete the physical function tests with high scores indicating low falls risks. Couples might even jokingly 'compete' against each other when performing some of the tests and I felt a genuine sense of pleasure from them *being involved* in a role in which they hoped would provide positive findings in support of an activity that had become a central part of their lives.

The interviews performed as a dancing dyad provided further insight into the dynamics of dance partnerships that might well not have been discussed in individual interviews. For example, the arguments that ensued between male and female couples when one was not performing the lead or recalling steps and routines correctly or the nuances of their relationships formed during their earlier dancing days.

As a novice interviewer in a formal research setting I did have some apprehension as to whether I would gather sufficient data to answer the research questions, how hard it would be to get people to talk about their experiences. My apprehensions were allayed once the first participants had been through the process. Whilst I had not performed many previous interviews in a research capacity, I had 'interviewed' a diverse range of individuals as a physiotherapist in practice over several years so I did consider myself to have good communication skills and I had often been complimented upon my nature and communication skills as a physiotherapist. On the whole the interviews went well. I did struggle somewhat with one interview, a single male participant who withdrew from the study prior to the 3-month data collection point. I felt it was difficult to keep a momentum to the conversation and to gain much further insight into the answers, the individual was not particularly forthcoming and it was of little surprise to me when I called to arrange the 3-month data collection point to be told that he had stopped dancing and would therefore withdraw from the study.

Gale et al's (2013) recognition of the importance of a good quality audio recording is a key aspect of any qualitative data analysis. They recommend a verbatim transcription of the

interview and this is how transcripts were typed in this research. Transcription by the researcher themselves is encouraged to allow for full immersion in the data to assist with the development of early data analysis and this is also advocated by other authors in addition to Gale et al (2013) (see Braun and Clarke, 2006; Padgett, 2012), with the recognition that the transcription process is very time consuming and professional transcribers might need to be employed for practical purposes, which occurred latterly within this study. Whilst transcribing was extremely time-consuming, it did provide the benefit of being able to listen numerous times to the interviews and really immerse myself in the data and assist with early analysis and planning for subsequent rounds of interviews (please see Appendix 12 for an excerpt of a transcribed interview). The layout of the transcripts is also considered to be important with the suggestion that large margins and sufficient line spacing is used to allow for the coding and analysis stages (Gale et al., 2013) and these points were adhered to in the format of the transcripts. In terms of the practicalities of the interview methodology, there were no technological problems with the digital voice recorder. Files were transferred onto a secure computer and then transcribed, as mentioned, either by myself or by a professional transcriber. On a few occasions participants were unable to attend data collection sessions due to illness or other unforeseen circumstances so data was collected at the next available opportunity within a couple of weeks. One of the main challenges during the last 6 months of data collection was that I was on maternity leave and subsequently had my son, but had to continue to collect data at the set time-points, meaning I was collecting data within 2 weeks of his birth and for 6 months following this. Organisation of myself, my data and my participants was particularly key at this time.

Codes were identified from each set of participant interviews and sent as a Microsoft Word® document to each participant via email or post (with a stamped address envelope for postal returns). This was for the purpose of participant 'member checking' (Creswell, 2007 p.46) a process used to enhance validation and the rigour of the study. Participants verify that the themes derived from the transcripts were a true representation of the interviews and that no misinterpretations of the participants' meanings had occurred during coding by the researcher. Participants were asked to return a brief statement via email or stamped addressed envelopes (provided if posted) to confirm their agreement with the themes. Space was also provided for any further comments or clarifications participants wished to make. The only further comments returned were stating how much they had enjoyed participating in the study. All participants agreed with the themes recorded in their individual interview sets and that the themes were an accurate representation of their discussions during the interviews.

5.9 *The Framework Analysis Approach*

FA was identified as a systematic, comprehensive and accessible approach for the analysis of the qualitative data collected in this study. Ritchie and Spencer (1994, p.175) highlight the key features of FA below in Table 5 below. Of particular benefit in this study, analysis using FA is 'driven by' the original accounts of the participants. All participants' accounts were systematically analysed, enabling comparisons and associations to be made within the sample.

Table 5 Key features of Framework Analysis

Grounded or generative	It is heavily based in, and driven by the original accounts and observations of the people it is about
Dynamic	It is open to change, addition and amendment throughout the analytic process
Systematic	It allows methodical treatment of all similar units of analysis
Comprehensive	It allows a full, and not partial or selective, review of the material collected
Enables easy retrieval	It allows access to, and retrieval of, the original textual material
Allows between- and within- case analysis	It enables comparisons between, and associations within, cases to be made
Accessible to others	The analytic process, and the interpretations derived from it, can be viewed and judged by people other than the primary analyst

FA delineates a systematic and structured process to qualitative data analysis, additionally providing a transparent and comprehensive audit trail to the original verbatim text (Ritchie and Spencer, 1994; Smith and Firth, 2011; Srivastava and Thomson, 2009). Ritchie and Spencer (1994) present a 5-stage process for data analysis as follows; familiarisation, identifying a thematic framework, indexing, charting, mapping and interpretation (Ritchie

and Spencer, 1994, p.178), although more recent developments to FA have provided some adaptations to these 5-stages. Table 6 presents a summary of 4 studies that use a 5 stage-FA (Ritchie and Spencer, 1994; Smith and Firth, 2011; Srivastava and Thomson, 2009; Ward et al., 2013) and Table 7 a summary of Gale et al's 7-stage process. Ritchie and Spencer (1994), Srivastava and Thomson (2009) and Ward et al. (2013) label each stage in the same manner, whereas Smith and Firth (2011) suggest modifications to the stages with less focus on 'familiarisation' in the first stage and moves straight into coding in stage 1.

Table 6 Framework Analysis: 5-stage process

Framework Analysis Stages					
Authors	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Ritchie and Spencer (1994)	Familiarisation through immersion in the data	Identifying a thematic framework- identify key issues, concepts, themes	Indexing- the thematic framework is systematically applied to data	Charting- data taken from original context and rearranged according to an appropriate thematic framework	Mapping and interpretation- the stage where key objectives of qualitative analysis are addressed
Srivastava and Thomson (2009)	Familiarisation through immersion in the data	Identifying a thematic framework- recognise emerging themes or issues in the data set	Indexing- identify portions or sections of data that correspond to a particular theme	Charting- arranged indexed data into charts of the themes but make sure it is clearly identified which case it is from	Mapping and interpretation- analysis of key characteristics in the charts- provide a schematic diagram of the event/ phenomena
Smith and Firth (2011)	Data management using a case and theme based approach- line by line/ phrase/ paragraph (in-vivo codes)	Coding matrix- each in-vivo code initially formed a potential category then grouped together into broader categories. Similar categories brought together to form initial themes	Coding index- Categories and themes form an initial coding index to organise data set	Development of descriptive and explanatory accounts- summarise and synthesise the range and diversity of coded data by refining themes and categories	Final conceptual framework. Explore relationship between core themes and established literature and theoretical perspectives
Ward et al. (2013)	Familiarisation through immersion in the data	Developing a theoretical framework by identifying recurrent and important themes	Indexing and pilot charting	Summarising data in analytical framework	Synthesising data by mapping and interpreting

Gale et al. (2013) consider a 7-stage process with similarities in coding stages to a Grounded Theory approach, whereby 'line by line' and 'open coding' is advocated. Their additions recognise the importance of a 'transcription' stage first of all whereby it is considered as a separate and important process. Good quality audio recordings are said to be a key aspect of qualitative data analysis and verbatim transcription of the interviews should be employed. Although not considered as an additional 'stage' within this study, these points were adhered to.

Table 7 Framework Analysis: 7-stage process (Gale et al., 2013)

Gale et al (2013) 7-stage Framework analysis process							
	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Stage 7
Gale et al (2013)	Transcription- ideally verbatim text	Familiarisation with the interview- using audio recording or transcript	Coding- 'line by line' then 'open coding'	Developing a working analytical framework- a set of codes to apply to all transcripts	Applying the analytical framework	Charting data into the framework matrix	Interpreting the data

The 5-stage process advocated for FA to structure the analysis of qualitative data (Ritchie and Spencer, 1994; Srivastava and Thomson, 2009; Ward et al., 2013) was employed in this study due to its pragmatic approach to data collection and analysis. The coding and data analysis process is outlined further in section 5.9.1, which gives further specific detail on how the stages of data collection and analysis were performed in this study.

5.9.1 Data Analysis using Framework Analysis in the present study

The 5-stage process advocated for FA to structure the analysis of qualitative data was employed in this study as below (please see Ritchie and Spencer, 1994; Srivastava and Thomson, 2009; Ward et al., 2013). Alongside the analytical framework I have provided examples of how this worked in practice or any issues or dilemmas I encountered during the data analysis process.

1. Familiarisation

Familiarisation with the data occurred by listening to all interviews again after the data collection session, and reading through each interview in full once they had been transcribed. Ritchie and Spencer (1994, p.178) describe this as 'taking stock' of the material gathered. This was particularly useful after the baseline interviews as it also helped me to reflect upon the data and formulate further interview questions for the subsequent sets of interviews at 6 and 12 months.

2. Identifying a thematic framework

Following the familiarisation stage, during this stage, I began to recognise recurrent and emerging themes within the data. Srivastava & Thomson (2009, p.76) note that whilst these themes may be emerging from 'a priori themes', the researcher must allow the data itself to 'dictate the themes and issues' rather than force the data to fit the a priori themes, although these will guide the emerging thematic framework.

3. Indexing

The coding utilised in this study employed a structured approach as suggested by Gale et al (2013), similar to that which is used in grounded theory, whereby 'line by line', 'open' and 'focused' coding stages occurred (Charmaz, 2014; Strauss and Corbin, 1998). I coded the Microsoft Word® transcripts by hand using a line by line coding approach, which initially produced 254 codes. These 254 initial codes were written onto 'post-it' notes and through an iterative process of grouping codes and considering meanings and themes, this was then reduced into 37 'open codes'. These included some 'in vivo' codes, using participants' own terms (Charmaz, 2014). During the process of indexing, this was then further reduced to 5 'focused codes'. A sample of the interviews, once open coded, were also considered by one of the research supervisors. This process of peer review can also assist with increasing the credibility and trustworthiness of the analysis and ratifying the coding process (Creswell, 2007). During this process some of the open codes were discussed and one of the titles of the key themes was amended. The coding process was managed using Microsoft Excel® and each new round of coding was filed providing an audit trail of the entire coding process. Once I had a final set of themes I began to write up the qualitative findings. During the early stage of this process there was a further refinement of the themes, as I came to realise two of the themes could be reduced to one theme; I decided 'active ageing' and 'physical health' were too similar and hence they became one final key theme of 'active ageing' since there was considerable over-lap between the quotes. Their sub-themes were also amalgamated. This refinement led to a set of 4 key emergent themes and 17 sub-themes for the final analysis (please refer to the qualitative results introductory chapter 7 for the presentation of themes).

4. Charting

Sections of verbatim text were 'charted' following the previous indexing section, into charts of the key emergent themes. Charts consisted of headings and sub-headings from the thematic framework. Care was taken to make sure data was charted and clearly identifiable as to its original case source (interview quotes are listed using the interview number/ page number/ line number within chapters 8 to 11). For this study I utilised Microsoft Excel® as a data organisation and management programme (as used by Smith and Firth, 2011 for FA).

5. Mapping and interpretation

This stage was a reflexive process of immersion in the data to consider reasons and provide explanations for the emergence of given phenomena or people's attitudes, experiences and behaviours towards social ballroom dancing. Charts were reviewed, the key themes and

background literature were considered to help address the research questions (Ritchie and Spencer, 1994) and comparisons and contrasts made with the findings from this study.

The coding process from the first stage of familiarisation of the data in each of the 41 interviews, the iterative process of further categorisation of line by line codes refined through further coding until the production of the final key themes was a fairly long process, taking around 6 months to complete. Whilst there was a considerable amount of data I did not encounter problems with its management as I decided to use manual coding methods (that I had used previously and was therefore more familiar and confident with) and utilised Microsoft Excel® to manage the data and coding process. Although the use of Computer Assisted Qualitative Data Analysis (CAQDAS) is advocated by some authors using qualitative research methods (Gibbs, 2007), Ward et al. (2013) highlight that the role of CAQDAS is primarily for the organisation of data, rather than the software being able to *interpret* data and that critical thought is still required by the researcher.

5.10 Ethical and Risk Considerations

Ethical principles from the British Psychological Society's 'Code of Ethics and Conduct' (2009) and the researcher's own professional body, the Chartered Society of Physiotherapy's (CSP) 'Code of Professional Values and Behaviour' (CSP, 2011) were considered and adhered to throughout the research process.

Ethical approval was sought and gained from the University of Huddersfield's School of Human and Health Sciences Research Ethics Panel (SREP) in June 2011. Details of the application for ethical approval including approved participant information sheets, consent forms and further information on informed consent, participants' right to withdrawal and collection and storage of data can be found in Appendices 2 to 5.

5.10.1 Consent and Right to Withdraw

Participants were only included in this study after having been made fully aware of the nature of the study, given opportunity to ask any questions about the study and after having completed informed consent forms. Participants were able to leave the study at any point without any further repercussions.

5.10.2 Confidentiality and Anonymity of Research Participants

To protect the identity of participants involved in this research, identification numbers were used during data collection and pseudonyms were used during the write-up stage.

5.10.3 **Collection and Storage of Data**

Interview and outcome measures data were stored on university password protected computer access allowed only to the author and anonymised paper-based data stored in a locked office at the University, in accordance with the University's data protection policy. The supervision team and Health Sciences department statistician had sight of this data in its anonymised form on occasions. Transcription was performed by the researcher and a professional transcriber, thus allowing the transcriber access to the audio interview files. However as all data remained anonymised and pseudonyms provided, it is thought the potential for voice recognition of audio files was minimal.

5.10.4 **Physical Outcome Measures: Risk Considerations**

The assessment of physical outcome measures might have highlighted health problems that require medical intervention. Some of the physical testing procedures carried a small risk of 'harm': for example, when balance testing participants might have been at risk of falling off the testing equipment. Therefore 'crash mats' were placed to surround the BBS and other physical outcome measure testing spaces where appropriate so that all correct safety procedures were followed for testing to minimise any risk to participants. The researcher and a clinical technician were present in the testing room at all times. If a participant felt unable to continue any of the tests on that day the tests were not be carried out, or if started, ceased immediately.

The University had designated individuals trained in first aid who were contactable in the building on the days of data collection and appropriate first aid intervention would have been sought. There might have also been a possibility of some of the dancing sessions posing a risk to participants in terms of physical injury. However, all participants were paying customers at their dance classes and would have participated in their classes at their own risk, or following the advice of or given clearance by their GP.

5.10.5 **Mental Health and Well-being Measures: Risk Considerations**

Levy (2005, cited by Dillenbeck and Hammond-Meiers, 2009, p.112) suggests that movement can initiate the recall of "memories, images and sensations that have long been buried in one's unconscious" and interviews might also raise emotions within participants during the interview process, all of which might require further care, for example, counselling in the event of a story causing recall of a distressing and hitherto repressed incident. The completion of the interviews or mental health and well-being outcome measures might have highlighted mental health related problems that required medical intervention. It was important to manage these issues with sensitivity; thus not causing

alarm to participants. In this event, participants will be advised to seek further medical advice from their general practitioners.

5.11 Chapter Summary

This chapter has outlined the qualitative and quantitative mixed methods design in this applied research study. The participants, recruitment process and 12-month data collection schedule has been presented. The utilisation of semi-structured interviews has been considered alongside the inclusion of a quantitative study of health outcome measures to offer 'complementarity' of the research findings by use of a mixed methods approach. The choice of clinical outcome measures has been considered and justified based upon the research objectives with participant demographics borne in mind. The research design and data collection protocol have been outlined. Chapter 6 will present the quantitative findings followed by the qualitative findings from Chapters 7 to 11.

Chapter 6 Quantitative Findings: Physical Assessment Outcome Measures

Chapter 6 presents the quantitative data findings for this research study using descriptive, parametric and non-parametric tests. Demographic data and physical function and mental well-being outcome measure findings are presented followed by an introductory section of discussion of the findings, prior to the integration of the quantitative and qualitative findings in the discussion in chapter 12.

6.1 Demographic Data

Twenty-six, community-dwelling older adults who participated in social ballroom dancing were recruited to the study at baseline. Three participants withdrew after the data collection at baseline and before the three month data collection session as they were no longer participating in the dancing classes. These three participants had all only recently started their dancing class and had decided not to continue with the class. Twenty-three participants completed all 5 data collection sessions at 0, 3, 6, 9 and 12 months. Seventeen of these participants (referred to henceforth as 'dancers') continued dancing throughout the 12-month study period. The remaining 6 participants (referred to as 'non-dancers') discontinued dancing at the 6-9 month period due to other life events. Participants' demographic data from baseline and follow-up questionnaires were summarised using descriptive statistics.

Socioeconomic groups were categorised using participants' postcodes according to the IMD data in Table 8 below:

Table 8 Categorisation of socioeconomic groups by IMD scores

Quintile group	IMD score range	Participants n=26	%
1	≤ 8.49 (Least deprived)	4	15.4
2	8.5 - 13.79	7	26.9
3	13.8 - 21.35	7	26.9
4	21.36 - 34.17	7	26.9
5	≥ 34.18 (Most deprived)	1	3.85

The quintile scoring from group 1 (least deprived) to group 5 (most deprived) appeared to provide an even distribution of those in groups 2-4 and, as might be expected, lower percentages in the upper and lower quintile groups.

6.1.1 Age

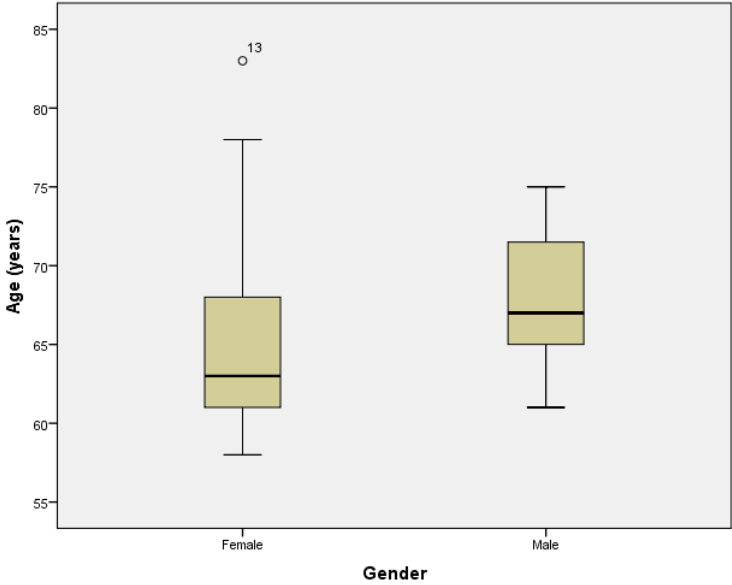
The age of all the 26 participants at baseline ranged from 58 to 83 years, with a mean age of 66.7 years (Standard Deviation (SD)=5.85). Fifty-four percent ($n=14$) were female and 46% ($n=12$) were male.

Disregarding the 3 participants who withdrew, the age of all the remaining 23 participants at baseline who completed the 12-month trial ranged from 58 to 83 years, with a mean age of 66.5 years (SD=5.96). Fifty-seven percent ($n=13$) were female and 43% ($n=10$) were male. Therefore, the three participants who withdrew from the study were typical of the group in terms of age and gender. Age statistics (presented for females and males separately) are summarised in Table 9 and Figure 6 below.

Table 9 Summary of ages of female and male participants at baseline and at 12 months

Gender	Number at baseline ($n=26$)	Mean age (SD) (years)	Age of those at baseline who completed 12 months ($n=23$)	Mean age (SD) (years)
Female	14	65.9 (7.00)	13	65.8 (7.27)
Male	12	67.8 (3.83)	10	67.4 (3.38)
All	26	66.8 (5.85)	23	66.5 (5.96)

Figure 6 Box plot for age of male and female participants



The SD for the mean age for females was greater than that for males and the females' ages were more widely spread as a consequence of them having a higher SD (Table 9). Hence the results for males might be more precise as they are a more homogenous group in age.

6.1.2 Body Mass Index (BMI)

Weight and height data were gathered to input into the BBS to calibrate the platform for each test. This data were used to calculate BMI, as an increased BMI has previously been related to a decrease in postural balance (Greve, Alonso, Bordini and Camanho, 2007).

Table 10 below summarised the BMI of all participants, partitioned by gender and where above a 'normal/ healthy' category, participants are categorised into groups of width 5kg/m².

Table 10 BMI range and frequency by gender at baseline all participants $n=26$

BMI category*	BMI range kg/m ²	Male	Female	Total
Low/ underweight	<18.5	0	0	0
Normal/ Healthy	18.5 – 24.9	5	4	9
Overweight	25- 29.9	6	7	13
Obese class I (moderate)	30- 34.9	0	0	0
Obese class II (severely obese)	35- 39.9	1	1	2
Obese class III (very severely obese)	40+	0	0	0
Missing data		0	2	2

*The HSCIC (2010, p.12)

Table 11 summarises the BMI of all 26 participants at baseline, partitioned by number of hours dancing and categorised into BMI range groups.

Table 11 BMI and frequency of dancing at baseline $n=26$

BMI range	Number of participants	
	1 hour	2 hours
Normal/ Healthy	8	1
Overweight	12	1
Moderately obese	0	0
Severely obese	1	1
Very severely Obese	0	0
Missing data	2	0
Total participants	23	3

This sample shows a representative spread of BMI readings, with the majority of participants ($n=22$) in the normal/ healthy or overweight range. However, the findings span a wide range of values, including two participants with high, 'severely obese' values.

The demographic data presented above do not provide any evidence that this is an atypical sample and might therefore be considered a sample fairly representative of the general population, although their obesity levels are slightly lower.

6.2 *Potential Confounding Variables*

During each of the five visits, a follow-up questionnaire was completed by participants to monitor falls since baseline, changes to medications, changes to the number of hours spent dancing or any other additional exercise sessions introduced. These were considered to be variables that might have an effect on the outcomes and were therefore monitored at each three-month interval.

As the following will present changes to possible variables over the course of the 12-month study, only the 23 participants who completed all data collection points of the study were considered, unless otherwise stated.

At baseline, five of the 23 participants (22%) reported a previous fall. During the course of the study, an additional 8 falls were reported in 6 participants, with participants 1 and 21 both having two falls within the 12-month period. Two of the other falls in participants 18 and 21 were related to bad weather conditions and falling in snow and ice outdoors.

Twenty-one of the 23 participants (91%) were taking regular medication for pre-existing conditions. This did not change over the 12-month study. The two participants at baseline who were not taking medications were still not taking medications at the 12-month follow up.

Twenty of the 23 participants reported being involved in another form of exercise at baseline. The three participants who did not participate in other forms of exercise did not start any new form of exercise during the course of the study. Other exercise included activities such as gym sessions and exercise classes, cardiac rehabilitation classes, walking, swimming, Zumba classes and golf. Four of the 20 participants also reported starting additional exercise classes during the course of the trial.

With regard to the time spent dancing, as shown in Table 12 below, the hours per week spent dancing at baseline ranged from 1 to 2 hours and at 12-months it was 0 to 2 hours,

with some participants having ceased dancing classes mainly due to other life events or health problems.

Table 12 Time spent dancing per week at data collection points between baseline and 12-months in all completing participants.

Analysis time point (<i>n</i> =23)	Time dancing per week (hours) (mean (SD))
Baseline	1.15 (0.33)
3 months	1.30 (0.46)
6 months	0.96 (0.80)
9 months	1.13 (0.90)
12 months	1.17 (0.82)

The SD between baseline (0.33 hours) and 12 months (0.82 hours) shows that the variation in time spent dancing widened over time. Further calculations were conducted for those participants who continued dancing over the course of the 12 months (*n*=17). These figures are presented in Table 13 below.

Table 13 Time spent dancing in hours per week by participants who continued dancing for 12 months (*n*=17)

Analysis time point (<i>n</i> =23)	Time dancing per week (hours) (mean (SD))
Baseline	1.18 (0.37)
3 months	1.41 (0.48)
6 months	1.29 (0.65)
9 months	1.53 (0.68)
12 months	1.59 (0.48)

Of the 17 participants who continued dancing throughout the course of the study, although the mean time spent dancing did increase between baseline and 12 months, the trend was not monotonic with a decline at the 6-month stage.

Of the 23 participants who completed all 5 data collection points, 20 danced for one hour at baseline but 6 of these participants had stopped dancing by 12-months (0 hours). Ten participants were dancing for 2 hours at 12 months compared to 3 at baseline, thus 7

increasing their dancing hours over the study period. Seven participants remained dancing for 1 hour from baseline to 12-months.

In summary, there appeared to be no dramatic changes to the variables considered at the 3-monthly data collection points. During the course of the study 6 of the 23 (26%) of the participants reported 1 or 2 falls. The 21 participants (91%) who were taking medication continued to do so and the 3 participants who were inactive other than dancing did not take up any other forms of physical activity, but 4 of the other participants did. There was also an increase in the amount of hours spent dancing by some of the participants who continued to dance over the entire course of the study (mean at baseline of 1.18 to 1.59 hours at 12-months).

6.3 **Outcome Measures**

The purpose of using outcome measures within this study was to attempt to address two of the research questions, namely:

- Does social ballroom dancing influence balance and functional activity outcome measures for older adults?
- Does social ballroom dancing influence psychological well-being for older adults?

6.3.1 **Clinical Outcomes Routine Evaluation-General Population (CORE-GP) measure**

During the 5 data collection opportunities for all 23 completing participants and the 3 additional participants at baseline (total $n=118$), the range of scores for the CORE-GP was 0-24 points, indicating at worst, 'low level distress'. Low level distress was indicated on only 3 of these 118 occasions (2.54%) and 'healthy' values were recorded on 115/118 occasions (97.5%).

Mean (and SD) CORE-GP scores were calculated at each 3-month period for the 23 participants who completed all 5 sets of data collection. Mean scores for the 23 participants at each stage were always less than 10, indicating a 'healthy' range (CORE-IMS, 2014). Table 14 below shows the CORE-GP scores for all completing participants ($n=23$) at each data collection point.

Table 14 CORE-GP scores at 3-month intervals all completing participants (*n*=23)

Analysis time point (<i>n</i> =23)	CORE-GP scores (mean (SD))
Baseline	7.5 (5.1)
3 months	8.1 (6.3)
6 months	6.9 (4.7)
9 months	6.8 (5.0)
12 months	5.0 (3.7)

Table 15 below shows comparable CORE-GP scores for the subset of dancers who completed the full data collection period (*n*=17).

Table 15 CORE-GP scores at 3-month intervals all completing dancers (*n*=17)

Analysis time point (<i>n</i> =17)	CORE-GP scores points (mean (SD))
Baseline	6.5 (3.4)
3 months	7.1 (5.3)
6 months	7.0 (4.5)
9 months	6.7 (5.5)
12 months	4.9 (3.8)

Figure 7 below shows the mean CORE-GP scores and confidence intervals for the 23 completing participants at 3 month intervals over the 12 month data collection period.

Figure 7 Mean CORE-GP scores plus confidence intervals (CI) for all completing participants (n=23) at 3-month intervals

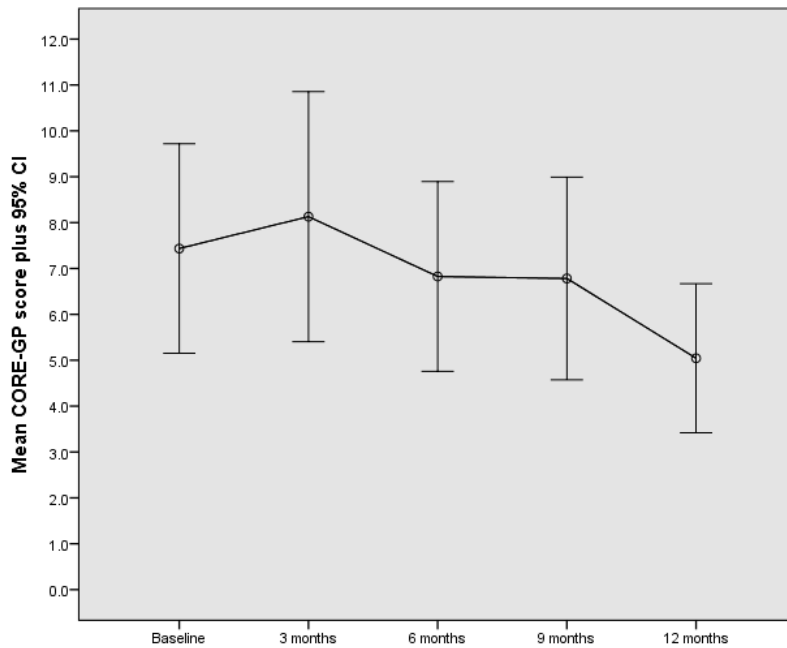


Figure 7 demonstrates there is an overall non-monotonic trend of a reduction in scores with time, thus indicating improvements in mean CORE-GP scores; however, due to the small sample size, the width of the uncertainty intervals in relation to the between-time points estimates is large.

Table 16 shows the comparison of mean CORE-GP scores in all participants over 12 months and comparable scores for the subsets of those who remained dancing at 12 months (n=17) and those who had ceased dancing at 12 months (n=6).

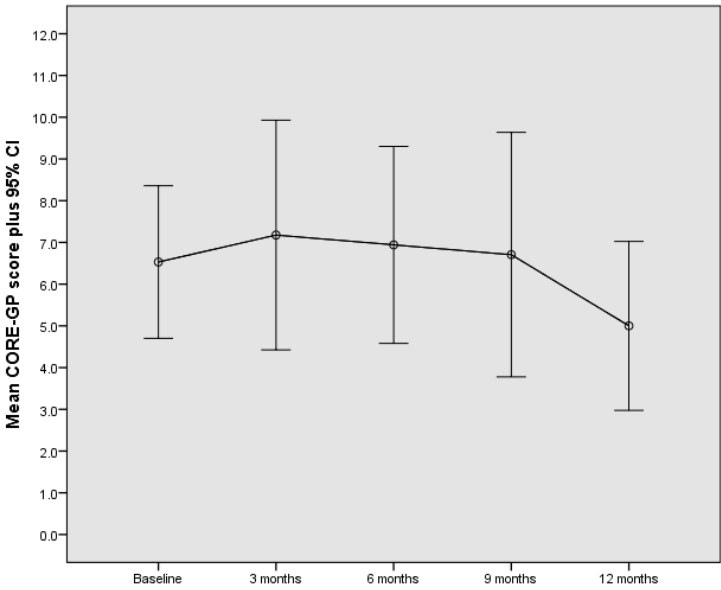
Table 16 Comparison of mean CORE-GP scores in dancers and non-dancers over 12- months

CORE-GP points score	All participants completing the trial (all $n=23$)	Dancers at 12 months ($n=17$)	Non-dancers at 12 months ($n=6$)
Mean	6.9	6.5	8.0
SD	5.1	4.7	6.1

Non-dancers at 12 months are defined as being those participants who during the course of the trial discontinued their dancing classes.

Figure 8 below shows the CORE-GP scores and confidence intervals for all dancing participants at 12 months ($n=17$) at each of the 3 monthly data collection points.

Figure 8 CORE-GP Mean scores CI at each data collection point for the participants still dancing at 12 months ($n=17$)



As with Figure 7, Figure 8 also demonstrates there is an almost static but overall non-monotonic trend of a reduction in mean CORE-GP scores with time, again indicating an improvement in well-being scores but the width of the uncertainty intervals in relation to the between-time points estimates remains fairly large. Hence, it is difficult to state with certainty that a substantive 'downward' trend exists, although it looks likely.

A paired samples t-test was conducted on the scores at baseline and 12 months to investigate the significance of the difference in scores. These time points are of primary interest because of the non-monotonic nature of the decreasing scores trend between 0 and 12 months.

Mean baseline scores for the CORE-GP for the completing dancers were 6.5 (SD=3.4) and at 12-months 4.9 (SD=3.8). The difference between mean scores at baseline and mean scores at 12 months was 1.60 (SD=3.42). There was no evidence of a significant difference (at the 5% significance level) in CORE-GP scores between baseline and 12-month readings ($p=0.07$; 95% confidence interval for the difference (-0.17, 3.36)). However, a p -value of 0.07 is close to the critical value of 0.05 and suggests an effect of substantive importance that might indicate a fairly strong intervention effect in a small-scale feasibility study which was not designed to be powered to detect significant effects.

6.3.2 Falls Efficacy Scale-International (FES-I)

The FES-I is a measure that assesses 'concern' of the fear of falling in older adults (Yardley et al, 2005). It is a 16-item questionnaire, with a minimum score of 16 (no concern of falling) and a maximum score of 64 (very concerned about falling) (AGILE, *n.d.*). The higher scores are associated with an increased fear of falling and fear-avoidance behaviour (Kempen et al., 2008). In this study it was self-completed by all participants.

Data were considered for the 23 participants who completed all five rounds of data collection of the FES-I. The range in all participants was 16 to 35 with a mean score of 19.6 (SD=3.5). A comparison of mean scores was calculated between the periods during which some participants remained dancing compared to when some participants self-reported they were not dancing (for example due to illness or injury). The mean score for the FES-I during periods in which participants were dancing was 18.82 (SD=3.52) and the mean FES-I scores during non-dancing periods was 20.75 (SD=4.10). The difference of 2.0 points recorded between dancing periods and non-dancing periods is small in magnitude compared with mean scores. Nonetheless it is a 10% decrease in a clinical score which, whilst appearing to perhaps be a small and unimportant difference, could be an important *clinical* significance. The proportion of people who stopped dancing for a period, compared to those who continued, was too low to perform a formal statistical test of significance.

6.3.3 Timed Up and Go Test (TUGT)

The mean scores for the TUGT are almost within the normative values (see Table 17 below). There are no validated normative data for the two participants who were 58 and 59 years of

age upon entry into the study. In the 60-69 age group the normative time is 8.1 seconds and in this study mean data was 8.27 seconds (SD=1.17). In the 70-79 age group the mean was 9.38 seconds (SD=1.30) whereas the normative value was 9.2 seconds. In the 80-89 age group there was only one participant and their score was 11.37 seconds compared to the normative 12.6 seconds.

Table 17 below shows the results for the TUGT with the frequency of participants in each age range and the mean scores compared to the normative scores in seconds. As can be seen the normative scores are only provided as single times, not within a range of times. Mean scores and SD are calculated from participant scores at all 5 data collection time points.

Table 17 Frequency of participants in each age range with mean and standard deviations (n=23).

Age range	Number	Mean (s)	SD (s)	Normative (seconds)
50-59	2	7.72	1.06	No validated data
60-69	15	8.27	1.17	8.1
70-79	5	9.38	1.30	9.2
80-89	1	11.37	n/a	12.6

All average scores are under 12 seconds; therefore, it is suggested that all participants within this study displayed 'normal' mobility (AGILE, *n.d.*). In addition, 87% of participants (*n*=20) showed a decrease in their scores between baseline and 12 months.

6.3.4 Performance Orientated Assessment of Mobility (POAM) or 'Tinetti's' Test

All participants at all five 3-monthly points of data collection scored a range of 25-28 points and therefore would be considered 'low risk' for falls according to this test. There was no difference between those who withdrew and the continuing participants. This test was not sensitive enough to assess for falls risk in this sample since there was no differentiation between levels of risk. As the POAM did not adequately distinguish between participants it was not possible to perform and hypothesis tests on the data. Indeed, 6 participants categorised as 'low risk' did fall during the course of the year. However, it may be argued

the POAM test could be used as a tool to assess for general inclusion criteria in studies requiring participants to be at low risk of falls.

6.3.5 Four Square Step Test (FSST)

There were no consistent trends with increasing, decreasing or static scores for the FSST over the 5 points of data collection. When considering the times for all participants, including those who only attended for the first data collection ($n=26$) before withdrawing from the study ($n=118$ test scores), 117 of the 118 scores were below the 15 second cut-off point. Only one score for one participant was over at 16.54 seconds. When the mean data for each of the 23 completing participants were considered, the range of scores were from 6.6 to 13.4 seconds, with a mean of 10.0 seconds ($SD=1.7$ seconds). As the mean scores were all under 15 seconds, the participants were considered to be 'non-multiple fallers' (AGILE, *n.d.*). Whilst this test might be a useful baseline measure for inclusion criteria and not putting people at further risk during a study, it also did not appear to be sufficiently sensitive to this group as none of the participants who fell during the course of the study were highlighted as being in an 'at risk' group.

6.3.6 Functional Reach Test (FR Test)

The Functional Reach Test (FR test) was used as a measure of dynamic postural control and is supported by Giorgetti, Harris and Jette (1998) as a reliable measure of balance in disabled and non-disabled older people. Duncan et al. (1992, cited by AGILE, *n.d.*) provide an interpretation of results as demonstrated in Table 18 below. Data were considered for the 23 participants who completed the trial. There were no obvious trends within the data as scores varied throughout the data collection period, therefore data is considered at baseline and 12-months to consider the magnitude of any overall effect. The mean scores and standard deviations for the FR test were calculated for each of the 23 completing participants from all 5 data collection sessions. The test has been validated using imperial measurements, but for ease of data collection, measurements were recorded in metric (cm/mm) and converted to inches.

Table 18 Functional Reach interpretation of results and frequency of mean scores in each category (*n*=17 dancers v *n*=6 non-dancers)

Distance reached in inches	Relative risk for falls	Frequency in dancers at 12 months	Frequency in non-dancers at 12 months	Total
Unwilling or unable to reach	8 x more likely to fall	0	0	0
1-6 inches (2.54-15.24 cm)	4 x more likely to fall	1	0	1
6-10 inches (15.3-25.4 cm)	2 x more likely to fall	0	0	0
Over 10 inches (> 25.4 cm)	Not likely to fall	16	6	22

Of these 23 participants, 14 had consistently scored over 25.4 cm (10 inches; 4 of whom had stopped dancing by 6-months). Nine participants had scores below 25.4 cm on one or more occasions. One participant scored less than 25.4 cm on all occasions; this was a participant who found the test difficult due to chronic back pain. Twenty-two of the 23 participants had mean scores of over 25.4 cm, with a range of 25.9 to 44.1 cm and a mean of 31.5 cm (SD=4.4 cm). The one participant who scored under 15.5 cm (mean 13.1 cm, SD=1.7 cm) was in the '4 x more likely to fall' category, however, she did not fall during the data collection period, nor had she reported a fall prior to recruitment into the study. Six participants who were in the 'not likely to fall category' reported 8 falls during the data collection period. Therefore this test had limited predictive value in this study as it did not discriminate between the participants.

6.4 **The Biodex Balance System Measurements**

6.4.1 **Falls Risk Test**

To identify potential fallers, the BBS Falls Risk test was utilised. An individual's Overall Stability Index (OSI) results were compared to age-dependent normative data, with scores higher than normative values being suggestive of deficiencies in strength, proprioception, vestibular or vision and therefore, individuals being at risk of falls (Biodex, *n.d.* b).

Normative values for the falls risk OSI for individuals aged 54-71 years of age were 2.3 (SD=1.4) and for those aged 72 to 89 were 3.0 (SD=1.0) (see Table 19 below; Biodex, *n.d.* b). Considering each set of data for all participants ($n=26$ at baseline and $n=23$ from 3 to 12 months) at each of the 5 data collection stages ($n=118$ sets of data) the mean score for the 54-71 year-old age group was 1.3 (SD=0.5) and the mean score for the 72-89 year-old age group was 1.8 (SD=1.0).

The mean range of OSI scores in all 26 participants was from 0.56 to 3.22. Three participants scored a mean result above the normative data mean for their age group; however, their means were all within the normative data default range. They were also individuals with pre-existing medical conditions that might have had an impact upon their ability to perform the tests during a particular testing period.

Table 19 Mean Falls Risk Test OSI results from all 5 data collection points

Age Group	Normative data default range	Normative Data Mean (SD)	Study results Mean (SD)
Age 54 – 71	0.9 – 3.7	2.3 (1.4)	1.3 (0.5)
Age 72 – 89	2.0 – 4.0	3.0 (1.0)	1.8 (1.0)

Between testing at baseline and 12 months, there was no consistent increase or decrease in the falls risk OSI scores.

A 1-sample t-test was performed on the 54-71 year old age group ($n=20$) to assess for significant differences between the test results and normative data values.

The mean score for the Falls Risk OSI Test in the 54-71 age-group was 1.30 with a normative test value of 2.3. The mean difference between the observed and normative values was 0.99 (95% CI (0.74, 1.24)) with a p -value of <0.001 ; therefore the data mean is significantly different from the normative value of 2.3.

In the 72-89 year old age group ($n=6$), the mean falls risk OSI test score was 1.86 ($SD=0.93$), compared to the normative score of 3.0 ($p=0.030$). The mean difference between the observed and normative values was 1.14 (95% CI (0.165- 2.12)).

Hence there is evidence that the participants in this sample had a statistically significant better balance and hence significantly lower risk of falls than the corresponding parent population. This magnitude of the effect detected is reflected by the small size of the sub-group (6 participants) in which it was detected.

6.4.2 Postural Stability Test (PST)

In this study, the majority of participants were tested at a mid-range stability platform level of 6. Three male participants were unable to manage this level and were tested at level 10 or 12 instead (an increasingly stable platform). OSI scores ranged from 0.54 to 3.4.

Participants 5, 8 and 21 were all male and had scored means above the age-related mean stability index for their age group in the falls risk test, indicating poorer levels of balance. For the purposes of analysis, mean scores for the PSTs were only considered for participants who were able to complete the tests on platform level 6 and who completed the 12-month study (13 female and 8 male). Overall the mean OSI score for both males and females ($n=21$) was 1.09 ($SD=0.56$). The mean score (SD) was 0.91 (0.33) for females ($n=13$) and 1.38 (0.53) for males ($n=8$).

An independent samples t-test was conducted to compare mean OSI scores in male and female participants in the PST and to assess for statistical significant differences between the male and female population means.

The mean female OSI Level 6 score was 0.91 (SD 0.33). The mean male OSI Level 6 score was 1.38 (SD 0.53). Hence the male-female difference was 0.47. Levene's test (Armitage et al., 2002) indicated no evidence for unequal variances in the male and female data. An independent samples t-test conducted on the data indicated the female-male difference to be significant ($t_{19}=-2.51$; $p=0.021$; 95% CI (0.079- 0.86)).

The t-test performed was based on 13 female and 8 male participants (21 in total). Recognising that parametric tests such as t-tests may have limited reliability in small samples, a corresponding non-parametric comparison test, a Mann-Whitney test, conducted on the same data revealed a p-value of similar magnitude ($p=0.012$) leading to a similar

inference; suggesting that the small sample size did not unduly affect the inferences of the t-test. Therefore, results indicate there was a statistically significant difference between the males and females, with females displaying a significantly better level of OSI scores in the PST.

6.4.3 Limits of Stability (LOS) Test

The LOS test was performed at a moderate skill level of 75% of the limit of stability on a platform setting of 6 (the range is 1-12; hence this is a mid-range stability setting) for all but 2 of the participants. One participant (participant number 5) found the test extremely difficult at the first attempt, so for reasons of safety and to avoid exacerbation of pre-existing conditions, the LOS was not performed with this participant. Participant number 21 also had some difficulty due to pre-existing conditions and so the platform was placed on an easy skill level platform of 'static'. Participants 13, 15 and 20 also had problems with the tests at times due to pre-existing conditions (for example knee pain) and were unable to complete the test on occasions.

During the 118 possible data collection sessions, there were 14 occasions when the LOS test could not be completed by participants for reasons of health and safety. The results for participant 5 and 21 were excluded from the mean calculations given they were not at the same platform stability level. The mean overall direction control score for the LOS test was 29.13 (SD=12.36) with a range of 9-66 for the participants who completed tests at platform stability level 6.

Table 20 below includes 21 participants who completed the twelve months and were able to perform the LST at level 6 during the 5 data sets and shows the limits of stability scores by gender and Table 21 the t-test for equity of means for the LST.

Table 20 Group Statistics Limits of Stability Scores by Gender

	Gender	N	Mean	Std. Deviation
Average limit of stability	Female	13	33.4	10.4
	Male	8	22.5	6.34

Table 21 t-test for Equality of Means for the Limits of Stability Test

t-test for Equality of Means			
<i>p</i> -value	Mean Difference	95% Confidence Interval of the Difference	
		Lower	Upper
0.015	10.9	2.35	19.5

As for the testing of the limits of stability test measure and gender, parallel parametric t-tests and non-parametric Mann-Whitney tests were conducted (Armitage et al., 2002). For the t-test, Levene’s preliminary test indicated that quality of variances could be assumed. Under this assumption, the t-test revealed a significant difference of 10.9 ($p=0.015$; 95% CI 2.35, 19.5). The width of the confidence interval reflects the small sample size. Hence although women appear to have a significantly better LST score than men, the imprecision associated with the effect size is quite large.

The mean rank figures from the Mann-Whitney test indicate that women ($n=13$) had a higher mean rank (13.46) compared to men ($n=8$; mean rank=7.00). In the LST, a higher score indicates a better level of balance. The Mann-Whitney tests using two independent samples, men versus women, found a significance value of $p=0.020$, which is similar to the p -value obtained from the t-test above; leading to a similar inference: that is, that the small sample sizes did not unduly affect the inferences of the test. In this sample, women had a statistically significant better LST balance score than men.

6.5 **Summary of Outcome Measures**

The quantitative element of this study was performed in the context of a feasibility study and thus not powered to detect significant effects. Therefore significant differences were not particularly expected due to the small sample size. Nonetheless, some significant effects were observed; alongside effects which did not reach significance at standard significance levels but appeared to be of some substantive importance. Tests were performed to potentially identify 'promising' effects even in small sample sizes and have demonstrated that the data is amenable to the form of testing if repeated in future, larger scale studies. The emphasis of the t-tests and Mann-Whitney test in this instance was primarily on the determination of the magnitude of the effects, in this case between the baseline and 12-month scores.

6.5.1 **Demographics**

Participants' addresses were recorded to allow for ease of correspondence for arranging data collection appointments. This included the recording of postcodes, which allowed for IMD scores to be calculated. The IMD social group quintiles were not an atypical spread of scores, with groups 2 to 4 evenly represented and the higher and lower quintiles including lower number of participants. This demonstrated that social ballroom dancing was enjoyed as an activity across social groups.

6.5.1.1 **Singles and Couples**

Of the 26 participants who started the trial at baseline, 20 participants who were part of a 'couple', either married or life partners were involved; and 6 were single participants. Of the 23 participants who completed the 12-month study, 18 were either married or life partners dancing together and 5 were single. The original intention was to include adults over the age of 60 and indeed this was explained on the study information sheet; however, 2 female participants, aged 58 and 59 at the start of the study were also included as both were retired, attended the local dance classes and one was the female life partner of an older male participant.

On occasions, this had implications for one of a pair not being able to dance, for example, when one individual did not want to go to the dancing lessons, or was recovering from a minor operation, their partner felt unable to go alone, thus impacting upon the amount of dancing *both* individuals were participating in. Ballroom dancing was often an activity that was dependent upon both individuals in a partnership participating. Only one individual, participant 10, was married but attended the dancing classes without her husband as it was

not an activity in which he had any interest in participating. This is a theme that is explored further in the qualitative analysis chapter. However, it is worth noting that for those in couples, if one individual is unwilling or unable to dance, the other partner often will not attend dancing classes, so the opportunity to change and improve upon their test scores might well be dependent upon a partner attending the dance classes too and this is another variable worth consideration when analysing the quantitative results.

6.5.1.2 BMI

With regards to BMI, the majority of participants ($n=22$, 84.6%) were in the normal/healthy and overweight categories with a BMI of less than 29.9 kg/m², rather than obese categories. It might be suggested that higher levels of BMI within the obese categories could have been restricting people's dancing, because the proportions represented in this small sample were not in common with those figures suggested for the general population, where there are adult obesity levels of around 24.8% in England (Public Health England, 2015), as only 8% of adults in this trial were in an obese category. Aydoğ et al. (2005) note that in individuals with Rheumatoid Arthritis, age and BMI were the most important factors affecting postural dynamic balance. Furthermore, Greve et al. (2007) have previously found a link between increased BMI and reduced postural balance in adults with a BMI greater than 30 kg/m². Calculations for this were not performed within this sample population as there were only 2 participants with a BMI over 30 kg/m².

6.5.1.3 Potential confounding variables

In terms of the potential confounding variables data were considered for the 23 completing participants over the course of the 12 months. At baseline 5 of the 23 participants had reported having a previous fall with a further 8 falls reported in 6 participants over the course of the study. Twenty-one participants (91%) were taking regular medication. This is higher than previously reported figures for the incidence of medication use by older adults in the UK, whereby 75% of 65-74 year olds and 84% of those aged 75 plus were taking regular medication (Chen, Dewey and Avery, 2001).

Twenty of the 23 participants (87.0%) reported being involved in other forms of exercise at the start of the trial although participation in these other exercises was generally not as regularly attended as the weekly ballroom dancing. It appears by nature, those attending dancing classes were more likely to be more active older adults, with lower levels of BMI as their levels of participation in physical activity were greater than those previously reported by Flynn and Stewart (2013) who suggested only 13% of 65-74 year olds and 6% of over

75 year olds participate in vigorous physical activity, with ballroom dancing previously being classified as such (Blanksby and Reidy, 1988; Lima and Vieira, 2007).

Three of the 26 participants at baseline ceased dancing before the 3-month data collection session and hence withdrew from the study. Of the remaining 23, 17 continued dancing consistently for the 12 month period. Six participants, consisting of 3 couples, had ceased dancing completely by the 12 month period due to illness (worsening Chronic Obstructive Pulmonary Disease COPD) or injury (dislocated shoulder) in one of the pair, or lack of perceived time, hence relating to the points raised above that if one individual is unable or unwilling to attend dancing classes, the other individual will also not attend. Although there was a slight increase in the mean time spent dancing over the course of the study in the 17 participants who continued to dance throughout the 12 months from 1.18 hours (SD=0.37) at baseline to 1.59 hours (SD=0.48) at 12 months, the small sample size and decline in time spent dancing at 6-months (to a mean of 1.29 hours (SD=0.65)) means this should be considered with some caution. The reasons for the decline in dancing at 6-months appear to be seasonal, with the 6-month point either falling in the summer, when participants were on holiday or looking after grandchildren during the school holidays, or winter when bad weather caused participants to miss the dancing classes.

6.5.2 Analysis of Well-being Outcome Measures

For the CORE-GP test, 97.5% of participant scores were within a 'healthy' mental well-being range. Three of the possible 118 scores were between 21 and 33, indicating a 'low level distress'. These were scored by participant 21 on two separate occasions and 3 on one occasion and could be explained by some of the other life events, namely health concerns that were having an impact upon the individuals at the time of data collection. The mean scores for all participants at each testing period were always less than 10, indicating a 'healthy' range of well-being throughout the study. The paired samples t-test showed there were no significant differences between CORE-GP scores at baseline and at 12-months ($p=0.07$; 95% confidence interval for the difference (-0.17, 3.36)). This is likely to be because the sample population were generally already in a 'healthy' range of well-being at baseline and no participants were diagnosed with a mental health condition. Also, as mentioned above, as a feasibility study the population was not powered to detect significant changes and significant differences were not really expected.

The FES-I questionnaire results also produced unremarkable quantitative findings although this might just be an artefact of the small sample size. The range of FES-I scores for all participants was 16 to 35 (maximum possible score being 64) with a mean score of 19.6

(SD=3.5). Some of the higher scores appeared to be seasonal, in that participants were more concerned about walking outside during the heavy snow and ice periods that occurred during the course of the study and this did coincide with higher scores for certain individuals. However, possibly of note is the reduction of the mean FES-I scores between periods of dancing (18.82 (SD=3.52)) versus periods when individuals were not dancing (20.75 SD=4.10)). This difference of a 1.93 point reduction is almost a reduction in FES-I scores of 10%, which may be of *clinical* significance and benefit although the sample population was too small to perform tests for statistical significance on this occasion.

Overall there were no significant findings or changes over the 12-month study period in either the CORE-GP or FES-I outcome measures, indicating that this sample had a 'healthy' outcome for well-being and low anxiety for fear of falling.

6.5.3 Analysis of Balance Outcome Measures

The TUGT, FSST, Functional Reach Test and POAM test have all been validated previously as suitable functional outcome measures to predict falls in community dwelling older adults (AGILE, *n.d.*). In this sample, the tests had limited predictive value for falls, since the six participants who did fall were deemed to be in the lowest risk groups for falls for these tests and only 1 participant out of 23, who had no history of falls by the end of the 12-month study, was placed in a '4 times more likely to fall' risk group as a result of performing the functional reach test (see section 6.3.3 to section 6.3.6 for data summaries). Therefore, these tests were unable to discriminate between the participants in this sample. However, since they are previously validated and commonly used measures in clinical practice, it is suggested they are of some worth in terms of ethical practice value; that is they might be used as a baseline 'family of outcome' tests to illustrate homogeneity within a sample and be used to demonstrate the participants' risk levels for inclusion in a study. The issue of sensitivity does create a wider issue of the use of outcome measures in clinical practice in terms of cost-effectiveness. Indeed, Oliver et al. (2008, p.626) note that one should be cautious at the use of falls risk prediction tools and clinicians should not be "seduced by the attractiveness of an 'off the shelf' solution to the problem of falls" and they suggest that the most successful falls risk programmes involve post-fall assessment and treatment plans rather than the use of falls-risk indicators. Perera, Mody, Woodman and Studenski (2006) also question what constitutes clinically meaningful change in the field of clinical geriatrics. They argue if this was known, it would be useful to plan, evaluate and compare treatment interventions that use outcome measures and that this information could be used to form power calculations for sample sizes in research trials. This point might have had an impact

upon this study; if clinically meaningful change parameters were known, power calculations might have been made to formulate an ideal sample size for this study. In addition, it is of note that the normative data scores for the TUGT are single figures and not a range of 'normative' figures, thus meaning it is harder to interpret the findings for individuals who lie even 0.1 seconds either side of the normative scores.

6.5.4 **Biodex Balance System Measures**

There is a paucity of evidence for normative data for the BBS machine. That which does exist has often been performed in small numbers of younger participants; for example Akbari, Karimi, Farahini and Faghihzadeh's (2006) study of 30 symptomatic male athletes, aged 20 to 35 with ankle sprains, Testerman and Griend's (1999, cited by Aydoğ et al., 2005) study of 10 individuals under 30 years of age with ankle sprains and Aydoğ et al's (2005) evaluation of dynamic postural balance using the BBS with participants with Rheumatoid Arthritis. Whilst the Biodex manual provides normative mean and ranges for data for the falls risk test, at present there are no standard guidelines for other tests, other than suggesting that it in terms of a person's overall stability, proprioception and dynamic balance, it is better to have a lower overall stability index (OSI) is (Biodex, *n.d.* b).

During each set of tests in this trial, three measurements were recorded. Means of each index were generated to provide indices for the OSI, MLSI and APSI. Testerman and Griend (1999, cited by Aydoğ et al., 2005, p.463) and Schmitz and Arnold (1998) suggest that the OSI score is the best indicator of an individual's overall stability on the BBS. Cachupe, Shifflett, Kahanov and Wughalter (2001) support this by suggesting that the OSI has comparable or better reliability than the APSI or MLSI. Therefore, the OSI measurement was the main measurement considered from the outcome measurements recorded.

The normative data for the Falls Risk Test (see Table 17) was tested at a level of 12-8 on the platform settings. Finn et al's study (*n.d.*, cited by Biodex, *n.d.* b, p.3-8) of 200 participants (106 males and 94 females) aged between 18 and 89 years-old, provides slightly different mean data for the OSIs at a stability level of 8. In 54-71 year-olds, the mean OSI was 2.57 (SD=0.78) and in 72-89 year olds it was 2.70 (SD=0.80). In this trial, the platform was set at 6-2 for the majority of participants; therefore, this trial's settings required a greater skill level. However, the mean OSI score for participants was lower at 1.3 (SD=0.5) for 54-71 year olds, and 1.8 (SD=1.0) for 72-89 year olds). This indicates a statistically significant better stability index than those suggested for these age groups in the general population by either Biodex (*n.d.* a and *n.d.* b) or Finn et al (*n.d.* cited by

Biodex, *n.d.*) with mean differences between the observed and normative values in this study being 0.99 with a p -value of ≤ 0.001 for the 54-71 age group and 1.14 with a p -value of 0.030 for the 72-89 age group.

The LOS test was performed at a moderate skill, mid-range platform stability level setting of 6 for 21 of the 23 participants who were able to perform the test. The mean overall direction control score at level 6 for the LOS test was 29.13 (SD=12.4) with a range of 9-66. The 'goal' for this test is set at >65 but in the 104 tests that were considered, only one participant scored 66 or more. Whilst between baseline and 12 months there tended to be a general increase in scores, hence a move towards better balance, the intermittent 3, 6 and 9 month tests proved to be inconsistent and variable and therefore it is difficult to suggest with any certainty that there was a true or consistent increase in scores. However, a significant gender effect was found when performing a t-test: women displayed better LOS balance than men (Mean scores 33.4 (SD=10.4) and 22.5 (SD=6.34) for women and men respectively ($p=0.015$; CI: 2.35, 19.5). As this significance was obtained from a small sample it appears to indicate a gender effect of large magnitude.

This finding was also replicated in the PST. Aydoğ et al. (2005) highlight that studies have shown that 'healthy' men have poorer balance than healthy women and this is supported by Finn et al. (*n.d.* b. p ,3-8, cited by Biodex, *n.d.* a) who reported a significant difference between OSIs for males and females in their study of 200 participants, with men demonstrating a mean OSI of 2.70 (SD=0.08) and females 1.94 (SD=0.80). This study concurs with Aydoğ et al. (2005) and Finn et al. (*n.d.*, cited by Biodex, *n.d.* a) as the PST results found a statistically significant difference between the OSI results for females versus males.

Since commencing this trial, further updated guidelines have been included in the BBS user's manual suggesting reliability levels of certain platform stability settings (Lephart, Pincivero and Henry, *n.d.*, cited by Biodex, *n.d.* a). These guidelines suggest on a bilateral stance platform level setting of 8, that two test trials are performed for participants to familiarise themselves with the BBS and that after this, all data can be assumed reliable (Lephart et al., *n.d.*, cited by Biodex, *n.d.* a). However, their study was only performed using 10 university-aged students and on one platform setting. Whilst there might have been a learning effect involved in this study, the tests were performed using the default 3 attempts settings for each of the balance tests performed and the authors suggest any more than 3 attempts at each test would have led to results being affected by elements of fatigue, given the age of participants and their subjective feedback that it was not an easy

test to perform. In addition, the platform stability settings were considered after the pilot study and after discussions with the clinical technician staff it was decided to use a mid-range setting of 6. A higher setting might have been easier for participants and produced different results, however, OSI scores in this participant sample were better than those suggested in the normative data on the more difficult settings used within this study.

6.6 **Chapter Summary**

Over the 12-month study, there were no clear changes in the balance and functional outcome measures for the POAM, TUGT, Functional Reach Test or FSST; that is there were no clear increased, decreased or static scores for each of the tests.

There were no obvious trends in decline or improvements and it could be argued this indicates that the sample may have been too small or too diverse for any effect to rise above the underlying background 'noise' or that there is a problem with the use of outcome measures in practice. Overall participants were found to be performing tests to higher levels of function thus a ceiling effect was evident with scores. For these 4 tests, participants were within normative data ranges and were deemed to have 'normal' mobility levels or low falls risk in all but one of the tests where one participant was assessed as being in the '4 x more likely to fall category' for the functional reach test.

The CORE-GP test demonstrated 'low levels of distress' on 2.54% of the occasions the test was performed, with the remaining 97.5% of tests showing 'healthy' well-being scores. Although there was a slight non-monotonic decline in scores, this was not found to be of statistical significance, albeit with a p -value of 0.07 being close to the critical value of $p=0.05$ this might indicate an effect of substantive importance may be found in larger studies. The FES-I overall trends demonstrated a difference of 2.0 points during periods of dancing versus non-dancing and although again this was not found to be statistically significant, it could be argued this 10% decrease in points score might be a substantive finding in clinical practice.

The study indicates that women have a statistically significant better level of postural stability ($p=0.021$, CI -0.861 to -0.079) and limits of stability ($p=0.015$, CI 2.35- 19.5) than men and the older adults in this study had statistically significant lower scores for the falls risk test than the normative data figures ($p=0.001$ for 54-71 year olds and $p=0.030$ for 72-89 year olds).

Measurements at each 3-month data collection point were often dependent upon other variables such as health problems, for example an acute episode of Rheumatoid Arthritis or minor foot surgery impacting upon an individual's ability to complete the tests consistently. In addition, this had an impact upon the amount of dancing a couple might participate in and therefore not only upon the individual concerned but upon any dancing partner that they might have. Comparisons of baseline with 12 month data would have been meaningless if at 12 months a participant might have had an 'off-day' due to variables such as those above.

Given the small sample in this study, it is not possible to totally separate the effects of some of the confounding variables in the study, For example, in dancing pairs, the amount of dancing is dependent on each individual being willing and able to participate and the majority of participants were involved in other physical activities which might also have had an impact upon their health and well-being. However, it appears that ballroom dancing attracts people who are 'active' in their lifestyle.

In addition, although the outcome measure tests were not able to discriminate sufficiently in this sample, it is suggested that ballroom dancing is an activity that is pursued by 'healthy' older adults; they are 'naturally' active individuals, with 'healthy' levels of well-being, low anxiety of falling and are of a low falls risk than normative data for the parent population, with women demonstrating statistically significant better levels of postural stability and limits of stability of balance than men.

The quantitative results considered above are used to inform and complement the qualitative findings in Chapter 12, the discussion.

Chapter 7 **Overview of Qualitative Findings**

Chapter 7 presents an introduction to the qualitative findings of this study. A summary of the participants and demographic data is provided to assist with 'placing' the participants as their quotes are presented in chapters 8 to 11. The 4 core themes identified by the Framework Analysis approach will be presented with their sub-themes.

To ensure confidentiality and avoid the possible identification of participants, pseudonyms were used when presenting the findings. The pseudonyms are presented in Table 22. Table 22 also indicates whether participants were interviewed in a dyad or as a single participant. The pseudonyms are used alongside each quote presented, followed by the interview number/ page number/ and line number for ease of reference to original transcripts. This enabled the quote to be traced and viewed within the wider context of the interview section. Interview 1 was performed at baseline, 2 at 6-months and 3 at 12-months.

7.1 *The Participants*

A summary of the study participants will be outlined. A purposive sample of 26 older adults were recruited for the study (14 female, 12 male). Participants were recruited from local dance classes in the north of England and participated in social ballroom dancing for at least one hour, once a week. They were community-dwelling 'older adults' who lived in their own homes either alone or with a partner. Participants were free from any dementia-related illness and were aged 58 to 83 years of age at baseline. Whilst it is acknowledged that the outcomes measures and falls statistics are often related to those over the age of 60, the 58 lower age limit allowed for one partner to be slightly younger than the other in a dyad as often the classes were started once one of the pair had retired.

Three participants (2 male, 1 female; participant numbers 16, 17 and 20) withdrew from the study after the baseline data collection session and before the three month meeting. All 3 participants had only recently started their ballroom dancing classes before enrolling onto the study and participating in the baseline measurements (although one male had previously been involved in ballroom dancing). Their reasons for withdrawal were that they had decided to cease ballroom dancing classes before the 3-month data collection point and hence could no longer continue.

All participants were recruited via one local dance leader contact who lead dance classes, tea dances and community dance leader training sessions that the participants had attended.

Twenty-three participants (88%; 13 female, 10 male) completed the study by attended all 5 data collection sessions over the 12-month period.

To assist with interpretation of the findings, the demographic characteristics, participant pseudonyms and interview status are summarised in Table 22 below.

Table 22 Participant Demographics and Pseudonyms

Participant Number	Gender (M/F)	Age at start of trial	BMI category	Falls at 0 months*	Medications at 0 months*	Dancing (hr/wk) at 0 months	Other exercises at 0 months	Pseudonym	Single or Dyad interview
1	F	63	Missing	No	Yes	1	Yes	Sheila	Patrick
2	M	64	Normal/ healthy	No	Yes	1	Yes	Patrick	Sheila
3	F	78	Normal/ healthy	No	Yes	1	Yes	Florence	Isabel
4	F	67	Normal/ healthy	Yes	No	1	Yes	Isabel	Florence
5	M	68	Severely obese	No	Yes	2	Yes	Les	Single
6	M	72	Overweight	No	Yes	1	Yes	Eric	Irene
7	F	71	Overweight	No	Yes	1	Yes	Irene	Eric
8	M	67	Overweight	No	Yes	2	Yes	Isaac	Claire
9	F	63	Normal/ healthy	No	Yes	2	Yes	Claire	Isaac
10	F	58	Overweight	No	Yes	1	Yes	Pamela	Single
11	M	67	Normal/ healthy	No	Yes	1	Yes	Michael	Emily
12	F	62	Overweight	No	No	1	Yes	Emily	Michael
13	F	83	Missing	Yes	Yes	1	Yes	Kathleen	Single
14	F	68	Severely obese	No	Yes	1	No	Brenda	Robert
15	M	72	Overweight	No	Yes	1	No	Robert	Brenda
16	F	67	Normal/ healthy	No	Yes	2	No	Elsie	William
17	M	65	Normal/ healthy	No	Yes	1	Yes	William	Elsie
18	F	62	Overweight	No	Yes	1	No	Jeane	Alan
19	M	67	Overweight	No	Yes	1	Yes	Alan	Jeane
20	M	75	Normal/ healthy	No	Yes	1	No	Daniel	Single
21	M	71	Overweight	Yes	Yes	1	Yes	Richard	Rachel
22	F	59	Overweight	No	Yes	1	Yes	Rachel	Richard
23	M	65	Normal/ healthy	Yes	Yes	1	Yes	Rod	Amy
24	F	61	Overweight	No	Yes	1	Yes	Amy	Rod
25	M	61	Overweight	No	Yes	1	Yes	Ronnie	Julie
26	F	60	Overweight	No	Yes	1	Yes	Julie	Ronnie

Of note, the dyad of Florence and Isabel were two widowed friends who danced together, travelled to the data collection sessions together and hence wished to be interviewed together. All other dyads consisted of life partner couples. Participants 5, 10, 13 and 20 were interviewed as single participants.

7.2 *The Qualitative Findings: Key Themes and Sub-Themes*

The interview process was summarised in section 5.8 and 5.8.1 and the FA data analysis stages in section 5.9. Table 23 below presents the final key themes and sub-themes formulated through an iterative coding process, from line by line coding, open and focused coding data into the key themes. The process was documented in stages using Microsoft Excel® spreadsheets to keep an audit trail of the decision making process for refining themes.

Table 23 Final Key Themes and Sub-Themes

Active Ageing	Class commitment and congruence	Social dance community	Enjoyment
Preventing Inactivity and Apathy	The Dancing Class	Ballroom Dancing: <i>'Life is designed for two'</i>	Raising spirits: <i>'Among the land of the living'</i>
Active Minds: <i>'The Brain Gym'</i>	The acquisition of dancing skills: <i>'Something I can do'</i>	Dancing through the life course: A personal history of dance	Expressing one's self
Ageing: Acceptance, Adaptation and Frustration	Action, Commitment and Maintenance	Come Dancing: Stepping out for an occasion	Distraction from life's worries
Physical Health Perceptions	Relapse: Barriers and Interruptions	Influence of Self and Others	Beneficence
		Social Interaction and Identity; Fellowship and Friendship	

7.3 Chapter Summary

Following the presentation of the data collection methods in chapter 5 and quantitative findings in chapter 6, chapter 7 presented a brief outline of the participants including their pseudonyms and their related dyads to enable the reader some insight into the relationships between the participants as presented in the subsequent 4 chapters outlining the key themes and sub-themes that emerged from the data.

Chapter 8 **Active Ageing**

This study's conceptual framework is that of "resilient ageing" and a key factor in this is maintaining one's physical well-being (Wiles, Wild, Kerse and Allen, 2012) and "wellness" in spite of long term illness, disability or advancing into oldest old age-groups (Hicks and Conner, 2013, p.745). Taking an active approach to ageing emerged as an important theme for participants and was prevalent amongst discussions. Chapter 8 presents the key theme of Active Ageing and its 4 sub-themes.

8.1 ***Preventing Inactivity and Apathy***

To initiate the baseline interviews, participants were asked to discuss why they commenced social ballroom dancing. The reasons often reflected the recognition that individuals were getting older; as Sheila recalls, her call to dance was initiated when in conversation with friends that they were all "getting older we've got to do more things, there's a dance studio in the village" (1/5/54). There is evidence to suggest that activity levels decline with advancing age, perhaps due to having developed a habit of a sedentary lifestyle during younger adult years (Mavrovouniotis et al., 2008), which might well then increase post-retirement. Upon recognition that they needed to keep active, Sheila and her husband Patrick started dancing lessons. Several years later at the time of the interviews, they were running social tea dances once a month in their village's community centre, largely aimed at attracting older adults who were often more socially isolated and more frail than themselves. They were an active couple within their community and were very keen to help others find activity and friendship through their local community centre, which they had been instrumental in securing funding for and setting up. Sheila's proactive nature was reflected in her comments, "I wish the world would get off its backside and get on with life because getting on with life is better than sitting down really" (1/19/23).

There was a general sense amongst the participants that it was easy for retirement to lead to a loss of structure of one's day, and there might be temptation to become less active as Patrick suggested:

You know sitting in front of the TV and just doing that and they think they're being busy! There does seem to be a little bit of apathy where people say oh I'm doing this and when you break it down, really, the hardest thing they've probably done is get up and watch television. (1/18/37)

However, when the participants were discussing their health consciousness, there was little reference to ballroom dancing specifically; more so acknowledging the need to do *something* to keep physically and mentally active in general once they approached their older adult years.

Several participants made specific reference to retirement being an event that initiated a change in their activity levels, with most considering it to have a potentially negative effect. Daniel had noted people "going to ruin" upon retirement (1/8/225). Participants would compare themselves to friends and family who, upon retirement, had become less active. Michael, who had married Emily a month before participating in the study (both previously widowed) also continued the theme of avoiding the television, "I'm not going to vegetate watching TV all the time" (1/11/308). As a couple they were making a conscious effort to participate in ballroom dancing and other physical activities each week, working around Emily's part-time job at a local school. Michael had recently had a heart attack and began ballroom dancing through the referral to the local Physical Activity and Leisure (PALS) exercise on prescription scheme. Emily had also decided to attend activities at the leisure centre with him, so it was something they could do together.

Pamela was a married lady who attended ballroom dancing lessons and the occasional social dance by herself as her husband would not entertain the idea of dancing, in spite of her attempts to get him to join her. Her initial motivation to start exercising originated from being involved in a 'health employees at work' scheme towards the end of her working life, whereby she attended exercise classes, following on from which she became involved in ballroom dancing as an activity. She recalls it was,

To get myself out, when I first retired, I didn't set the alarm and then I thought this is stupid, I've got to set the alarm or else I've got no structure to the day and then when I started doing all these classes, I thought right, well I've got to treat it like work, I've got to treat it like I have got to go to these classes, there's no saying oh the sun's shining today, I'm going to stay at home and do my gardening, you know. So my life is regulated by my mobile phone which has got reminders on to tell me to get ready to go everywhere, you know. So that in way, it is self-motivation, but I do treat it like work, which helps and it's a socialising side of it as well, you know, whilst

you don't know everybody's names or a great deal about them, there's always a friendly face usually. (3/16/431)

In a similar vein, Les explained his reasons for dancing. He now lived by himself and having previously been married three times, found himself alone in his retirement. He had participated in ballroom dancing throughout his younger adult years to competition level, and was known for being the best dancer in the group he now attended. Indeed the dance leaders at his class had invited him to become a peer mentor for ballroom dancing classes that were run by the local council. He talked of his social circle decreasing after retirement and saw the dancing sessions as a regular activity that enabled him to have some routine, something to get up and go to and to socialise,

He was not participating in the dancing because he needed to learn. He did not think much about his health when he was younger and "I don't think about it much *now!*" (2/5/15). However, having recently suffered a heart attack he started the dance classes after being referred to an exercise on prescription scheme. This was more so because he enjoyed dancing, rather than because he was overly concerned about his health, perhaps as evidenced by his BMI being in the 'severely obese' category, in spite of the cardiac event. He recalls:

It took a while for me to really realise I ought to, I thought I can manage without, then I thought oh come on, you're Michelin man! And er, I thought I really ought to go and I went to keep fit down there and then they started *name of dance class** and now I do keep fit and I go to *name of dance class** so..... So while I'm not thinking about it I'm actually doing something about it but I'm enjoying myself at the same time!

(1/8/30)

(*name of dance class omitted)

However, there was some recognition that life could not stop because of the heart attack, in spite of how difficult he found it to attend PALS, and the temptation to stay at home and "play it safe" (3/5/142). Les knew it was best to attempt to "keep going":

I was a bit like that to start with, I thought I've had a heart attack, I'd better be careful and now I think I've had a heart attack, so what? What's happened? 25% of people have had some sort of incident! So what, you know! Keep going!

(1/8/30)

Eric had also recently suffered a heart attack and similarly was referred to the PALS scheme, but in contrast to Les he had been more health-conscious throughout his life and had always been involved in physical activity. He had previously run marathons, played badminton and had swum regularly. He did not consider the ballroom dancing as being a particularly difficult physical activity for him, but perhaps that "it's helped sort of since I've had the heart attack because it's another thing to sort of keep me active" (1/17/15). His motivation to attend classes was more to participate in an activity with his wife Irene, "I don't want to be doing a treadmill! That sort of thing, so dancing is a super exercise and something we can do together" (1/5/9).

Similarly Alan talked of "constantly thinking about health" (3/18/438) and the loss of routine and "systems going down" post-retirement. There is considerable evidence that older adults tend to decline physically in older age (Fernandez-Arguilles, Rodríguez-Mansilla, Espejo Antunez, Garrido-Ardilla and Perez Muñoz, 2015; Patterson and Warburton, 2010; Zhang et al., 2007), suggestions that reduced physical function can result in social decline (Beswick et al., 2010) and indeed many older adults experience social isolation and loneliness (Allen, 2008). Wolff et al. (2014) suggest that a self-fulfilling prophecy of ageing may occur: if an individual expects advancing age is likely to coincide with reduced activity and a less healthy lifestyle, this is likely to be the case; whereas if views are positive, older adults might engage in more physical activity. Dancers in this study, in spite of some having long-term health conditions, tended to follow the latter point of view.

Whilst Alan remained well and working part-time on a freelance basis, his wife Jeane was suffering with various ailments that were having an impact upon their ability to fulfil the active lives they had planned for upon retirement. Alan notes:

We were just talking to Ronnie and Julie about this on Monday, both of them worked, they've worked all their lives, we've worked all our lives, what have you, then as soon as you come to easing off a bit and erm, just you get out of your routine as you've been doing for years and years, your system goes down and sometimes you

get ailments and ailments expand and stuff like this.

(2/14/349)

However in contrast, Ronnie, who had worked in a sedentary occupation all his life saw retirement in a more positive activity light; he had a new freedom, more time and a chance to become more active:

From my point of view because I spent most, all my working life more or less sat at a desk all day and where my sole exercise was perhaps walking across to the, the gentleman's or round to the shop or whatever and that's all I did and you got stagnated, well I did. Now I think right, I've got Monday dancing!

(2/5/127)

Ronnie and his wife Julie had often worked shift patterns in a hospital and in spite of Julie's troubles with rheumatoid arthritis, the couple were trying to find activities they could do together to try and prevent a post-retirement decline in health.

Rod's motivations for dancing were much to do with being cajoled by his wife Amy to attend. However, he was very much aware of the need to maintain good health, having being diagnosed with prostate cancer. Having considered that if he knew his physical or mental performance was below average for his age, he would try to find something to positively influence that state he discusses:

And I'm conscious of the need to keep fit as you get older, I've often thought about joining a gym, but I just, I don't know whether I'm being cynical or not, but as you get older, certainly at sixty five, I think you don't need to pay someone, err, go and have structured exercise. I'm sure you can get it without. I mean I like to do a lot of walking, we have a big garden, I do a lot of heavy work in the garden and I think the combination of both, I'm quite happy with that as being enough exercise for a man of my age. Erm, the dancing is just something extra, which yet again it's a social skill that, that it's nice to have because it opens up other avenues.

(1/1/18)

Other participants made particular reference to being conscious about their health, but as Florence explains, ballroom dancing for her was primarily for enjoyment and secondarily for the good of her health. She had also participated in line dancing classes but due to her health problems (primarily osteoporosis leading to low back pain), this activity had become increasingly difficult, so she often attended over the more recent months to maintain the social activity, rather than to actually participate. Attendance at her dancing classes was for enjoyment first, second for the good of her health.

8.1.1 Summary of Preventing Inactivity and Apathy

Within this theme, it was found that as the participants became more health-conscious upon entering retirement age, post-retirement or having had a health issue, ballroom dancing was a physical activity that older adults chose to engage in.

In an attempt to avoid 'vegetating', 'sitting down all day' or the apathy of their friends and relations, who had become inactive and resigned to watching television all day upon retirement, the participants wanted to introduce new activities into their lives. This led to the attendance at the ballroom dancing classes or social dance activities. It was seen as an opportunity for couples to do an activity together, particularly after having spent their working lives apart day to day, and for those living alone, to maintain a regular social activity with like-minded people. This relates to activity theory, whereby social activities are said to impact upon the well-being of older adults due to the opportunity they provide to confirm role identities (Herzog, Franks, Markus and Holmberg, 1998).

Participants chose to partake in ballroom dancing rather than other forms of physical activity primarily because it provided such *enjoyment* rather than specifically thinking about the dancing being an activity that would provide significant physical health benefits. Indeed some participants did not immediately consider it to have brought any particular sense of physical health benefit. It was seen by some as a 'gentle' or 'easy' physical activity that merely provided 'another tick in the box', whereas others did admit to finding it more strenuous. This was particularly the case for those participants with a known pathology that had an impact upon their mobility. Participants had joined the ballroom dancing classes to prevent the inactivity and apathy that they associated with retirement and ageing. It was an activity they engaged in primarily for enjoyment, rather than for specific health benefits, but was an activity that also provided new social avenues.

8.2 **Active Minds: 'The Brain Gym'**

As discussed in section 8.1, rather than the physical health benefits, the participants portrayed a sense that learning the steps, sequences and routines for dances provided a valuable 'mental exercise'; in Sheila's terms, "*the brain gym*". She considered learning ballroom dances kept her husband's, "brain whizzing a little bit more than it would have done" (2/9/247).

Patrick: I do find that some, I don't know which, we've done so many now at *the dance studio**, but sometimes she'll say we'll do so and so, so and so, and you think and you've got to really start thinking about what you are doing...I really do think and it's no good talking about it, you've got to really *think* what you are doing and you're brain must be doing good really

Sheila: Yeah, it's *brain gym* isn't it, brain gym!

Patrick: You know, if you start thinking about what we're, what we're having for supper or what we're having for, you know, you can completely get it wrong, you've got to really concentrate on the steps and what's coming next. (3/8/326)

*substituted dance studio name.

By many participants, the health benefits were viewed overall as being more beneficial for one's mental rather than physical health. Four of the females in a dyad suggested that the mental workout was beneficial for their male partner, as typified by Irene's views:

I think the main benefits with the dancing, apart from, you know, doing something that's having a hobby, is making your brain work to learn the steps, particularly for Eric because he's got a bad memory and it does make him, it's not that he can't do it, he can't remember what comes after one another and that's and then we fall out, but, yeah, but in a way, it's good that we fall out because its making him think because that's the one thing that worries me about Eric, is his bad, bad memory, it's terrible.... but I think the dancing is the one thing that is good for Eric, as much as the exercise. (3/5/124)

Eric's difficulties remembering the steps did cause some tension with Irene during the classes and they went through a period of being 'irritable' with one another in the dance lessons, but learnt to manage the situation by Irene learning the 'lead' steps so that when Eric forgot, she could remind him what to do. They were a couple who regularly participated in demonstrations at local town council events, where the dance classes were promoted as part of active living activities run by the council.

Rachel also mentions her concerns about Richard's poor memory yet they were able to 'dance happily' together and 'going our own sweet way' in their classes, indicating that she had less concern with achieving the finer details of the dance. She was, as many other participants also were, just happy to get around the dance floor.

Rod also talked of his wife Amy often showing concern for what he acknowledged were signs of memory problems and that "at the back of my mind...if you don't exercise your mind it's going to get lazy" (1/3/84). He acknowledged the dance lessons providing a challenge for him in this sense, with dance being, "This very formal, erm, discipline that the mind has to perform these tasks on time to a beat and it can't, it can't fail!" (1/4/119).

Michael at times referred to his desire to keep active post-retirement and 'not vegetating', "It's the exercise and the challenge of keeping your mind active and learning new steps and you know, not vegetating, like I say" (1/12/345). Rod also concurred with this and talked how he considered himself to be "vegetating cerebrally" (3/3/22) post-retirement and that he did not think he challenged himself sufficiently in this respect.

Many of the participants considered it a challenge to return each week and remembering the steps and routines they had learnt the week before, and at times, as seen above, this proved frustrating for some couples. However, as Florence points out, "But if it wasn't difficult, it wouldn't be doing you good would it? It wouldn't be doing your brain good if it was all too easy" (1/13/12).

8.2.1 Summary of Active Minds: *The Brain Gym*

There was a general consensus amongst participants that ballroom dancing was an activity that challenged one's mental capabilities. This often seemed to be more challenging for the male dancers at times, which proved to be frustrating for their female partners. Cooper and Thomas (2002) also discuss this theme within their study of social dancers. It was suggested by participants that modern sequence dancing in older adulthood might be easier than ballroom dancing, due to it being somewhat more acceptable to adapt the traditional male/ female, lead/ follow roles. There was also recognition in the change of partnership

dynamics when the male 'lead' forgot his steps due to a deficit in memory, and how dancing couples adjusted to this potential change in roles by "subtly subverting" the rules of ballroom dancing (Cooper and Thomas, 2002, p.696).

Whilst ballroom dancing might help prevent physical and mental decline in older adults, it has also been suggested it might *highlight* such decline. Thomas and Cooper (2002) suggest this to be the case given the complexity of learning dance steps and sequences, and that some participants are able to memorise steps with more ease than others and that difficulties with remembering routines seemed to be associated with advancing age. Whilst the physical health benefits of ballroom dancing were not a primary reason for class attendance, the mental health benefits were considered to be more obvious; it was a difficult activity to start learning and provided participants with a mental challenge. This was seen as beneficial to prevent cognitive atrophy in their advancing years. The findings in this study reinforce those of Thomas and Cooper (2002, p.70) whose group of social dancers discussed dancing helping to keep one's "brain active", "alive" and help keep them young, with one participant's son exclaiming that his parent was a "recycled teenager".

8.3 Ageing: Acceptance, Adaptation and Frustration

Illich's definition of 'health' refers to it as being "a process of adaptation...The ability to adapt to changing environments, to growing up and to ageing, to healing when damaged, to suffering and to death" (1976, pp.273-274, cited by Seedhouse, 2001, pp.58-59). A common theme within the interviews was that the dance classes seemed to highlight this 'process of adaptation' to ageing. There was recognition amongst the participants that their physical and cognitive capabilities were declining and their social opportunities were changing. The dancing perhaps helped with acceptance of these changes. They were learning to adapt their dance technique to accept this but at the same time, by nature of the fact they were dancing, resisting the natural age-related decline and demonstrating resilience to it.

Physical capabilities were often limiting an individual's dancing abilities. However dance teachers were supportive in suggesting adaptations to routines and encouraging participation, even if dancers were not able to perform the techniques correctly. Friends and dance partners Isabel and Florence demonstrated this in their partnership. Isabel was 67, in very good health and did not take any medication. Florence was 78 and troubled by osteoporosis and considerable back pain. Due to a shortage of single men in their dance group they formed a partnership whereby they would alternate taking the 'lead' or 'follow' roles in dances. This worked nicely for them as a dance partnership. Florence, being 11cm shorter than Isabel, found it difficult to raise her arms sufficiently high to achieve the 'correct' position largely due to her osteoporotic back pain, so the pair adapted their technique to enable Florence to lower her arm position and feel less discomfort. Isabel noted she did not mind as it was the only way she got to dance, even if the technique had to be adapted.

Although 21 of the 23 participants who completed the 12-month trial were over the age of 60, and therefore would be included in the definition of 'older' adult; there was some discussion about what this meant. At times some of the participants were quite clearly differentiating between themselves and what they considered to be 'older' people. Gubrium and Holstein (2000, cited by Thomas and Cooper 2002, p.71) acknowledge that one's chronological age does not necessarily equate with one's perception of their own age. An individual may feel older or younger than their 'actual' age. This was an interesting point as participants in this study did not see themselves as 'old'. Similar findings were also presented in Cooper and Thomas's (2002) social dancing study. Participants tended to only consider individuals older than themselves as 'old'. This is demonstrated in the exchange between Isaac (aged 67) and his life partner Claire (aged 63) in this study when discussing their dance classes, and a promotional poster that they had featured on:

Isaac: I don't know who it's aimed at, that class.

Claire: Well, at the older person really.

Isaac: I know, but what is the older person?

Claire: Or the unfit person, I think they will probably still get recommended from that PALS.

Isaac: How do you describe people that, you know, it's for.

Claire: I think they just want anybody who's sort of, erm, well it's a Monday afternoon, so obviously people who don't work for whatever reason, but erm, you know, I think if they can get, get people going, I think the younger you can get people dancing, the better. Erm, because you know, it is exercise.

Isaac: Like I say, you know, geriatric, that's how they'll class us when they've finished this poster! (laughter from 09), weren't it.

Claire: No, no, no she wasn't, and they're not all geriatrics are they?

Isaac: I don't know, what is a geriatric? What's a geriatric?

Claire: I don't know.....

Isaac: Well if somebody said geriatric, I'd think it was 80 plus... (1/23/694)

Michael (aged 67) also made this observation about a local tea dance that he and his wife Emily (aged 62) would attend:

We may go to a tea dance tonight, went there a fortnight since, they're all elderly people there, there's no young ones, like what we are, they do very old fashioned sequence dancing, err, we did say can we have the Mayfair quickstep and the person said, 'Are you trying to kill us all?' says maybe a little bit too quick for them, so that's one dance we can do quite well. (3/3/67)

Brenda (aged 68) and Robert (aged 72) were one of the couples who, by the end of the study, had stopped dancing for health reasons. Robert had Chronic Obstructive Pulmonary Disease (COPD) and would struggle with breathlessness when walking even short distances. They would attend the classes as a means to try to keep as fit as possible but also for the social aspect of the group; they clearly recognised their physical limitations. Brenda also

had arthritic problems and they would often have to sit out for a while whilst Robert 'got his breath back'. They talked of their dance teacher being very supportive, helping them to adapt techniques and routines to enable them to dance and enjoy themselves. Robert also talked of having problems with incontinence if he did not pace himself, so he had learnt to adapt and 'train himself' so as to avoid what he termed an 'embarrassing problem', which he was obviously keen to avoid occurring during the dancing class. They discussed their adaptations and the importance of a supportive dance teacher:

Brenda: But it's learning to adjust isn't it?Yes and she appreciates that Robert's got his breathing problems, I've got me dizziness and she keeps an eye on us but she'll say, yes you're alright doing that, which makes you feel like you're coping and you're not inadequate sort of thing.

Author: Yes, because presumably if she wasn't like that and you know, stricter and....

Brenda: You wouldn't enjoy it.

Robert: No. We wouldn't go to be honest because that makes you feel worse. I mean when she first saw us dancing the quickstep, because it were a year back, she said, I don't know how you do it, but you do it! And we don't stay in time to any of the steps but we've developed a dance that we can do and we enjoy doing!

(1/16/14)

This couple clearly had to adapt their routines, they struggled with the pace of some of the dances as they described, but they 'adjusted' and 'developed a dance' that they *could* do together. This was also reflected in the activities they talked about in everyday life, as a couple they had to accept and adjust their lives to accommodate for their health problems. As they recall:

Robert: That's the annoying thing! And the annoying thing is I feel I want to do something, but I haven't got it in me to do it....My problem is I always think I'm 25, you know, you forget you've sort of passed by that. I mean that's been the same all my life, when I laid that patio.....I was suddenly having a heart attack!

Brenda: I'm constantly saying, "Robert!"... and that's what he doesn't like...

Robert: It's hard to accept.

(3/5/2)

They also referred to the inspiration they gained from watching other couples dance in terms of how they were able to adapt their dancing and mask any disability,

Brenda: What does amaze us though, all of these people... er there's a lot older than us actually but we are catching them up! But they walk about with zimmer frames or walking frames and walking sticks, or even a mobility scooter but once the music starts...they dance! And it's absolutely amazing! I mean they support each other you know, husband and wife.

Robert: They might not be the fastest on the dance floor but they get round!

Brenda: No but they *so* enjoy it!

Robert: And I thought yes! If there's something left in life you know, we're obviously closer to the end than we are to the beginning...then you think well, yeah, what can we keep doing? Well yeah, we're not going to be able to walk like we used to.....

Using their partner as a zimmer frame! Which is good, I mean, to whatever level you dance at, they're still dancing!

Brenda: And enjoying it! This is the thing!

Robert: And they struggle along with a zimmer frame do some of these ladies and they get up with their partner and they dance backwards! Which to me, it's hard enough to go forwards! I'm amazed they can dance backwards! You know, we watch them don't we?

(1/5/24)

It is again of interest that they considered some of the other group members to be 'a lot older' than themselves, when in fact there was not a large number of considerably older adults within their dancing group. In Thomas and Cooper's ethnographic study of older adult social dancers (2002, p.70), they too observed that most appeared to be, "[F]it and energetic on the dance floor. Even those with serious disabilities do not seem disabled when they are dancing", with their participants suggesting, "dancing wards off the ailments of old age especially the stiffening up of the body and the atrophy of the mind" (Thomas and Cooper, 2002, p.70).

Julie was another lady who was troubled with musculoskeletal problems due to Rheumatoid Arthritis (RA). She attended dance classes with her husband Ron and would be on a regular

review at a RA clinic. She noted her adaptations; she wore sports socks to help prevent her ankles swelling, as advised by her nurse.

The addition of sports socks to support Julie's joints showed a recognition and acceptance that her condition needed her to make small adaptations to assist in participating in the dance classes. Indeed with Ronnie, she began to attend additional dance classes at another venue too as the trial period progressed, as they both gained confidence in their ability and found considerable enjoyment in the activity.

Whilst many of the participants spoke about their acceptance of the ageing process and the health-related challenges it often brought alongside, at times there was mention of the 'frustration' at the ageing process and how it impacted upon their ability to dance.

Florence discussed how:

Sometimes you go and you think I've done rubbish today and other times you go and you think, like last week you think, ooh I've really enjoyed it, but you still enjoy it, even if you're frustrated you still enjoy it, it's just that things don't always just go right. (1/13/18)

As mentioned previously Les had considerable dance experience in his younger years and was considered the expert of the group. He was also at times frustrated by the limitations his health conditions placed on his physical capabilities now, although was keeping as active as his health allowed. "I don't get frustrated in those classes because I know more, I get frustrated because it doesn't feel like it used to" he noted (1/11/15). There is an obvious reminiscence about how the dance 'felt' to him; he would recall his dancing days with much enthusiasm during the interviews and it seemed to represent a very happy period of his life prior to meeting his first wife. The recognition of the dance not 'feeling like it used to' is interesting:

It's awful, I know what to do but it won't do it anymore! My legs won't do it anymore! You know they just, they want to Quickstep and I have to say, 'hold on! I'm an old man! Steady on! (1/6/20)

Irene's frustrations with Eric not being able to remember the steps led to some arguments during the classes for a while as Eric recalls, "We went through a little phase where it was becoming stressful because I was forgetting and Irene was remembering and we were

getting irritable with one and other. But now we've calmed down a bit more" (2/13/386). The couple managed to adapt their dancing to try to remedy this. Irene would attempt to learn the 'lead' and 'follow' steps and they would practice in the week at home. Her frustrations were because she was able to remember the steps but whilst Eric was physically able, his memory for the dance was lacking in Irene's opinion:

But Eric hasn't, he's a bad memory for everything, it's not just the dance steps, his memory is bad anyway and also what doesn't help is err, when the man is supposed to, in the dancing, when the man is supposed to take the lead, he shouts at me for me taking the lead, but I can remember what we're going doing next and then that causes confrontation again because, you know, *he's* supposed to be leading, the teacher's*saying the man should be leading and he's not doing because I'm leading!

(2/13/386)

(*name replaced with 'the teacher')

8.3.1 **Summary of Ageing: Acceptance, Adaptation and Frustration**

Whilst there were some frustrations at bodies and minds for their age-related decline and physical and memory restrictions impacting upon dance steps, the participants in this study managed to find ways to successfully adapt their dance techniques. This in turn assisted with some acceptance of age-related changes. Wagnild (2003, p.45 cited by Wiles et al., 2012, p.416) discusses resilience and defines it as an, "enduring and yet fluid personality characteristic that enhances individual adaptation and positively influences the process of successful ageing." The discussions within this sub-theme demonstrate examples of the personality characteristics that contribute to an individual's adaptation and hence resilience in ageing. In spite of physical limitations, participants were accepting of the need to adapt and change to their dance techniques to allow continuation of dancing. Such adaptation, when challenged by adversity, is concomitant with resilience (van Kessel, 2013).

Adaptations may also have taken the form of females learning the 'lead' steps of the dance, in spite of having a male partner who would traditionally take that role, so as to compensate for the male's loss of memory during routines. To these dancers it did not matter if the technique was not perfect or if roles were reversed. If they could complete a dance and move around the dance floor successfully this was sufficient achievement.

Contributing to this, there was mention of the importance of the dance teachers being accepting of their physical limitations, not expecting perfection and providing a supportive learning environment. This will be further explored in Chapter 9 when considering the dancing class itself.

8.4 *Physical Health Perceptions*

This theme relates to the participants' perceptions of the effect ballroom dancing had on their physical health. Ballroom dancing is considered a moderate-to-high intensity form of physical activity that can provide known benefits to one's physical health (Blanksby and Reidy, 1988). Within this theme, participants voiced different opinions on the physical benefits: some finding it a physical challenge, but with physical health benefits; and others perceiving a minimal physical, but more so mental challenge. The consensus amongst participants was that ballroom dancing was a physical activity, but viewed as one they 'don't think about' or 'don't realise' they are doing, and this was a 'bonus'. They were distracted by the sense of enjoyment and, therefore, this was a preferable activity in comparison to others such as attending gym classes, as Kathleen highlights:

It's a nice way to exercise, erm, you know, exercise doing something that you like doing because I don't like going to the gym and things like that. I mean when I went to the exercise class, it was a toil of a pleasure sort of thing, but this is a pleasure, you know, the dancing is a pleasure to go to. (2/13/381)

Several physical benefits were mentioned by participants, these being improvements in posture, balance, endurance and perceived changes in the musculoskeletal system. For example, several participants mentioned their initial physical response to starting dancing was one of exacerbation; Kathleen noted:

In the beginning when I came, you know after the dancing, I could hardly move, you know this leg, it was really stiffened up. But I've noticed recently it hasn't been as bad, it hasn't been aching as much so I am sure it's helped. (3/7/162)

Kathleen had previously had an injury to her knee as a result of a fall and so it is likely that as time progressed, the dancing would have helped to both mobilise the joint again; hence the initial aches and strengthening of the surrounding musculature. This would explain why she began to notice that her knee was not aching as much as it had been. Brenda too recalls "the first waltz when we go round we're like 'ooh me legs!' but by the time the hour has finished it's fine you know" (1/20/23).

Jeane, who struggled with chronic neck and back pain and had previously had a capsulitis of the shoulder, also discussed at baseline finding the dancing difficult, having felt some post dancing muscle aches.

However, by the time of the final interview at 12-months Jeane had really recognised the positive physical adaptations that had occurred:

The muscles, you know what I mean, have got used to it and I wasn't as tired after a while. So obviously it must have been building my stamina and muscles were gaining because of what we were doing. I might find myself back in that position to begin with.....Oh it's definitely good isn't it, you know, I didn't think about it before I went, because you don't do you, you don't realise you're not using certain muscles, all the rest of it. But at least when I know, if it happens again, I know it's only a matter of time before it, my muscles get used to it again.

(3/13/295)

Amy and Rod also discussed their initial response to the dancing:

Amy: We have said a couple of days later, Oh flipping heck, you know! You can tell we've been!

Rod: Well it certainly gets me, I'll be stiff tomorrow even though I've, yeah, it gets me in my calves does that. (2/8/184)

This discussion appears to suggest that adaptations to muscles are occurring, perhaps even delayed onset muscle soreness (DOMS) which occurs after unaccustomed exercise (Boone, 2014). This is of particular interest as Rod had seconds earlier said he did not find it at all strenuous. However, such feelings of exertion would indicate there were physiological challenges, which would cause his muscles to adapt, recover and indeed strengthen over time. Ronnie and his wife Julie also noted a similar sense of initial musculoskeletal changes:

Julie: It took a lot of getting used to because you ached because you, we used to comment on that, both of us, because of the position that we were in, we were so,

we hadn't been like that for years. So it did didn't it, but now it kind of, because we've been going a while, we don't even know, because we're just going.

Ronnie: Yeah, for the first few weeks, certainly from my point of view, my shoulders and my back and the err, thigh muscles ached like billy-oh when we'd finished and I used to think oh, I hope it's not like this, you know, when I've been doing it six months, but it's not now, you don't, and you can, whereas before you were thinking oh stand up straight, now you just go automatically. (2/13/345)

The beneficial physiological changes for older adults that may be accredited to participation in ballroom dancing, for example, muscle adaptations such as hypertrophy from exercise (an increase in muscle size resulting in improvements in strength, power and speed) would be expected to have manifested in around 8-12 weeks if following a training programme (Boone, 2014). Many participants commented on their immediate soreness when they started dancing. Typified by Jeane's response at 12-months, there was an indication that after a period of time, their bodies began to adapt and strengthen and dances could be performed with more ease.

Of the beneficial changes that were mentioned, as suggested by Ronnie and Jeane above, several participants mentioned that they felt there had been benefits to their posture due to dancing. The dancing "hold" in ballroom requires a good posture and raised arms, and so participants would attempt to do this correctly to improve their technique, and also the aesthetics of the dance. Postural changes occur during the ageing process and this can impact upon one's balance and functional capabilities (Gomes da Silva Borges et al., 2014). Therefore maintaining a good posture and hence a 'normalised' centre of gravity will offer some protection to individuals against the risk of falls. For this reason, the techniques in ballroom dancing that focus on maintenance of a good (and correct) posture would prove beneficial for older adults. Sheila in particular had voiced her concerns about her father and his brothers having, "incredible round shoulders" (3/13/37) and she was very conscious of a gradual decline into a similar posture. She was sure that dancing had helped her to maintain a good posture. Eric had also noted, "I'm sure we stand much better than we used to do!" (1/20/21). William, a widower, who was an experienced ballroom dancer having danced for many years with his wife prior to her death still advocated attempting the correct technique in ballroom, "It's about balance, it's about posture isn't it, you know?". Florence, who was short in height and struggled with osteoporotic back pain, and Jeane, who also had back pain, found it a challenge to demonstrate a correct posture 'in hold' due to these physical problems. Ronnie, recently retired and free from the restrictions of his desk job

seemed to revel in the opportunity to move during the dancing, "But for an hour, when you're dancing, you're straight up and you can feel the difference, it sort of stretches your back muscles a bit, but it's nice to be... the posture" (2/13/338).

As discussed in section 1.5 maintaining balance and preventing age-related decline is an important factor that can reduce the risk of falling for older adults (Wilmouth and Ferraro, 2013). Several of the participants considered that there had been improvements in their balancing abilities due to participation in the dancing. Indeed Michael proudly noted, "I think my balance has improved, I can stand on one leg now!" (2/13/370). Rachel also observed that her partner Richard's balance had declined recently since he had had a fall:

And it obviously, maybe it does have an effect on his balance, because it is, I've noticed the difference recently, this last few weeks. I put it down to his fall and not going to the gym but actually it may be partly that he's not dancing, because it does have, you know, you're stopping, you're starting, you're moving, you're turning, all these kind of things that in day to day life you're not doing. (2/6/146)

Whilst some participants did not overall consider the dancing to be particularly strenuous or beneficial to their physical health, there was a general theme that the dance did provide a form of physical activity that provided individuals with various different levels of cardiovascular challenge, from Claire's description of it as a good form of "gentle exercise" to Ronnie's "it's strenuous".

Given the previously discussed physical and functional benefits of ballroom dancing, it is of interest that some participants did not consider it beneficial to the physical aspect of their health. Sheila and Patrick discussed this:

Sheila: I think you particularly dance for the brain angle of it don't you?

Patrick: I think so yes

Sheila: You sort of think to yourself, I don't think it's doing the physicals any good really. (1/11/18)

Isabel, at 67 with no known pathology and taking no regular medication concurred with this stance, "I don't know that the dancing has made a lot of difference, like you say, physically,

but definitely, what would you call it? Mentally" (3/7/185). She was currently an active individual, in good health and did not feel particularly physically challenged by the dancing. Eric felt his past history of running marathons and playing squash meant that dancing did not really provide any additional benefit to his physical health either and Pamela was also quite ardent that, "I don't think it would make any difference whether I did it or I didn't..... Yeah, I mean it doesn't, doesn't stretch me at all doesn't that hour" (1/4/109). However she did admit to this perhaps being because some weeks she did not have a regular partner to dance with during the session. At times she was the odd one out and not able to dance or was dancing with a new partner who was not as adept at the steps, thus spending more time on practising the steps than performing the actual dance. Therefore, she was not able to be as active as the other group members. Isaac also suggested, "It's not so much a workout I'd say, its more, you know, a mental, a coordination thing really, you know, getting my brain to tell my feet to do it I'd say" (1/6/167).

A very positive theme throughout the interviews was that this was an enjoyable form of physical activity, which will be considered in further detail in Chapter 11. Regardless of the difference of opinions about the intensity or physical gains from the dancing, Claire summarises the participants' common thoughts, "It's like ballroom dancing, I enjoy it and the added bonus is that you know, you feel a little bit fitter at the end of it" (2/6/178).

Any physical health benefits gained from the dancing were considered to be more of a 'bonus' by participants, as the sense of enjoyment provided the stronger 'draw' for individuals to adhere to the dancing classes. Les, talking about his recent heart attack, noted, "While I'm not thinking about it I'm actually doing something about it and but I'm enjoying myself at the same time" (1/8/30). Participants did not necessarily notice the physical health benefits because of the over-riding enjoyment. As Irene suggested, "I won't say health benefits..... Mine is just that I like to dance. I just love dancing. That's it really" (1/18/1). Ronnie and Julie discussed in a similar vein:

Ronnie: It's a good, you are exercising, but sometimes you don't always think about that at the time do you.

Julie: You don't because you're too busy enjoying yourself.

(1/14/405)

At times the social aspect of the dancing provided some inspiration too. Robert often talked of being 'amazed' at how dancing enabled participants, "Well you meet people. We met one

lady who'd had a stroke and she was doing brilliantly and we thought if it can do things for her, you know, it obviously can do things for us too" (1/6/22).

8.4.1 **Summary of Physical Health Perceptions**

It can be seen that participants almost seemed oblivious to any physical health benefits they gained from dancing. Whilst some participants thought that dancing provided minimal, if any, physical health benefits, these same participants did however admit that they 'felt' the intensity of the dances at times. As Eric highlights, "so you're dancing for an hour and you're getting, you get a lather on! Definitely you, it ups the heartbeat somewhat it must do" (1/8/18). Florence also noted getting "a bit puffed" (3/9/275) in certain dances and Claire supports this, "sometimes, you know, you come away and you think well that, I've worked hard today" (1/5/143). Isaac was another participant who did not think that he had physically benefitted from the dancing but also admitted "sometimes she does work us hard, occasionally you feel like, you know, you've been for a run" (3/3/79). If the participants are feeling such sensations of being 'puffed', 'getting a lather on' and having been 'working hard' these are all indications that there are beneficial physiological challenges for these individuals even if they do not consider there to be significant physical health benefits. By nature of the sensations of exertion, there will be a training effect and cardiovascular and musculoskeletal adaptations and most likely improvements and a prevention of physical decline or at least maintenance of functional independence.

There was some consideration too that the types of dance provided different levels of cardiovascular response. Pamela, Florence, Rod, Les, Elsie and Julie all mentioned they had noticed that some of the different dances were physically more challenging than others. Often the jive, quickstep and Latin dances such as the cha cha cha or salsa were considered to be the more physically demanding, strenuous dances because of their faster pace. Therefore, there was some contradiction even amongst individual participants that they did not find the dancing physically demanding, yet then highlighting they did in fact become breathless or find some of the dances physically strenuous. This returns to the point that participants did not notice the physical demands of the dance because they were indeed 'too busy enjoying' themselves.

8.5 **Chapter Summary**

The study aimed to explore the role of social ballroom dancing for older adults; therefore, by nature of their age, participants were retired or worked minimal part-time hours. Acknowledging that retirement brought with it changes in social circumstances and activity levels, participants discussed the changes that this might bring to their health. Some

participants were concerned that the loss of their working routine brought with it lower levels of activity. They reflected upon how individuals they knew had become completely inactive upon retirement, whilst others considered that there would now be more time and opportunity to become more active and improve their health.

The themes presented within this chapter highlight the participants' views that ballroom dancing can help to encourage active ageing for older adults. As an enjoyable and fun form of physical activity, it was seen to help prevent inactivity and apathy. Many participants expressed a desire to encourage others to join them ballroom dancing, indeed some of the couples had become involved through the encouragement of friends at the classes. Whilst participants often did not appreciate the physical gains from their involvement in ballroom dancing, particular benefits were noted in those who had known pathologies. Freedom of movement, maintaining or increasing mobility levels, improvements in posture and 'stamina' were acknowledged. However, due to the complexity of the activity in terms of learning new steps and routines, many participants considered ballroom dancing to be more of a mental rather than physical challenge. This was also considered to be important and an element as to why participants practiced ballroom dancing. It was both for their desire to learn a new skill, but also perhaps to maintain good cognitive function and delay the onset of dementia related changes. Such preventative changes to cognitive decline have been discussed by Verghese et al. (2003) who found dancing to provide a preventative effect against dementia. Farnell (1999) suggests that memories remain with individuals in the form of "neuromuscular patterning and kinaesthetic memories" and become part of one's "bodily modus operandi" (p.353). This might in part explain why ballroom dancing may be beneficial for people with dementia who have previously danced, because these lived experiences become inbuilt into one's body. The findings that participants considered ballroom dancing as equally important for keeping the mind active as well as the body also concurs with the previous work of Thomas and Cooper (2002) in their study of social dancers.

Ballroom dancing appeared to provide an avenue for adaptation to, and acceptance of ageing. Although at times, learning the dances or working with a partner proved frustrating due to individuals' limitations of both a physical and cognitive nature, adapting to difficulties and adversity and accepting change are important elements of resilience in ageing (Wagnild, 2003, cited by Wiles et al., 2012). Indeed at times participants were able to 'disguise' their disabilities by being able to demonstrate *ability* on the dance floor.

Therefore, it is suggested that ballroom dancing can assist individuals with the development or nurturing of personality characteristics that can contribute to resilient ageing, such as

having inner strength, being adaptable, patient and able to weather adversity (Wiles et al., 2012). Gattuso (2003, p.174) discusses, "a more complex balancing of the pains and pleasures associated with becoming older" and how this can encourage resilient ageing. Some of the interview excerpts above demonstrate this; in spite of the physical pains participants may have been challenged by in life, ballroom dancing provided a balance as it was a very pleasurable experience for participants.

The importance of the dance teacher being supportive and flexible was noted within the interviews. This and other elements of the class itself will be considered further in Chapter 9, alongside the given reasons for the participants' attrition, adherence and maintenance of or relapse from ballroom dancing.

Chapter 9 **Class Commitment and Congruence**

Twenty-four of the 26 participants at baseline attended a class at a local council-run sports centre, as their main dance class, which was held on a Monday afternoon. Some participants were also involved in additional dance classes and tea-dances at different times and venues. It is the Monday afternoon class that will mainly be discussed in this section and comparisons made to some of the other classes that participants attended. Chapter 9 considers *class commitment and congruence*; it presents elements of the dance class that were deemed important by participants in maintaining adherence to the classes. It is presented as the sub-themes of *The Dancing Class; Acquisition of Dancing Skills: Something I Can Do; Action, Commitment and Maintenance* and *Relapse: Barriers and Interruptions*.

9.1 **The Dancing Class**

When considering the environment of the dancing class, participants discussed the location and its convenience, particularly such benefits as free parking spaces, it being a 'safe' activity and being close to home or simply knowing a familiar transport route. For adults over the age of 65 this is known to present a significant problem to leaving the home and participating in social and community activities (Allen, 2008). Kathleen in particular had spoken of the importance of the logistics of getting to the class and knowing where she would be able to park to the point where she simply would not go *anywhere* if she did not know. Cheung-Ming Chan and Tao (2015, p.55) discuss the concept of the construction of age-friendly environments to encourage the active engagement of older adults in society and 'enabling' environments to promote community participation. Part of this concept considers aspects of one's environment such as convenient transportation, age-friendly buses, barrier free buildings and facilities to allow independent living. The main dancing class that these participants attended was run by a local council's community dance officer in a council-run community leisure centre. Age-friendly environments will require the consideration of local council planning teams in terms of transportation links and convenience of access and therefore planning teams have an important role in enabling older adults to participate actively in their community. Spatial and transport planning is highlighted as being fundamental to public health and addressing the determinants of health (Tomlinson, Hewitt and Blackshaw, 2013, cited by Hartwell, 2013, p.230). Haskell, Lee, Pate, Powell, Blair et al (2007, p.1089) also highlight the complex interplay between social and environmental factors, the exercise programme itself, personal schedules and commitments and weather and travel as all impacting upon one's ability to sustain an active lifestyle.

In addition to the external environment's physical space, the internal environment of the venue was deemed important; that is the size of the hall itself. One of the halls in particular where the dances were held was not considered to be of a sufficient size for dancers to practice their foot work and floor-craft.

The consensus was that the afternoon classes were better in terms of timing, since the participants were retired. Although some did attend evening dance classes, there was a feeling that attendance at these was sometimes more of an effort, as Isaac mentioned "the only thing about salsa it's 8 o'clock at night, so you know you've already settled down for the night and you're getting up to go out again, so it's easy to miss that" (3/5/110). Similarly, Sheila had suggested this late-night 'effort' was particularly so in the winter months.

It appeared that one of the key factors that kept participants going to their particular classes were the dance teachers; their teaching skills, personalities and an ability to understand and adapt dances dependent upon one's individual capabilities.

"The teacher* relates very well to older people, without making us feel old and fuddy duddy", Les had mentioned (2/3/75) and Isabel was happy that, "We can ask her anything. She helps anybody doesn't she?" (3/4/116). Alan also made a strong statement about the teacher, "I'm not sure how it would be if the teacher* wasn't there, because I think the teacher* is the intricate part of it all, especially her personality, you know she goes the extra bit...." (2/25/641).

(* name replaced with 'the teacher')

Julie summarised the personalities of her teachers nicely; their patience, understanding, approachable nature and support, particularly with her 'flare-ups' of Rheumatoid Arthritis:

She has the patience of a saint, oh both girls do, they both, to be in that job, you need special people with extra personal skills and the two girls who do it are truly wonderful people. I don't think we could praise them high enough.....It has, it's made, because we were, we may have mentioned it to you before Sarah, we were rather nervous about going for the first time because we'd never danced before and but the support they've given and how they just, oh, it's lovely to go to their class.

(3/7/163)

In Sheila's class with different teachers she noted:

*Teacher 1** and *Teacher 2** work very, very well together and I wouldn't go if I wasn't having a good laugh as well, you know, we all learn together, we fall about laughing you know and we all laugh with each other not at each other. (1/6/1)

(*names replaced with *Teacher 1* and *Teacher 2*)

She also talked about how the teachers "understood" her husband and how best to explain or demonstrate steps to him when he was "totally befuddled" (3/10/288).

The class structure was not a formal course for a set number of weeks, more so it was a programme where beginners could join at any point and people could go to classes week-by-week as they pleased. McKinley et al. (2008) also found in older adult tango dancers such a programme structure allowed participants the opportunity to be absent from a short period of classes, perhaps due to a holiday, without resulting in a decline in function upon return. Whilst this provided a supportive environment where participants felt able to return after a period of illness, injury or a holiday, it also proved to be a challenge for the teachers managing the mixed skill level of members in the class. The Monday class was run by one teacher and this was very much a mixed ability level class. Some people had been dancing for years and others might have been starting their first class. In recognition of this, Les in particular (due to his long ballroom dancing history and excellent skill level) was asked to become a peer mentor for some of the dance classes. As he explains:

It's very difficult, that's one of the problems with that programme, is if you go to a dance school, as you know, you start at beginners' class and it sort of progresses with the same people and if somebody misses a week, well you can catch a week up, but when somebody new comes in that doesn't know their left foot from their right foot, err, after three weeks, they're totally lost and that's what she's getting constantly, people coming in that don't know what to do. (2/4/94)

Les, Sheila and Patrick had all participated in some dance leader training run by the local council to support individuals in running community based tea-dances or help out at local ballroom dance groups. Les was acting as a peer mentor for some of the council run classes and said that teaching others to dance "...keeps your mind going, it keeps your body going and trying to teach somebody else to do it is quite good fun!" (3/3/72). Sheila and Patrick were leading tea dances in their local community hall and helping at another over-60s

dance group. Sheila, being a retired teacher herself, enjoyed being in that role again and said she herself tried to provide the same sort of "laid back" (1/7/26) atmosphere for those that attended her groups, with the same aim of enjoyment and laughter as her own teachers had in their ballroom classes.

Another common topic was there being 'no pressure' in the classes, just as Sheila aimed to re-create in the classes she taught. As Ronnie explained he felt that:

*The teacher** is good at it, she's very, very good at her job. I think she recognises that some people have the ability to be good and other people have the ability to be alright at it. So there's no, there's no pressure, you learn it at your own pace.

(1/12/339)

(*Name replaced with 'the teacher')

One of the ways in which the class was structured to *enable* participants and to reduce 'pressure' was that a row of chairs was laid out around the room as standard practice; this encouraged dancers to take a break or sit out a dance if they needed a rest. This was particularly useful for some of the participants such as Les, Brenda and Robert who had cardio-respiratory conditions; as Robert noted "I find it's easier just to sit down for a few minutes and get back up again and dance again" (1/15/1).

The Monday class consisted of teaching four ballroom dances, a quickstep, a waltz, a jive and the cha cha cha. On occasions if the main teacher was unable to lead the class it might be arranged for a substitute teacher to run a salsa class, for example, as something different for the class to do. Some of the participants also attended ballroom dance classes with more of a sequence dancing focus, where types of waltzes and quicksteps were taught amongst others. Les referred to sequence dancers as, "...wind-up toys.... You know, wind them up on the floor and they all go and do the same thing, all the same time" (3/3/72) and considered this style of dancing restricted his ability to express himself. However, some of the other participants enjoyed learning sequence dances and these were also introduced to the Monday class as a new dance to learn, to change routines and keep participants motivated.

Michael and Emily, who participated in both social ballroom and sequence dancing classes suggested that they preferred the sequence dancing, where a style of dance such as a waltz is performed in a set sequence of steps by each couple in the group. They considered this structure was easier to learn due to the repetition of 'sets' within each dance. Cooper and Thomas (2002) also highlight the different dynamics of sequence dancing compared to

ballroom dancing on the dance floor and the use of space. Ballroom requires longer steps and more use of the floor space, something one of their participants described as being dangerous and that, "at our age, you don't want to be bashing into people" (Cooper and Thomas, 2002, p.695) presumably because of the risk of serious injury. It was felt by several of the participants that the sequence style ballroom dances were easier to learn and perform and as Michael mentioned "once you've learnt to dance it's just progressive all the way round, with the waltz and the quickstep and the cha cha, there's that much to learn, that many different moves, I just forget them" (2/9/265). He continued to note, "we can come away disappointed sometimes with, they may not have done the dances we can do" (3/7/166).

In addition to the types of dance the number of different dances taught in one session was also considered, with participants agreeing that 4 dances meant a very fast pace of learning the steps. This was perhaps difficult if the teacher had to instruct beginners on the basic steps before they were able to do anything, sometimes leaving the more experienced dancers a little disgruntled, as Eric notes, "we tend to try and avoid the ones who are learning the new steps" (2/3/76). However, in contrast, Brenda was happy to be left to, "muddle through our own way of dancing the dances" as a more experienced member of the group. This allowed the teacher to be able to concentrate on working with the newer members of the class "which is fair, you know. We're only going for the social side of it as much as the dancing. They're there to learn" (2/4/24). This was an interesting and important point that Brenda made; the social side of the dancing was *as* important as the dancing itself for her. It may have even been more so for Brenda and her husband since they had to sit out of dances and rest frequently due to their health conditions.

In terms of the content of the classes, although the participants often *started* the dance classes suggesting they 'just wanted to learn to dance' and they were not particularly concerned about embellishing their dancing skills, it seemed once the participants had mastered the basic steps and routines that they acquired a thirst for developing their skills. This would include the addition of new and more complex turns, maintaining correct posture and hand positions. This was important to keep participants engaged and motivated to return.

The type of music and the dances learnt were also important for reasons of reminiscence; they were dances learnt during earlier years, danced to music from their youth. Isabel made a comparison to the music played for other physical activities "I wouldn't go to an ordinary keep fit class because that hasn't, no, no music" (1/4/20) and Patrick and Sheila agreed that the music played at their dance lessons helped their dancing because it was music they

liked. Music accompaniment to physical activity can enhance pleasure and sense of psychological well-being (Mavrovouniotis et al., 2008) and it can be tailored to the age-group of dancers to assist with reminiscence of their youth and helped overcome self-consciousness (Lima and Vieira, 2007). Cooper and Thomas's (2002) social dance participants similarly noted that the music played for dances played a significant role in enhancing their dance experience.

Managing a large dance class of mixed ability adults presented a challenge to the class teacher. Structuring the class, aiming it at the right level to maintain interest for those who were more experienced, yet making sure the beginners were learning the basics and that all participants felt comfortable re-joining a class if they had missed sessions, was quite a skill. This did present a challenge and this is when the camaraderie that had developed in the group was of assistance as some of the more experienced dancers would act as peer mentors for beginners. Within groups of new friendships, participants would ask each other for help if the teacher was busy tutoring others.

The atmosphere in the classes attended by participants was considered welcoming, comfortable and relaxing, as Elsie recalls her experiences with other classes, "you don't feel self-conscious, if you go wrong, you go wrong. He did take me to X once. I said, 'I'm not coming here again!' because I felt like an elephant going around the room!" (1/3/71) because the level of that particular dance class was too advanced for a beginner.

Whilst the dancing classes appeared to improve confidence and self-esteem amongst participants because of the skill acquisition and feeling able to succeed at a new challenge, there were also some points raised about participants still feeling a lack of confidence in their ability to perform at times. As Eric notes:

It's not just confidence, we feel that we can get up, actually one outweighs the other because you feel that you can get up because you know the steps, but then personally, I mean it probably doesn't apply to Irene, but personally, I'm afraid of showing myself up (Irene laughs), you know. (2/8/229)

Jeane also concurs with this idea, "then of course you have the tea dances don't you, you see, we're not good enough yet, we decided we're not going to this one at Christmas" (1/13/398). Although the participants were learning dances and improving, when they considered 'getting up' to dance in front of others in a different environment such as at a social dance event, they still lacked confidence and feared embarrassment.

Kathleen had formed a dance partnership with Les, who at 68 was 15 years her junior, as both were experienced dancers who attended the classes alone. In spite of her youthful appearance and ability to dance, Kathleen had concerns that:

I just think does he, you know, is it alright me dancing with him, does he want to dance because I'm an older, I think I'm an older woman, I'm fat and I think he'd rather have somebody, you know, a nice young partner to dance, a younger slim, that's what I always feel, somebody wants somebody younger. (1/12/348)

Yet at the same time she was able to see that the dancing provided some confidence, "It makes you feel better, it makes you feel oh I'm not as bad as I probably think I am, you know, but when I look around at other people my age, I think I do quite well really" (2/7/203).

Kathleen's final point of interest considering confidence was regarding her fall because of the bad experience that she had and consequent *lack* of confidence. She noted, "When you're dancing you've got a partner to hold onto, you know, you can just carry on and you don't think about it. But I am always aware of it when I am walking on my own anywhere" (3/3/54). This was another reason why dancing proved to be an activity where she felt enabled and more confident in her physical abilities, because it was a partnered activity, she felt safer participating.

Once dance routines were mastered to a sufficient level to complete a dance and move around the dance floor, there was a sense of participants being, 'not as bad as I thought'. The dancers were learning routines and advancing skills and many mentioned their desire to be able to 'get up and dance' at social events, although often lacked the confidence to do so.

9.1.1 **Summary of the Dancing Class**

The key factors that encouraged attrition in the dancing classes included the personality of the dance teacher and their ability to support and understand the needs of participants. Providing a welcoming and supportive atmosphere where participants did not feel under pressure to master dances but could work at their own pace, allowed for periods of absence from the classes and enabled ease of return.

An accessible and safe environment for the classes and at a suitable time of day (preferably during day-light hours) was also seen to be a motivating factor.

Being able to complete a dance and demonstrate good levels of floor craft began to give participants the confidence to 'get up' and dance at social events, yet for some this proved to cause a little anxiety as to whether they would be good enough or 'show themselves up'. As skill levels progressed participants did not wish to just 'settle' at that level. They then began to express a desire to develop their techniques further. Therefore, there was a need for the class structure and content to continue to challenge participants at all levels to encourage motivation and maintenance of the ballroom dancing activity. The notion of skill acquisition will be considered further in the following section 9.2.

9.2 *The Acquisition of Dancing Skills: 'Something I can do'*

A consistent theme throughout the interviews was that of participants starting to dance around retirement age. This was due to having previously been involved in dancing during their childhood, early adult years or it was a new skill some of the participants had always wanted to learn. Les returned to ballroom after having danced at a competitive level in his younger adult years. He joked, "you *can* teach an old dog new tricks!" (3/3/63) and confidently remarked "it's something I *can* do!" (3/2/57). Les saw retirement as an opportunity to start dancing again, "It's my thing, yes!" (1/15/5) and meet a new social group, having discussed how his social circle had diminished post-retirement. He recognised that dancing was not an easy skill, full of 'unnatural movements' but as a peer helper at some of the dance classes in his local area he recognised the pleasure dancers gained when they 'got it'.

Whilst some participants were happy just to be able to move around the dance floor initially, once there was acquisition of some of the basic skills enabling participants to complete a full dance, this seemed to bring with it a desire to improve, to move to a new level and to perfect the performance. Florence and Isabel in particular had considered themselves ready to move to an 'intermediate' or 'improvers' class. However the structure of their dance class was on a rolling programme. There was no start or end date, new people came and went and when new class participants arrived they would need more assistance from the dance teacher, thus leaving those who had been dancing for longer periods with less direction to improve upon their technique. These two friends in particular appeared to be perfectionists and Isabel talked of "we're very often practising when everybody else has gone for tea aren't we? But we like to get it right don't we!" (1/13/1).

Being able to complete a dance and improve upon the skills learnt was also a very pleasing aspect of the classes as Eric highlights “learning to do something better, you know, being able to go to a dance and be able to get up and do a dance and know what you’re doing rather than just shuffling round the floor” (1/6/16).

There was also recognition that there had been improvements in their dancing skills, and this was particularly evident when new members started the group, as Isabel suggested, “we see newcomers and think gosh! We must have been like that when we started” (2/8/216). This was not so much a negative reflection of the *lack* of skill demonstrated by novice members, but a recognition that even if they do not think that dances are going particularly well, they have in fact learnt a considerable amount since starting the classes, “and we’ve learnt how to do it properly” (3/2/50) Isabel expressed.

The element of a new challenge was also discussed and typified by Irene’s comment:

I mean one of my daughters said it’s great because I joined a choir a couple of years ago as well and er she came to see me and she said, ‘you know it’s great that you started a challenge at your age’ and it’s the same thing isn’t it dancing? A challenge.

(1/17/30)

Irene’s daughter’s comment here ‘at your age’ although encouraging, also demonstrates the social expectations of ageing in a more negative manner, that an age related decline in health is inevitable (Wolff et al., 2014) and that it is unusual or unexpected for people to begin to learn new skills in older age. As an alternative view, Roberson and Pelclova (2013) liken the social dance environment to a “playground where there is music, people, dancing and fun” (p.5).

Participants mentioned how learning dances provided a ‘sense of achievement’ and Claire in particular discussed how learning, practising and then performing the dances enabled this sense of achievement (1/13/399). Indeed she and her partner Isaac had demonstrated their newly acquired dancing skills at local events in front of an audience to promote the dance group activities, a performance that they considered ‘brave’.

Whilst there was some apprehension at the thought of being watched by others or performing, some participants discussed that once they had achieved a certain level of dancing skill, they liked to ‘show off’ their achievements. Eric highlighted:

We've got to the situation now, to be honest, we like to show off a little bit don't we?
You know if we're with a group that can't dance and there's a bit of music, we get,
we don't stand back, we stand up and do our little, not demonstration, but we're
proud we can do it! (1/18/10)

Michael talked of going to the Tower Ballroom in Blackpool to "strut our stuff" (2/6/175) with Isaac noting that after years of watching his sister dancing a jive when he was younger and always wanting to be able to dance a jive himself "now I can I think! So I think that's my *pièce de résistance* anyway!" (2/11/331). He had also enjoyed a dance at the Tower Ballroom as it provided an opportunity to "show off a bit, you know, to actually do it in front of everyone else" and recalls how "everybody was sort of watching us" (1/15/446).

Whilst participants enjoyed learning the dancing there was discussion that it was not an easy activity; it required considerable concentration. Of interest, in female/ male dance partnerships the females often commented upon the male partner being slower to remember individual steps or dances, with the males usually admitting this was the case. Isaac and Claire discussed that as a couple they thought they were doing really well and had come on, "leaps and bounds", with Isaac proclaiming, "I think I'm brilliant!" and Claire answering, "...yeah, well you are really, *for a man*..." (2/1/14) but that Isaac "hadn't a clue" when first being taught steps or a sequence and he was not really able to "connect it altogether until the music comes on" (2/5/145). Irene at times appeared exasperated at Eric's inability to remember steps and discussed how she had to learn the 'lead' as well as the 'follow' parts so that she could show him and practice when they got home (2/6/163).

Michael and Emily also had a greater teacher: dancer ratio in their smaller class (3/1/21) whereas the ballroom classes were of a faster pace with less time to practice each dance before moving on to the next dance. This led to some confusion and as they were in a larger mixed-ability group led by one instructor, there was less time for individual correction. However, since starting their dancing classes only weeks before becoming involved in this study, Michael and Emily had started to attend various difference dance classes and tea dances and recognised that, "...we don't just sit there now, we can get up and we can do most of the dances now" (Emily, 3/2/1). They had become one of the couples most involved in dance classes during the course of the study with Michael noting, "We said we'd give it a year and then possibly call it quits but as the months have gone on, I seem more interested to stay on into the next class up" (3/14/352).

Many members of the group observed that a 'natural sense of rhythm' was necessary to be able to learn dances effectively, but that some members of the class really struggled with being able to 'dance to the music'. Kathleen noted some individuals "just do the step and ignore the music" (2/12/338). Many of the participants noted having observed individuals who had a lack of co-ordination when dancing or a lack of rhythm yet were not particularly bothered by this because they simply enjoyed participating in the dance and trying. Rod mentioned a participant in the class "when I watch him doing the cha cha cha, it's very clumpy and he does it a bit like a horse, clomping. He's no, there's no flow, there's no rhythm there" (1/24/687). Rod's opinion was that:

The art of dance is complex.....I mean having a sense of rhythm helps, if you haven't got a sense of rhythm, forget it, we've got that. But if you haven't got that, you might as well just not bother, it doesn't matter how good your memory is.

(1/5/122)

This is of interest as his wife Amy considered him to have a very poor memory and this led to trouble remembering steps and sequences. Rachel's opinion of Richard was also similar, "It's just getting his, his brain into gear literally, you know, get the right movement, the right method and then you can do it can't you" (2/1/34).

Pamela also mentions having to think carefully about the steps and sequences and had trouble remembering the technical terms for the moves "I mean I can get round the waltz floor with somebody who knows what they're doing, but if anybody had told me have you just done a natural turn or a reverse turn, I don't know I've just done it" (3/28/765).

In terms of level of skill there was little mention within the group of wanting to dance 'perfectly', as Emily mentions, "well I don't intend to do it perfectly, just competently, not perfect but competent" (3/6/151). Florence in contrast was more of the opinion she wanted to do the dance "correctly first, enjoying it second" (1/8/3). Participants also talked of enjoying learning new steps, or even simply the names of steps and certain types of turns. The variance of steps learnt and development of sequences within dances kept participants interested and as Simon mentioned "we'd just like to move up to a higher level" (1/12/362). Robert also considered watching other dancers when he had been away to dance weekends on holiday with his wife Brenda "they put the embellishments in that obviously we can't do" (1/3/29) "the thing is the core steps are there, the basic's there and we obviously, we'll never take it to their level, but that doesn't matter" (1/3/39). These 'embellishments' and the aesthetics of the dance were something that was considered by

participants to be an important factor in their enjoyment of both performing and watching other people dance. Once the basic skills were mastered, participants did begin to want to learn more and advance their skills and perfect the dance, even if it had not been an initial priority. Factors such as 'posture', 'elegance', 'deportment', 'rise and fall' and 'flamboyance' were discussed amongst participants as the 'next stages' of skills to learn and improve upon, alongside dressing for the dance, the ballroom 'costume', 'beautiful gowns and everything' and as Les noted for special ballroom occasions, "You sort of want to put your blue shirt and bow tie on, rather than put the white shirt and a tie on" (2/9/274). Dressing for the dance appeared to equate to a certain level of skill acquisition for participants. Not only did they enjoy adding these elements to their own dancing skills, the participants also enjoyed watching more experienced dancers at special events they attended, such as on dance holidays, at tea dances or when visiting the Blackpool Tower Ballroom.

These findings relate to Harter's 'Competence Motivation Theory' (1978 cited by Cox, 1998, p.245) whereby it is suggested individuals are intrinsically motivated to achieve competence. As individuals attempt 'mastery' with the outcome of a self-perception of success and positivity, this in turn provides a feeling of competence and promotes greater competence motivation. At this point, as demonstrated when the participants felt they achieved basic competence in the dance steps, they were then encouraged to pursue further mastery attempts and perfect and advance their skills.

Rod discussed he felt there was some element of "peer pressure to perform..... I'm very conscious of the fact that I don't want to be, you know, lagging behind anybody else, I want to be, oh yeah, I don't want to be seen to be bumbling along" (1/23/664). This was also reflected in Ronnie's comment that some of the group were "deadly serious" about the dance but for the moment he and wife Julie were "learning and enjoying it and in a few years' time, with a bit of luck, we might take it deadly seriously, but at the moment, we're learning it and we're enjoying it" (3/10/256). Michael felt that some of the more advanced members of the group:

Just dance past you and they ignore you and such like, get you out of the way, that's how I feel. I mean it's certainly a bit stand-offish compared to *dance class A* and *dance class B* because we're all on the same level there, at the *dance class C* it's different levels and we just get lost.

(2/1/59)

9.2.1 **Summary of The Acquisition of Dancing Skills: '*Something I Can Do*'.**

All of the participants involved in the study had started dancing classes at the point of retirement or as they were about to retire. They saw the classes as an opportunity to learn a new skill or return to an activity they used to do prior to the time commitments involved from raising families and working lives. For couples it was something they could do together after having perhaps spent many years doing different activities on a day-to-day basis during working lives. Cooper and Thomas (2002, p.690) suggest social dancing for older adults can provide "a sense of worth and achievement in the skills learnt through dancing, when other skills are no longer of use" and suggest this to provide a sense of "cultural capital" against ageing.

Ballroom dancing was seen as an activity that 'I can do', not too physically demanding and enjoyable at the same time. At times some participants found steps and routines difficult to recall so perhaps provision of the music and forms of instruction, such as diagrams, might be provided to allow participants to practice at home in between classes.

It was also seen to provide a good social network for participants and this became a very important factor in the participants' continued involvement in the group.

Whilst participants did not seem to be particularly focused on perfecting dances to start with, there was a sense that as they progressed, gained confidence and became more competent in the basic dance steps, that they did show a desire to improve upon 'embellishing' points, such as maintaining correct posture and learning more complex routines. As activities such as ballroom dancing tend to involve learning a fixed set of steps or routines in beginner-level classes at least, it is important not to dismiss the possibility of participants becoming bored and leaving classes if not sufficiently challenged. Therefore the importance of a teacher being able to recognise this and progress the participants' skills should not be under-estimated.

9.3 **Action, Commitment and Maintenance**

An initial question was posed to participants during the first set of interviews at baseline, regarding why they had started ballroom dancing classes or whether there was there a particular event that initiated starting the activity again. For many of the participants it was due to entering the retirement stage in life, where work had ceased or working hours were decreasing, as Julie noted at this time, "If we hadn't of been doing the hours that we'd been doing over the years, it's probably something we'd have taken up earlier, but we couldn't have given it the attention that it deserves" (1/9/274). For others they had been 'inspired'

by the British Broadcasting Corporation (BBC) series *Strictly Come Dancing* or there had been a change in circumstances such as bereavement. Often participation was through the encouragement of friends. Indeed, the social element of the activity had been an important contributor for some participants to not only initiate class attendance, but also for remaining involved in dancing. Sheila discussed:

Friends, it was two friends 8 years ago came down and said hey we're getting older, we've got to do more things, there's a dance studio in the village.... let's have a go, let's have a go at dancing and we honestly hadn't thought about going had we. It wasn't us that had thought it was it? (1/5/8)

Eight years later they were still attending the dance classes with the friends and the close proximity of the dance hall to their home had also been an important factor in maintaining this activity, as was the fact that it was supporting the village. Community was an important part of the dancing for Sheila and Patrick, having themselves then trained as dance leaders to enable them to run tea dances in the local village hall. In their experience running the monthly tea dances they had also spoken to other individuals for whom dancing had become an important part of life:

Sheila: There was one lady who'd been very, very active in the Salvation Army and she was heartbroken when the Salvation Army closed and she comes and after she'd been coming a few months she said to us, 'do you know, this has changed my life.....

Patrick: She comes with her sister and they're getting a lot out of it and you just think, well, you've probably turned her life round for the latter end of her life, which has got to be good hasn't it? (1/9/32)

Isaac and Claire had started ballroom dancing lessons because their friends Eric and Irene encouraged them to do so during a weekend away in Blackpool, which had involved a trip to the Tower Ballroom. Isaac and Eric were old friends and Isaac was keen to spend more time with Eric now they were all retired. Indeed with regard to their salsa classes, Isaac and Claire talked of not going for a few months because the friends they went with were unable to go due to family illness and "we didn't have the incentive really to go without them, did we" (3/5/110).

Kathleen had also started sequence dancing lessons with a friend, who was still working as a supply teacher. Due to her work commitments the friend was often unable to attend the classes but Kathleen kept going by herself and then started the ballroom dancing classes. She noted that learning the new techniques and going to the class was now the highlight of her week. Also having been widowed with a daughter living in America, Kathleen was thankful for the social involvement that the dancing classes gave her and this was a key motivator to her maintaining a commitment to the classes. As a competent dancer she had tended to pair with Les during the classes and they were considered the best dancers in the class by their peers, something which, at 83-years of age, delighted Kathleen.

One of the factors that made some of the participants somewhat apprehensive about attending classes initially was that it is a partnered activity and they were single. Friends Florence and Isabel formed a dance partnership and this worked for them by taking it in turns to learn the lead or follow roles. They tended to work together each week as they formed their routines; not liking it when one or the other was unable to go and they had to work with a new partner who they were not used to. Isabel recalls:

I'd wanted to go somewhere to learn to dance, or just to dance but the problem was finding somebody to go with to dance with, so when this came, when K came to Mirfield I thought I would go and see what it was all about because you didn't need a partner, erm, Florence, like she says, wanted to go so it was a good opportunity and I just love dancing! Because if you haven't a partner you just don't go to dances do you? (1/3/4)

The opportunity to ballroom dance was often mentioned as having diminished during participants' adult years; through family life, having children, social lives revolving around their children (Claire, 1/16/479) and employment. As Irene noted if she attended discos such as at family parties, the music was, "jigging music" rather than music to perform a quickstep or waltz to (2/9/256). Therefore when circumstances allowed, participants often actively sought the opportunity to join a dance class, particularly if it was something they had been involved in during childhood or younger adult years.

Amy discussed that dancing was one of the things that she had always wanted to do and now time allowed, she was fulfilling her ambition "before I die, I'm going to learn to dance, preferably *with* my husband" (1/16/467) and indeed her husband Rod duly attended classes with her. Isabel saw the dance classes as the only way she was going to be able to

participate, she had been inspired by the television series *Strictly Come Dancing*. It was something that she had always wanted to do, but her husband would not entertain the idea of dancing so she had never felt able to until she was widowed. Both Florence and Isabel and indeed some of the other participants considered it almost 'inappropriate' for single women to be going to dancing classes alone, no doubt stemming from attitudes from their youth. Just as Isabel herself expressed above "you just don't go to dances do you?" (1/3/14) and Irene expressed in an almost sympathetic tone "I think it must be dreadfully hard to walk through the door on your own and say I'd like to learn to dance" (2/16/471).

In spite of being a very competent dancer, Les also spoke of being apprehensive about starting the classes again upon retirement. He had joked his incentive to dance when younger had been 'girls' but in later life found himself choosing dancing as one of the activities available to him as part of his cardiac rehabilitation programme:

You know the hardest thing is getting up and going through the door the first time, that's always hard is walking through the door the first time and thinking 'oh I'm here!' It's still a new environment, it's still new people you know... Well I knew what we were going to be doing, so the apprehension of not knowing what we were going to be doing wasn't there, it was just sort of who's going to be there, which granny am I going to grab?! (laughter). (1/18/23)

As discussed above, the initial 'action' stage of attending the ballroom dancing lessons was often instigated by encouragement from friends, a long-standing desire to learn ballroom dancing or following a health-related incident. Whilst even stepping over the threshold of the dance class studio was seen as something that caused apprehension for some, 'maintenance' of the dancing activity also required considerable commitment from participants.

The personality of the dance teacher was not under-estimated in terms of importance for continuing with the classes, with Irene noting "a lot of it stems from K's personality, she's very outgoing, she's very welcoming, she's tolerant, she's a lovely lass" (2/16/471) and "she's got the patience of a saint" (Julie, 3/7/163). This in turn assisted with maintaining the activity "it's just commitment really, I mean you've got to be there every week and then when K's got something that she wants us to participate in, you really feel that you want to support that" (Irene, 1/18/26). McKinley et al (2008) also acknowledge the importance of a supportive dance teacher to avoid participants being discouraged when they encounter

difficulties. There have been suggestions that a dance teacher may inadvertently be demonstrating some signs of psychotherapy techniques towards participants in terms of their abilities to show friendliness and empathy, tailor dances to the participants' abilities and consider the class setting (Haboush et al, 2006).

The desire to support their dance teacher in demonstration events highlights that there was a sense of 'community' amongst the group and the strong role this played in keeping dancers committed to attending. Claire suggested "I think you develop a social side to it and I think that helps, you know, helps you make up your mind, am I going to go today?" (1/11/324). Brenda also noted she and her husband Robert often had to take rests during the dance class for health reasons so perhaps could not participate as fully as others, but one of the main reasons they attended was because they enjoyed the 'fellowship' (2/1/21). Sheila and Patrick were in agreement with Eric and Irene about the importance of the personality of their dance teachers and that the classes were 'fun':

Sheila: I thoroughly enjoy them, I think C and A work very, very well together and I wouldn't go if I wasn't having a good laugh as well, you know, we all learn together, we fall about laughing you know and we all laugh with each other not at each other and as I said earlier sometimes I think half past eight of an evening I think 'oh I can't be bothered going'.

Patrick: Especially in the winter!

Sheila: But then at ten past ten you feel better for doing it like any exercise, yes.

Of interest in this exchange was the mention of different seasons and that at times such as winter, several of the participants mentioned that late evening classes were somewhat less appealing. However, they still continued to go because of the beneficial feeling post-exercise, as well as because the dance teachers provided a supportive and fun environment. The majority of participants attended a Monday afternoon class and the timing of this class was certainly felt to be an important factor; later evening classes would have prevented some of the participants from attending. The location for the dance classes was seen as important too, for Sheila and Patrick their evening classes involved a very short walk from their house to the dance studio. Pamela's dance class was at her gym where she attended several classes each week so it felt like a "second home" in "familiar surroundings" for her (1/14/413). Michael and Emily had been looking for convenient, local dance classes that they could attend on an ad hoc basis as Emily was at the time still working part-time. Kathleen discussed at length the importance of a local class "I've lost my nerve for driving" (1/17/493) and would only drive to places she knew how to get to and where she could

park. This had initially prevented her from driving to the tea-dances in a nearby town however as her social network and new friendships developed, Les would often offer to give her a lift to these tea-dances. She admitted she would be too worried about going to new places alone and therefore, in her mind, it was "better not to" (2/14/400).

The sense of physical health benefits and 'active ageing' have been considered in Chapter 8 so will not be extensively discussed again here, but it was recognised that this was an important element as to why some participants started dancing (for example, Les, Eric and Michael post cardiac events and Julie trying to maintain her mobility whilst managing her Rheumatoid Arthritis). In addition the mental well-being effect dancing had on participants must not be underestimated; even when participants perhaps had had a busy day and did not feel like attending their evening dance classes, as noted by Claire "if you find the energy it does you the world of good, yeah you feel better" (1/12/339). The well-being aspect of the dancing will be considered further in Chapter 11, but it is of note at this point that both physical health *and* well-being aspects were important factors in motivating participants to continue attending classes.

Isaac talked of his other form of exercise, attending the gym and how he felt it was 'addictive' and he was also now developing this feeling about dancing:

I go to the gym as well, but I mean ok, it's a bit boring when you get there, but you know, you can watch other people as well, you know, it's a people watching exercise as well. But there's no doubt about it, it is addictive, you know, that you need to go back again, you know, after a couple of days and I think the dancing is a little bit like that, you know, if you're doing it once or twice a week, then you know, you *need* to do it, you know, you're ready to do it again. (3/4/92)

Dancing had become part of the 'routine' for participants as Julie highlights now her life was not 'governed by clocks':

It just seems to be part of our routine of life now really. We wouldn't think of not going. We only don't go if we're on holiday or if I have a flare up and we just love the whole experience and we're looking forward to learning more new dances and more new steps. (3/10/256)

9.3.1 **Summary Action of Commitment and Maintenance**

In summary, the initiation of the dance activity for the adults in this study was based upon several factors, namely recommendations and encouragement from friends, a change in life circumstances such as retirement or bereavements meaning participants wanted to find new avenues for social contact and often a life-long desire to dance. There is evidence to suggest that social cohesion is a predictor of one's intention of adherence to involvement in team sports (Spink, 1995, cited by Cox, 1998) and it is suggested this is also likely to extend to participation in group physical activity classes. McKinley et al. (2008) support this notion by highlighting that social dance for older adults in a group setting can increase motivation.

For those who had a personal history of dancing during childhood or early adult years, opportunities to dance had been considered to have diminished over time due to work and family life commitments. For those entering retirement, it was an activity they were keen to be involved in again, with many noting they had been 'inspired' by the interest in the BBC's *Strictly Come Dancing* series, indeed a week-by-week 'analysis' often formed the basis for the post-class tea and coffee discussions.

The themes discussed above concur with Cox (1998, p.348) who considers predictors of exercise adherence to include self-motivation and self-efficacy, social influences, available time, access to facilities, good health and coping skills. In addition to factors such as the convenience of the location and timing of the class, the welcoming and supportive personalities of the dance teachers helped with participants' commitment to the classes. The recognition that dancing was 'fun' and provided physical health, well-being and social benefits were also considered strong themes for adherence to ballroom dancing as a form of physical activity for this group of participants.

9.4 **Relapse: Barriers and Interruptions**

As discussed in section 6.1, 23 of the 26 participants who initially started the study completed the 12-months of data collection. Of these, 17 continued to dance on a regular basis, with the remaining 6 having ceased dancing by 12-months. However, even in those who continued to dance regularly, barriers or interruptions still existed at times. This sub theme explores some of the reasons for interruptions or barriers and reasons for 'exit' from the ballroom dance activity.

An interesting theme that emerged from the views of some of the male participants was that although they enjoyed dancing, they were aware that some of their male friends would

never entertain the idea and indeed perhaps *they* would not have done in their younger years. Several of the women referred to this too; Isabel noted her husband "wouldn't have gone to a dance class, no" (1/16/12) and Florence who recalled "my husband would never go when we were younger and, he's, I'm a widow now and I just thought I'd take it up again" (1/1/7). Somewhat sad that the 'barrier' for both of these women were their husbands whom they would have liked to have danced with. Pamela's husband although still alive, was, she considered "a typical man, he'd only ever dance when he was drunk!" and newly-weds Emily and Michael discussed "yes, you couldn't get [husband] dancing could you?" with Emily replying "Oh no, my husband, he wouldn't dance, no, no, no hopes there at all!" (1/9/270).

In Patrick and Sheila's discussion of why Patrick had not danced that much in his younger years, Sheila stated "I think it was a bit 'cissy'" with Patrick agreeing there was "a bit of a stigma" (1/2/20). Eric concurred in his discussion with Irene:

Eric: I think it's still got this stigma to it, you know fellas dancing is a little bit, er.....

Darren Gough and all that sort of thing, you can't say that they are pansies can you?!

Irene: You can't say that sort of thing!

Eric: I know you shouldn't but you know what I mean! But I think it's getting more popular again with younger men who are more accepting of it because they see their heroes on TV. (1/15/12)

When Ronnie was discussing his initial apprehension he had similar thoughts:

I don't know, I think it's just a man thing, it's just a man thing because you will find that, erm, a lot of the men I've worked with over the years, erm, they wouldn't entertain it, no, they wouldn't, erm, and some would, erm, I just think it's one of those things that men sort of suddenly, dancing, for argument's sake, my late father, 'You what?! Dancing?! Are you wrong in your head?' because he was of that generation. Although he was of the generation where there was nothing but dances, I mean that's what people did, so did your mum, she went to dances, that's what people did. So perhaps it rubs off, but I do think that there are certain things which,

certain men, but you grow out of it.....but I've got out of it now and I go and I enjoy it and we get ready to go on a Monday and I say right, we're going dancing today!
(1/17/510)

The influence of a partner also had an impact upon the 3 couples who did not continue to consistently dance throughout the duration of the study. Richard and Rachel were a couple who post-retirement enjoyed travelling. Although Richard has taken dancing lessons with his wife prior to being widowed, it was Rachel who instigated the dancing classes on this occasion encouraged by her friend Amy. The following exchange between Richard and Rachel typified examples of some of the barriers to regularly committing to classes:

Rachel: The other issue with it as far as I'm concerned is that on a Monday I go to keep fit on a Monday night and Richard usually goes to the gym on a morning. So it comes to going to the dancing class and he's even less inclined towards doing what he's told kind of thing or doing anything like dancing because he's either, you know, done something. I mean I did start saying to him don't do, either the gym or going for a walk, let's just do that as the exercise, but he didn't want to do it, so that was that.

Richard: Well Rachel has, but I just felt with having had so long off with what have you and holidays, they seem to come into it regularly, I just got so far behind I didn't think we'd be able to catch up.

Rachel: Well you're not going behind, that's the whole point, it's not, everybody's moving at their own pace, you do what, your own thing, you don't have to go.

(3/5/67)

Rachel's friend Amy has a similar struggle with her husband Rod who had perhaps jokingly commented he had been "sort of railroaded into it" initially and it was the "threat of divorce" if he did not go (1/18/527). He also commented that even in later life they had started other dance classes at a different venue but "I wasn't ready for it to be honest" (1/1/31).

Nonetheless Rod had attended the new dance classes with Amy and had enjoyed them, but other circumstances had got in the way of the couple being able to regularly attend. Rod's mother had become very ill and they had caring responsibilities for her before she then

passed away. They had a new grandchild and also had caring responsibilities during the week for another of their grandchildren. Rod was also an extremely keen gardener so Amy had given another explanation for their continued absence "well Rod's complaining about the dancing, he says 'it breaks up my Monday, I want to be out in the garden!' I say 'it's an hour!'" (1/8/218). Both Rod and Richard had other activities that they would rather have spent their time on, Rod's gardening and Richard's gym time. Since these two couples were friends, there was the additional lack of incentive for either couple to go if their friends were not going and this was also an additional factor for interruptions. Amy and Rachel both wanted to continue dancing and from the tone of the above quotations, their sense of frustration was felt during the interviews; *they* were both very keen to return. Rod and Richard did also discuss returning but with the caveat that Rod was not happy with the class format, seemingly suggesting the class size was too big and he was not retaining what he had learnt and Richard wanted to have individual private lessons because he did not feel he had sufficient tuition time, but Rachel made the following observation:

But I think that's actually a backwards step because you are, dancing should be a social thing, it's not necessarily about all the steps just being perfectly right. It's about being part of the dance floor and moving around and being used to it. It's one thing doing a dance class individually like we did with that chap where we were doing a foxtrot, you know, umpteen times around the dance floor on our own with nobody else there but you've got to be able to work round other people. Dance floors are not like that. (3/2/31)

Brenda and Robert were the third couple who found themselves unable to consistently continue dancing and their attendance had particularly tailed off between the 6 and 9-month points of the study. In contrast to being distracted by holidays and other activities like the couples above, Brenda and Robert found that their existing conditions of Rheumatoid Arthritis and Chronic Obstructive Pulmonary Disease were particularly limiting with Robert's COPD causing more restrictions of the two as he tended to contract regular chest infections. Brenda described their life together as being 'joined at the hip' and so neither partner would have attended the classes without the other. When they were able to attend they often found that they had to sit out some of the dances for a rest break due to their health conditions. They mentioned they attended due to the social networks that they had made through the group, probably more so than for the actual dance activity.

Several of the other participants had periods of ill health, operations or accidents such as a broken arm during the course of the study and this did have an impact upon their ability to

dance every week but the majority of the participants returned to their classes as soon as they could. Claire provided this summary of barriers and reasons for interruptions and social motivation to return:

But some, you don't know whether they've disappeared or gone on holiday, I mean you know, there's quite a number of people retired, then all of a sudden they'll reappear and you know, it's a couple that maybe we haven't got to know very well because they keep disappearing, but, erm, occasionally, you know, a few weeks will go by and then erm, you know, the particular couple I'm thinking of will reappear. But I think on the whole, there is a core group that turns up virtually every week isn't there, you know, so I think you develop a social side to it and I think that helps, you know, helps you make up your mind, am I going to go today.

(1/11/324)

Jeane also noted, "We've seen people and then they've gone missing for a while and then they come back again and it's no big deal" (3/2/39). The 'no big deal' being reference to people being able to slot back into the sessions because of the way they were structured as rolling programme rather than a set course length. Participants could join or come and go from classes at any stage and the dance tutor would alter her teaching accordingly. Sometimes this involved splitting the group in two and focusing on teaching the 'beginners' the basic steps and routines, whilst the more experience members of the group, who already knew these routines, practised around the outer space of the dance studio. Cost was also mentioned as a factor for participants and might possibly have been a potential barrier for some if it had not been for the subsidised classes. The main council run dance class that participants attended had initial funding for some participants if they had been referred by their General Practitioner via an exercise on prescription scheme. Participants who had chosen dancing as one of the available 'exercises' as part of this scheme had been referred following incidents such as cardiac events or falls and they were offered subsidised classes for a number of months. The local tea dances that Patrick and Sheila ran in their local village, were charged at a minimal fee to pay for the refreshments "and it only costs a pound!" as Sheila exclaimed. Although social ballroom dancing actually requires very little or no specialist equipment and weekly class fees were fairly minimal some of the participants did consider this alone as being "quite expensive every week" (Michael, 3/14/352) and that "you can't always afford these dance classes" (Isabel 2/6/162) with Florence recalling in her younger years "I don't think we really had the money really to

go and pay for classes" (1/16/26). Eric also suggested his exercise on prescription scheme "does make a difference to what it costs to go" so he kept this scheme up for the maximum time he was allowed to. Alan also mentioned that one of the additional classes that they had started had a change in fees:

Suddenly it went from £2.50 to £3.90 but I think we settled at £3.50 didn't we in the end? But it were just when you get there and suddenly it's a completely different price, you kind of question it, you know, but we hadn't realised really that the one down at the *place A**, you see was obviously a lot cheaper because there was funding coming in there and stuff like that. (1/6/162)

*class name anonymised

McKinley et al. (2008) note the importance of community based physical activity programmes for seniors being sustainable, catering to the needs of older adults, challenging and being at a reasonable cost. Such considerations need to be made to maximise engagement and provide effective means for public health promotion. The findings of this study also concur with the work of Britten, Addington and Astill (2017) whose older adult contemporary dancing group noted the importance of location, cost and transport as logistically barriers to attendance.

9.4.1 **Summary of Relapse: Barriers and Interruptions**

This sub theme summarises some of the factors that participants mentioned with regards to why they discontinued dancing or some of the causes of interruptions that occurred for some of the participants who did continue to dance.

The main reasons for discontinuing classes seemed to be a theme that one of the partnership was unwilling or physically unable to participate fully. Males were initially harder to convince to dance, with some of the widows stating they were never able to get their husbands to attend dance classes during their lifetime and this was often because of the stigma associated with men who dance, with an inference that it was seen as an effeminate activity. Shorter periods of absence were due to ill health, injury, caring responsibilities or holidays.

As the participants were retired or semi-retired holidays were a very popular past-time, some lasting for 2 or 3 weeks at a time, meaning there were significant gaps where participants were absent from class leading to a feeling of being 'lost' should they return. However many of the participants expressed that this should have not been a problem since the structure of the class allowed participants to 'drift in and out' of the class with Amy suggesting, "It's there to go back to whenever" (3/1/27).

Holidays, caring responsibilities for elderly parents or grandchildren also proved to be a barrier or at least causing interruptions for some. Injury, ill-health or 'flare-up' periods of pre-existing conditions lead to absence from the dance classes for others too although participants generally returned to the classes as soon as they felt able to again.

Timing of classes was mentioned as a factor that would have been a barrier for participants, but those involved in this study selected classes to attend that were at convenient times; that is not too late at night. Finally cost was discussed and overall appeared to be acceptable at the time but any increases in charges would have been looked upon less favourably by participants. This might then have caused some to review at least the additional classes they were doing each week.

9.5 *Chapter Summary*

Chapter 9 presents the findings for the theme *Class Commitment and Congruence*.

The factors associated with the participants' adherence to ballroom dancing as a physical activity have been presented and summarised in subthemes concerning the dancing class itself, the acquisition of dancing skills as being an important motivator as social and enjoyment factors. The factors associated with uptake and adherence to ballroom dancing have been presented and the barriers to participation discussed.

As ballroom dancing is a partnered activity there was a strong influence from partners to or not to dance. Some women noted that they had to wait until they were widowed to be able to attend, because their husbands would not entertain the idea of dancing and they did not think it appropriate to dance without them.

Perhaps by nature of these participants choosing to be involved in ballroom dancing they are somewhat self-selected, generally active older adults. There was some perception that this cohort travelled on holiday fairly frequently, they were actively involved in childcare for young grandchildren or caring responsibilities for parents but that they had healthy social lives. These other commitments at times disrupted their leisure activity plans and for some this instigated a reasoning to discontinue dancing, albeit perhaps there were other motives to stop dancing too. This was particularly evident when male participants did not particularly wish to participate; it meant their female partners felt they also had to stop attending. This was also in spite of efforts made by the class teachers to provide a structure where dancers felt no pressure to attend, they would be able to pick up where they left off following a period of absence.

The class environment and timing were also important. A safe place with easy access provided less anxiety for individuals to travel to. Welcoming, patient and flexible were also characteristics of the dance teachers that were appreciated and did not go unnoticed by participants.

One of the common themes for adherence to the ballroom dancing classes was regarding the social aspects of ballroom dancing. Participants may have been encouraged by friends to attend initially or new friendships and support networks had been formed as a result of attendance. This was particularly important for the participants who lived alone.

The social impact of ballroom dancing will now be presented in further detail in Chapter 10.

Chapter 10 **Social Dance Community**

Chapters 8 and 9 have so far discussed the importance of ballroom dancing for participants as a mechanism of active ageing and the factors affecting adherence to ballroom dancing. During the course of both chapters, social influences have been discussed as being as or more important to participants than the physical health benefits of ballroom dancing and it has been highlighted that the sociality of ballroom dancing was a strong influence on one's adherence.

Chapter 10 considers the social dance community in more detail through the presentation of 5 further sub-themes, namely; Ballroom Dancing: *Life is designed for two*; Dancing through the life course: A personal history of dance; Come Dancing: Stepping out for an occasion; Influence of Self and Others and Fellowship and Friendship: Social Interaction and Identity.

10.1 **Ballroom Dancing: 'Life is designed for two'**

In the quote below, Les talks of his experience of attending ballroom dancing classes for the first time, his apprehensions about going alone and who else he would meet there. 'Life is designed for two' he observes and he had related this to the ballroom classes where partners were required to dance:

If you're on your own, it's difficult, it's very, it's, I can't really explain, life seems to be designed for two people, it seems to be designed for two people, even holidays are based on two people sharing a cabin or a room or whatever, you know, it's all sort of, you go for a coffee and there's tables for two (laughs). Yeah, everything's sort of, your car, it's got another seat at the side of you (laughs), absolutely every bloody thing in it! I said the most difficult thing I did was walk into PALS. Once you take that first step, it's ok but it's doing that, it's so easy just to sort of pull back into yourself and it, you just, it's... Am I going to be the only one? You know, well if I am, so what?

(3/5/133)

Section 9.4 has previously highlighted comments regarding the presence or absence of dance partners and the impact this had on the dance classes for the participants.

For the participants who attended classes as life-partner couples, they tended to start the classes because they had wanted to do an activity *together*. Following retirement, most couples had their own separate interests but the dance classes were seen as an activity they could do together. It was an activity that also provided the opportunity to socialise. Sheila mentioned her motivation to attend dancing classes with her husband Patrick and summarised the point:

It's just so nice to do something that keeps you fit, that allows you to socialise and you're doing with your partner. I mean Patrick loves his golf, I could never play golf in a million years, but this is doing it together isn't it. (2/3/87)

Irene also discusses this matter:

A partner that you can go together with is a special thing for us because there's so many ladies who go and they haven't got anybody to dance with and I feel really sorry for them. (1/11/33)

Irene and Eric started to attend dance classes due to Eric's cardiac condition, just as Michael did with his wife Emily. Knowing that Michael had to participate in some exercise as part of the rehabilitation process, Emily decided that she would join him and they chose dancing as one of the available physical activities that they could do together. Alan and Jeane similarly saw the dance classes as being beneficial because "that seems to be the successful one at the moment for both of us to do" (1/22/676). Their enjoyment was greater because it was an activity they did together and not necessarily because there was a wider social element to the dance classes with Jeane admitting "we're not that fussed about being with other people.... We're not a couple that find it necessary to be with other couples" (1/3/70). For this couple, it was a more personal sense of being together that attracted them to ballroom dancing.

Julie also discussed how the "nicest thing" about the dancing for her was that it was an activity she could do with her husband "it is quality time together and we both enjoy it and we can, we just laugh don't we if we get it wrong and it does you good" (3/10/237) and Brenda talked of how she felt the dancing was an activity she could do with her husband Robert, in spite of their health issues, as they were "joined at the hip" (1/11/29).

For the participants who attended the class alone, it was seen as an opportunity to meet new people as Simon recalled, "I was a widower, made a widower about 21 years ago, so

it's a, you know, I thought well, better get out meeting people again and it's a good social thing" (1/1/9). He was now attending lessons with his new partner Elsie, whom he met at a dancing class. They discussed how it was an important shared experience for them "being together as a couple" because "you've got contact with somebody" (1/10/300). The importance of touch as a sensory system and a basic human need is discussed by Montagu (1986, cited by Karatsu, 2003, p.418). Older adults, particularly those living alone, are often likely to lack human touch as a form of contact in a physical sense. As a partnered activity ballroom dancing provides an opportunity for human touch and an awareness of contact with one's partner to guide movement is paramount. This sense of touch in turn can fulfil one's basic human physical and behavioural need for contact with others.

Within the group, either by couples or for individual participants themselves, there were interesting perspectives on attending dance classes without a partner. Thomas and Cooper (2002) discuss how dance partners were often not 'real-life' partners for their group of older adults who participated in social dancing and whilst they found that no one was 'threatened' by this, there is a suggestion that when younger they might have been. Sheila had attended one of her dance classes without her husband Patrick when he was away one week and found that her peers were "all sort of dancing and joking about 'ooh Sheila's got another fella tonight!'" (1/10/19).

There was a sense of going to dances alone as being almost inappropriate amongst several of the female participants. "If you haven't got a partner you just don't go to dances, do you?" (1/3/14) remarked Isabel. Her thoughts were very much of the opinion that being a single dancer was problematic "*obviously* it was difficult to go to dances on your own" (1/3/1) and during her second set of interview she maintained this theme:

I was just saying people on their own, widows, you don't go to dances because you have no partner and going to occasions when there is dancing unless it's, you know, jogging around, you just don't dance, you haven't a partner, so you don't go.
(2/6/157)

Isabel reiterated her point by talking of dance nights that were held at her church, perhaps with a disco or rock and roll theme every few months, "so I go there and have a really good jive there. But that's with another lady you know, *it's not with another man!*" she exclaimed with laughter (2/6/171). Brenda also spoke of "but you can't go dancing without him, you know!" in reference to her husband (3/4/12). Similarly Elsie remarked "I wouldn't want to go ballroom dancing on my own!" (1/7/188) and Amy stated she would not go to dancing

200

classes alone because "I don't want to play the man, that's all!" with her husband Rod retorting, "No, you do enough of that at home!" (3/3/10).

Although Pamela was married her husband would not attend the dance classes with her so being a very physically active lady she decided to go alone but she did discuss the problems this caused. She lacked confidence to go to a formal dance alone, due to not having a consistent partner, or one at all. This meant that there was often an insufficient opportunity to dance in sessions as much as some of her peers, thus impacting upon the 'work out' intensity level she felt she was getting. Pamela also felt this had a negative impact upon her ability to remember the steps and routines if having to start again with a different partner each week. She felt like a 'spare part' and she did not want to go to the tea dances alone, "It's not all that easy going to a dance without a partner, you know" (1/3/84).

In spite of Pamela finding she may not be 'getting as much out of it' because she was attending alone and "it's not very nice sitting down watching everybody else enjoying themselves" dancing (3/3/71), she did make the point that going alone would "stand me in good stead" (1/13/391) if she ever found herself alone again. She also considered that "it's better than not going at all" (2/2/37). There was a distinct lack of single males in the dancing classes that the participants attended and as Pamela noted in her classes "most people come in couples so they're not likely to say my partner will sit out and I'll dance with Pamela, that's not likely to happen" (1/7/204). Kathleen also discussed having to "take your turn" (1/3/65) when there were a lack of single people to dance with and that a lack of a regular partner prohibited her from attending additional dance classes or events. Irene spoke of "feeling a little bit sorry for those who come on their own, they do struggle" (2/5/129) when trying to find a partner and how it was easier for herself and Eric to attend other events like dance demonstrations and social events as they were not having to rely on others to participate in dances. This lack of single male dancers is not uncommon and was also noted by Cooper and Thomas (2002) in their social dance groups study.

Whilst it is obvious that couples who would regularly dance together would begin to get used to each other's dance style and leads, some of the single participants did discuss the issue of becoming used to one person and not wanting to swap partners. Pamela mentioned she had spent the first 9 months attending the dancing classes pairing with Les as another single attendee, yet when Kathleen began the class, perhaps as she was a more experienced dancer, Les had then often ended up pairing with her. Kathleen notes, "I think he's 68 and I am 84, so I mean it's not, I think 'oh, does he want to be with an old woman?' sort of thing, you know" (2/14/409).

Thomas and Cooper (2002, p.73) discuss the social dancers they observed being 'territorial' at times about where dancers sat down in the dance hall. In this study there are even signs of being territorial over dance partners when they move on to dance with a different person, Pamela did mention she was somewhat disgruntled by this. Florence too talked of her experience of dancing with a different partner in Isabel's absence one week, having found herself paired with another lady who was very bossy and "kept telling me I wasn't doing it right" and that she had become used to Isabel's style of dancing "we get on quite well I think don't we? For two old ladies! (laughs)" (Isabel, 3/5/130).

10.1.1 **Summary of Ballroom Dancing: 'Life is designed for two'**

Many of the participants discussed the problems they considered there being for lone dancers, whether they were in a life partnership or not. Perhaps when considering the ballroom dancing etiquette of their youth and social attitudes at the time, women in particular expressed a thought that it was inappropriate for a single woman to go to a dance alone. Historically ballroom dancing had been considered somewhat risqué in some communities, particularly Protestant Christian church denominations (Jensen, 2001; Vellucci, 2005). It might be that the remnants from such social controversies were ingrained in participants within this age group. Certainly it had prevented some women from beginning ballroom dancing classes earlier on in life and was the reason why some women stopped attending; a forced withdrawal because they did not wish to, or think it appropriate to dance without their male partners or husbands.

For those in couples, the fact that ballroom dancing is a partnered activity provided much of the motivation to begin the classes. Post retirement in particular, couples wanted to find new activities that they could do together. Much of the enjoyment of the ballroom dancing classes for participants was due to being able to dance with someone, being an activity to do 'together', a shared experience and as Les concludes, "Yeah, well it gets you out of that life is for one person business" (3/11/306).

10.2 ***Dancing Through the Life Course: A Personal History of Dance***

"I used to be in shows when I was younger, yes, I was always a dancing girl!"

Florence (1/3/25)

One of the areas of interest for exploration in this study was to consider why participants chose to attend ballroom dancing classes over other forms of physical activity. Florence's answer above was typical of many of the participants; dancing was an activity that they had previously been involved in and enjoyed and now time allowed, they wished to return to. Cabrita, Lousberg, Tabak, Hermens and Vollenbroek-Hutten (2017) discuss how the Self-Determination Theory suggests that a previous experience of pleasure during physical activity enhances the intrinsic motivation to perform it again. Participants often had a personal history of participating in dancing classes, which had elicited a lifelong love of dance. As discussed in Section 9.3, a return to dancing and ballroom dancing, this was particularly the case for those adults who danced with a partner. Whilst not all participants had been involved in ballroom as a form of dance, for many there was an underlying interest in dance in general. During their childhoods several participants reported being involved in other forms of dance. Pamela spoke of her childhood dancing classes and performing in 'the summer spectacular' show. Irene also recalls:

I was an only child and I was the only one in the family that went to dancing class, apparently. I don't know why I should! I was always dancing apparently as a little girl so that's why they took me out the house and dancing, so that's why they took me to lessons.

(1/16/32)

Sheila had attended tap dancing classes when she was a child and had resumed tap dancing classes again as an adult, a form of dance her husband Patrick described as, "It's magic! The music's nice and the dancing is just, on a different level!" (1/16/25). Sheila recalled dancing at school, unlike Patrick, a point he considers being due to "I was at secondary mod. Sheila was at grammar school so that could be something to do with it" (1/2/3). Although he recalls attending 'a couple' of dances classes with a few of his male friends, he explained that dancing was not high on his agenda in his youth and he found team sports more appealing in his younger life.

Isaac also recalls having 'compulsory' dance lessons in Physical Education classes if it was raining outside "they snuck a few dancing lessons in..." but he remembers finding it

“embarrassing having to dance with a girl” and at the time, although he almost secretly enjoyed it, he did not have any opportunity to take the dancing any further (1/4/102).

Isabel discussed a fairly long experience of dance in her youth:

I used to do a lot of ballet until I was about 18 when I left school and at one point I did learn ballroom dancing for about a year when I was about 10 or 11 and then, I used to be in shows and that sort of dancing and, my husband and I used to go to school dances and that sort of thing, but nothing, we didn't learn how to do the ballroom properly, our speciality was the jive. (1/2/20)

When Les was asked about his dance history he sighed, “Ooh, when I was about 17 somebody told me there was this thing called girls!” (1/1/75), which had prompted him and a group of male friends to ‘pluck up the courage’ to attend a beginners class. This opened a new social world for Les and became a significant part of his young adult years. His group of friends and their dance partners then began to enter *Come Dancing* competitions at weekends throughout the north of England.

The participants who remained in couples for the current study recalled dancing during their ‘courting’ years; Patrick and Sheila at the church youth group dances and Eric and Irene used to attend dances together, with Eric recalling how his mother had taught him to dance. Simon met his wife at a dance, “When I was young you see, we used to go to the local dance hall and they had dance bands” (1/14/409), “you either went to the pictures or you went dancing” comparing this to current social habits, “it seems to be all the time drinking now doesn't it? You know, well in our days it was different wasn't it” (1/3/90).

After the courting couples married their dancing days seemed to be put on hold, as Shelia explains “because it was at a youth club and married people didn't go, so we never went and then of course we had children.... And we didn't go out then did we? We just didn't go out” (1/3/24). When Les married, his wife was not a dancer so he also stopped dancing, particularly once they had children. Kathleen also noted “I've always liked dancing but then I got married and then we didn't dance at all” (1/1/28).

Michael and Emily who had both been widowed and married only weeks before becoming involved in this study had both attended dances with their previous spouses. Emily's husband had been a chef at a function venue and she had often gone to the venue to join in with the after-dinner dances and had learnt a few dances this way. Similarly Kathleen

attended dances and 'picked it up' without ever having had formal lessons. Michael took ballroom dancing lessons with his first wife but somewhat jokingly recalls:

After 6 weeks they told us not to go again because we were upsetting the other people by arguing all the time. So that was my first experience of dancing lessons, but now with Emily, in for a penny in for a pound! (1/1/13)

Although some of the couples had danced before, Robert makes an interesting point regarding his second marriage to Brenda "we didn't really know how to dance together" (1/2/38). This had been another reason the couple had been prompted to take classes. Richard also discussed how he had taken dance lessons with his wife as young adults and they had danced well, but since her death and finding his new partner Rachel, not only had his memory declined and he found it difficult to recall the new routines, but Rachel's dance experience was in the jive. She had danced with her husband before she was widowed too, so the two found themselves not knowing how to dance together and wanted to learn.

10.2.1 **Summary of Dancing through the Life Course: A Personal History of Dance**

The majority of participants in this study had been involved in some form of dance earlier in life and this clearly instilled a life-long love of dancing. Some participants had danced since childhood and others noted they met their partners in dance halls in their youth. Several couples had previously been widowed and had danced with their previous partners, but now wished to attend classes to learn to dance together. Cooper and Thomas (2002, p.694) found similar reasons for initiating modern sequence dancing in their study of older adults, that they now had the, "...opportunity to rekindle the passion of their youth". Those who perhaps participated in competitive ballroom dancing in their younger years were now progressing to sequence dancing when unable to continue with the performance demands of ballroom dancing.

Chatzitheochari and Arber (2011, cited by Phillipson, 2013, p.23) considered the pursuit of active lifestyles for individuals in the 'third age' and concluded gender and class inequalities continued to have a negative impact upon individuals post-retirement and "the cultivation of an active leisure lifestyle is inextricably intertwined with an older person's social characteristics and previous life-course experiences". This also raises an interesting question, if the 'Baby Boomer' generation learnt ballroom dancing in their youth and are returning to it in their older adult years, such as the participants in this study, what does its future hold? Its absence from school curricula or social arenas for the 'Generation X' and

'Generation Y' cohorts means it is unlikely to be a physical activity many of these individuals will have been involved in and its popularity as a social activity may dramatically decline for future older adult generations.

10.3 ***Come Dancing: Stepping Out for an Occasion***

Patrick: It's lovely, I mean being in Blackpool was the highlight really wasn't it.

Sheila: The one we went, we actually danced at the Tower, now that was just fantastic.

Patrick: Well it was *mind-blowing!* (2/9/70)

The Blackpool Tower Ballroom is a world renowned ballroom dance venue where national and international ballroom dancing competitions are held. Dancing at 'The Tower' represents a significant achievement for ballroom dancers and a visit there is often considered the pinnacle of one's dancing days. Blackpool is one of the seaside towns geographically close to where the participants lived and many had visited Blackpool for weekends away as a couple or with groups of friends. Indeed, this was the case for Eric and Isaac, who had been long-term friends, as they, their partners and friends visited Blackpool for annual weekends away. The trips often resulted in visits to the Tower Ballroom and 'having a go' at dancing at the famous venue. Claire and Isaac had joined the ballroom dancing classes in part for such reasons "this was one of the points of doing it, was to go to Blackpool and sort of show off a bit, you know, to actually do it in front of everybody else" (1/15/446). Having got up to dance a salsa with Isaac, Claire spoke of how the floor cleared "everybody was sort of watching us" (1/15/446) and that they had then been given a round of applause at the end, which was most pleasing to the couple.

The atmosphere at the Tower Ballroom was considered 'special' by Patrick, in particular because of the live organ music and the highlight for Sheila was that some dancers were "in beautiful gowns and everything, but there were people in jeans and trainers" (2/9/70). Eric and Irene recalled the 'amazing' dancers during their Saturday morning visit:

On one occasion we were watching and she was jiving wasn't she? No she was doing a foxtrot and she was running along the floor in a skirt and they dress for the occasion! And it's only a Saturday morning! They all dress for the occasion and then

all of a sudden we saw her jiving and she was dressed with this little mini on, and she must have whipped off the cover you know and it's, er, *a sight!*

(1/10/1)

Emily also talked of going to Blackpool as an aspiration for the future upon her retirement from working at a primary school.

In addition to dancing mini-breaks in Blackpool, several of the couples had been on weekend breaks specifically organised for ballroom dancers, whereby hotels run ballroom dancing tuition during the day and formal dances every night. Patrick noted "we've had two cracking holidays!" (2/11/331) where he and Sheila had danced each night. The couple had also been on cruises where there were formal dances in the evenings. Rachel and Richard also enjoyed travelling and Rachel mentioned they often stayed at a hotel chain that organised evening dances but the problem with Richard was that "he won't get up and do it because he doesn't want to be embarrassed. So I thought well, if we go and do these dancing classes, apart from anything else, it's giving us practice" (1/10/302).

Similarly, Brenda, Jeane and Ronnie all mentioned they had been on previous holidays where 'proper dancing' as Ronnie labelled it, was a focal part of the evening entertainment. With their respective partners they had aspired to be like those dancing as Jeane recalls:

We kind of thought about it before but not seriously and then we were on holiday, last time we were on holiday, erm, they had a session where people could get up and dance, it was very nice, it had a little dance floor and everything and Alan decided we should get up and dance and I mentioned to him the drawback was that we couldn't actually dance!

(1/1/16)

Although encouraged by Alan to join in and that it really did not matter that they did not know what they were doing, Jeane did not join in at that point, but having come home a few weeks later saw an advertisement in a local council magazine about the ballroom dancing classes. Spurred on by their holiday experience and their aspiration to dance, the couple joined their first ballroom dancing class from that point. Julie and Ronnie also recalled their holidays over many years where they had sat and watched other couples dance "and we used to think, wouldn't it be good to do that?" (Ronnie, 1/10/298) whilst Brenda described feeling "like wallflowers" (1/1/13) whilst watching their friends dancing on holiday and this too had prompted her and husband Robert to start looking for lessons.

In addition to the dancing occasions whilst on holiday, there were more local events such as the tea dances, which participants looked forward to attending "it is another social outing"

suggested Isabel (3/2/38). However, for some this caused a sense of anxiety “we’re not good enough yet, we decided we’re not going to this one at Christmas” remarked Jeane (1/13/398) even though the tea dances were organised as an *informal* opportunity for people to practice their dancing. Claire noted “it was brilliant, we were dancing all the time!” (3/6/151). Participants were also able to request songs for dances they wanted to do and had an opportunity to learn new dances. One of the tea dance events was an intergenerational event, an annual celebration of the ballroom dance programme run by the local council involving the older adult groups and the local schools. Les attended and reported:

The M.C. said right you lot from school go and find an old person and dance er probably not strictly appropriate but they were able to do the same steps which is novel and so we’ve got a 16 year old do it the same as a 70 year old, you can do it together but very different. (1/7/21)

Other formal social occasions that participants attended where there were opportunities to dance included ‘black-tie balls’ organised by employers or local organisations. Emily and Michael also shared a particularly special dance occasion, their ‘first waltz’ at their recent wedding and Les in particular had previously been involved in competitions. These formal occasions provided opportunities for people to ‘get up’, ‘join in’ and ‘have a go’ at dancing, as Sheila proclaimed “we’ve always got up when the music starts, we’ve never been somebody that’d say ‘when somebody else starts dancing, we’ll go’” (1/4/1). Emily also noted that “we don’t just sit there now, we can get up and we can do most of the dances now” (2/15/434) although another couple found a case of stage fright when it came to a special occasion:

Rachel: I think he’s decided he’s got to get over this. We went to the Blackpool Tower, went up the tower and then came back down and we were walking to the ballroom, they were having a tea dance, he wouldn’t go and dance on the floor at Blackpool! He just wouldn’t!

Richard: The best floor in the country.

Rachel: He just wouldn’t do it, would you?

Richard: No, I should have done really.

Rachel: Yes you should have done.

Richard: I regret it.

Rachel: Yeah, yeah, I'm glad you do.

Richard: Next time.

Rachel: I'm glad you do because I was cross over that actually. I wanted to go and dance on the dance floor at Blackpool! (1/24/732)

This exchange highlights the desire for some dancers to perform at special venues and the disappointment and conflict that occurred when this did not happen was evident in Rachel's tone.

10.3.1 Summary of Come Dancing: Stepping Out for an Occasion

One of the motivational factors supporting adherence to dancing lessons was that participants aspired to dance at more formal, organised dances, be it social tea dances at prestigious venues, special occasions or on holidays. Dancing on such occasions provided a sense of achievement and an opportunity to showcase one's talents.

However, this was dependent upon both dancers in a couple showing willing and at times, as demonstrated by Jeane and Richard's unwillingness to dance in spite of their partners' best attempts to encourage them to.

Social outings were being planned by the dance teacher of the main ballroom dancing class, such as a coach trip to the Blackpool Tower Ballroom, which was creating some excitement amongst participants. Similarly in Cooper and Thomas' (2002) social dancing cohorts the organisation of special dances, seasonal parties and dance holidays enhanced the social dance networks forming within their groups.

Section 10.4 will continue to consider this theme in terms of the influence of one's self and others upon the dancing.

10.4 *Influence of Self and Others*

This sub-theme considers the influence of oneself and others with regard to the dancing classes, group dynamics and leader and follower roles within the dance. As a partnered activity, ballroom dancing requires reliance on one's partner initially even for attendance, as has been discussed in Section 9.4, with some participants considering their partners had 'railroaded' them into attending. Others were often discouraged from attending without their regular partner, indeed some seeing it as inappropriate to be attending without their husband or wife. Les' dancing days came to an end in his early adult years when he met his future wife who was not a dancer:

Girlfriends don't necessarily understand why you want to go out with another girl on a Saturday night! Neither do boyfriends, so it sort of became a hassle. 'I suppose you're going dancing tomorrow night aren't you?', 'Yes we've got a competition'.

(1/2/4)

This section will focus more on the reliance on one's partner *during* the act of ballroom dancing for the 'leader' and 'follower' roles. In mixed sex couples the male usually takes the lead and the female the follow role. For some of the women with male partners they expressed their desire not to dance the lead role, which they saw as synonymous with being 'the man'. "I'm tall and I was always the man! And I had a bit of a hang-up about that!" (1/1/37) Sheila recalls of her dancing classes when she attended a girls' school. Amy also said that she would not go to dance classes by herself without her husband Rod as "I don't want to play the man, that's all!" (3/3/10), so for some assuming the 'lead' role was very off-putting and very much associated with gender roles. In contrast friends Florence and Isabel managed their dance partnership well in that during their lessons one of the pair took the lead role and the other follow for different dances so they could take turns:

We swap and change, Florence does the man for 2 dances and I do the man, well the 'lead' what do you call it, the leader, and I do the leader for 2 dances, so we both have a shot at deciding what steps we are going to do don't we?

(Isabel, 1/18/14)

Isabel's terminology typifies what the women thought, that a male should be the 'leader' although she continues to correct herself when recalling how their dance teacher 'labels' each individual as a 'leader' and 'follower', for same-sex dance partners. Describing how it is

harder to be the leader as they have to decide what to do, they discuss how they would both rather be followers all of the time:

Isabel: There's only one man on his own and he usually dances with one lady.

Florence: I'd rather be a follower than a leader.

Isabel: Oh I would, it's a lot easier. But you can't so we share it. (1/15/9)

Whilst these two ladies had come to an arrangement that suited them sharing the leader and follower roles, other couples appeared to struggle as the males were not remembering their steps or the lead role sufficiently; thus the influence of the lead was not particularly successful. Irene notes having to learn the lead part too as Eric was slower at learning the dance steps, so they would then practice at home:

In the dancing, when the man is supposed to take the lead, he shouts at me for taking the lead, but I can remember what we are doing next and then that causes confrontation again because, you know, he's supposed to be doing the leading. The teacher* says the man should be leading and he's not doing, because I'm leading!

(2/14/419)

(*name replaced with 'the teacher')

Rachel similarly had problems trying not to lead when Richard had what she called a 'crisis of confidence':

Richard: Some people fight against your lead!

Rachel: Well there is that as well, I don't help. I do try very hard to be led and I find it difficult sometimes.

Richard: I know! But there we are, that's our problem, but we're getting better.

Rachel: But we can dance if I let him do it. (1/12/359)

Rod's thoughts on the lead and follow scenario were honest reflections of his struggle to lead:

Well the lead follow, the lead follow scenario, I think is bizarre because the man is supposed to lead, but he's pushing, it's like pushing a wheelbarrow, I suppose you are leading, but you're pushing something backwards, you're having to push your

partner backwards. I suppose technically, yes, you're leading because you are looking where you're going, your partner's not looking where she's going, but generally they seem to know better than what we do and we're not really leading, we're following, but you're leading backwards (Amy: I don't like to be led!), you've got to be led, yeah, but we really don't know how to lead. (1/10/292)

Whereas Pamela noted that when she was able to dance with an experienced 'lead' in the class, such as Les, she felt the steps came automatically and she did not have to think about what she was doing. Kathleen suggested the same, she was "getting to know how to follow" (1/11/325) Les when they danced. Les himself describes his lead role:

My partner knows what I am going to do because my body tells them. I mean you knew when I was going to do a whisk because I'd weave into a natural turn, you know, it's a lock step in a quickstep, you sort of, the way your body's positioned does what you want, it tells your partner what you aim to do. (1/16/1)

Whilst not quite likening leading to 'pushing a wheelbarrow' and being difficult like Rod above, Les suggested more ease with leading in terms of 'pushing' and 'pulling' a partner, "if you push them in the right direction they go anyway!" (1/10/19) and "so you just give her a quick pull and she's away, you know?" (2/1/17). In spite of sounding almost aggressive in style with the wording, this indicates a difference in how two male 'leads', the former a novice dancer, the latter more advanced, viewed their style of leading a dance.

Sheila and Patrick also discussed the intimacy of ballroom dancing and dancing with different partners, their thoughts would no doubt help explain those of the women who did not feel it appropriate to be dancing without their male life partners:

Patrick: They move in a different way don't they, from, I suppose with Sheila, you get so used to, you know, your partner, your wife, whatever and somebody else probably, I mean definitely the hold is different as well probably, that makes a difference.

Sheila: You don't want to be as intimate with somebody else, whereas you don't care where you put your hands on him!

Patrick: No, it's true though isn't it.

(3/11/1306)

Karatsu (2003, p.419) discusses ballroom dancing and in particular the tango dance, suggesting that the 'body boundary' becomes very clear because dancers are aware of touch, leaning, weight and the counterbalancing of the body's surfaces but that these boundaries perhaps merge as "one's sense of weight often merges with the sense of another". This might go some way to explain the feeling from the single female participants that it would be inappropriate for them to be dancing with a man other than someone who was their life partner. In consideration of dance as a form of therapy, Sakiyama and Koch (2003) consider its cultural context and that touch, as one of the oldest forms of healing is more accustomed in some cultures than others.

As Florence discussed, dancing with a different partner also affected her confidence. She had described dancing with her husband before being widowed:

I didn't feel confident dancing with anybody else because you get used to one person and as I say I think he made the steps up as he went along! But I was used to that so I could follow him. (1/16/20)

Florence had said that when dancing with Isabel they had 'got used to' each other and both ladies disliked having to dance with new partners, especially since some had criticised them and this had caused some upset and frustration. Whereas they described dancing with Kathleen in more favourable terms "she's a lovely dancer..... she pushed me around and I just follow" (Isabel, 2/9/275) or Les "we both think that we're you know, we're floating around the room when we're dancing with him! But at least we can, we can do it with him" (Isabel, 3/1/73). Brenda and Robert recalled a time when their dance teacher had said "everybody change partners" and how that was "a bit of a disaster":

Brenda: You don't know how to hold somebody do you and you're like this (*imitates with actions awkward position*).

Robert: And it's very difficult that. She was right to try it but it obviously wasn't a popular thing! So it proves to me that we go to be with our partners to dance and I feel sorry for those with limited partner choices. (1/12/35)

Pamela talked of how her lack of regular partner affected her ability to learn the dances as she often ended up dancing with whoever was new in the class and they “don’t know a lot of the moves so you tend to forget them” (3/10/257) and she had observed that those with regular partners were able to demonstrate greater levels of floor-craft because they “know what they’re doing” (3/27/344).

Kathleen had attended the dance classes alone had begun to regularly dance with Les as both had previous dance experience. Kathleen considered herself ‘very lucky’ to have been paired with a strong lead and was really enjoying the dancing classes. Having had a previous fall, which had a significant impact upon her confidence, she made an interesting point about ballroom dancing as a partnered activity:

The thing is, since I fell, I’m always frightened of falling, because it was, you know, a bad experience, that, I’m always a bit wary. But when you’re dancing, you’ve got a partner to hold onto, you know, you can just carry on and you don’t think about it. But I’m always aware of it when I’m walking alone anywhere. (3/3/54)

This point highlights one of the important factors with ballroom dancing compared to other forms of physical activity, it is *partnered*. There is a sense of safety and security in that partnership for those who may not be as independent as they once were physically or for those who may lack confidence, due to experiences such as Kathleen’s fall.

Outside of the partnership consideration of oneself and other, there was a theme of ‘others’ in relation to the influence of others as the *group* rather than individual partnership dynamics. Within their dancing groups, those who regularly attended were considered the ‘hardcore’ and they tended to refer to others with such terms as ‘new ones’, ‘new comers’ or ‘beginners’, although by the time some of the interviews took place, some of these ‘new’ dancers had been dancing for several months or more themselves. There was a general consensus from the more advanced group of dancers that as their own skills progressed, they felt able to help support and advise some of the newer group members on the steps or routines when the dance teacher was busy with 1-to-1s with individual couples, so these ‘others’ took on a teaching role. This was seen as supportive and encouraging by the newer members of the group given there was usually only one dance teacher leading a group of various different levels:

It's a very good rapport and also like Ronnie and I being starters, so many of the people who are good dancers have taken us aside and whizzed up about haven't they? So everybody, there's a very supportive group of people there.

(Julie, 1/7/99)

However Michael considered that some members of one of the groups he went to were 'standoffish' perhaps because he and his wife Emily were new members in comparison to their other more supportive classes where they felt 'more part of it':

I mean people at the X, we don't get to know their names and they seem a bit standoffish, quite a lot of people at the X.... Yeah, they've been going some years and they just dance past you and they ignore you and such like, get you out of the way, that's how I feel. I mean it's certainly a bit er, standoffish compared to Y and Z and because we're all on the same level there, er at the X it is different levels and we just get lost.

(2/2/54)

Some of the more advanced members of the 'X' group mentioned it was "a bit awkward sometimes" with the different ability levels within each group (Isabel, 2/2/31) and this meant the teacher had to devote more time to the newer members to teach them the basics, but that at times this led to 'saturation level' within the class. Irene also mentioned dancing around the outside of the hall so as to "avoid the ones who are learning the new steps" (2/3/84) and perhaps this sort of technique appeared 'standoffish' although it was used to allow themselves space to dance freely whilst the newer members received further tuition from the teacher. Pamela, as a more experience member of the group also mentioned "I don't think it's good when she's struggling on 5 or 6 levels" (2/3/68) with regard to the teacher managing the mixed ability group.

10.4.1 **Summary of Influence of Self and Others**

This section considers the influence of oneself and others upon the dance. Individuals need to try to learn the routines for their particular lead and follow roles. However, ballroom dancing being a partnered activity also has its problems. A lack of a regular partner was considered to have an impact upon one's ability to have sufficient time to practice and learn steps. Even for some women with the same male dance partner, when their leaders were not able to remember steps there was an instinct for them to 'take over' and lead to keep the dance moving, rather than remain in their follower role and the dance ceases. This affected the dynamics of the dance and often caused frustration between couples. There was also a sense that the lead-follow roles should follow traditional gender roles within

ballroom dancing and there was a reluctance by women to take the lead role as it was seen as changing their gender role.

The sense of physical contact and support from one's partner in ballroom dancing provides some confidence for individuals. Aside from the physical benefits, it is one of the reasons that ballroom dancing can be a suitable activity for older adults who lack confidence in movement and are perhaps not as independently mobile as they once were. In focusing on the therapeutic use of touch, Sakiyama and Koch (2003) suggest that touch can be restorative, organising and provide physical and mental closeness. Whilst older people often dance for the social interaction it provides, the aspect of human touch, the interaction with others could, therefore, be an important aspect of *why* they dance, given the importance of the relationships of the self to others in maintaining health and well-being.

10.5 Fellowship and Friendship: Social Interaction and Identity

One of the positive themes in previous research on ballroom dancing has been the impact it has on the social lives of older adults (Cooper and Thomas, 2002) and this also emerged as a strong theme within this study and has been highlighted as an element of why older adults adhere to ballroom dancing classes in Chapter 9. There is a sense of; identity amongst the dancers, 'our group'; opportunities for social interaction, for example at dance events; opportunity to make new friends and acquaintances outside of their own group and attendance at the classes helped to reduce social isolation. The group that most of the participants regularly attended and the community tea dances included a social element to the afternoon, tea and biscuits and time for a 'chit chat'. This was seen as a bonus by many of the participants, such as Les, "It has two benefits, one is it's doing something and the other one is it's social, you just, I live on my own and the cat's company is a little limiting to say the least" (2/1/25).

For couples like Brenda and Robert the social side of the class had become as important as the dancing itself "and that's the other side of it you see that we didn't realise, that the social side of it has become as important, not just the dancing side" (1/2/23). Les also recalled the dancing days of his youth when he would dance each week and enter competitions:

It was more a social life, yes, you went out, you danced, you had a drink, you had a good laugh, you commiserated or you were congratulated or whatever and you went

home and you went your merry way and then the next week you ended up with exactly the same people doing exactly the same thing. (1/5/21)

Aside from the 'commiseration' and perhaps the 'drink' (referring to alcoholic) being replaced by tea or coffee, Les' return to ballroom dancing in retirement and helping at other classes provided some structure to his week once he had retired and lost the social networks he had through work. He was dancing with the same people each week and the 'social' time after the class provided an opportunity once again for laughing and socialising. Indeed this time could be seen as an opportunity for this group of older adults to develop "bonding and bridging forms of social capital" whereby individuals were able to develop memberships in new social networks and gain "solidarity and support" (bridging) and "access to new resources and identities" (bonding) with such ties reducing social isolation and assisting individuals through periods of change such as retirement or advancing age (Putman, 2000, cited by Phillipson, 2013, p.123). Due to changing demographics, with more individuals living alone as well as living longer, there will be an increased importance to provide opportunities for ageing populations to form new relationships and social ties that will enable supportive environments to assist with 'successful' ageing.

Many participants would refer to their dancing classes as 'our group', their 'little social group' demonstrating a group identity had begun to form. For example, Claire and Isaac talked of their "core group" who attended each week and of other people who "have come from another group haven't they, but presumably they've gone back to their own group" (1/11/320) demonstrating an 'insider/ outsider' viewpoint, not necessarily in a negative manner, more so they identified with one group. "We've all gelled, I feel that we've got a really nice group of people" Brenda commented (1/12/21) and Irene also felt this identity helped people stay committed to the dancing and also feel that they wanted to support any special dance events that their dance teacher was involved in. For example, the dance demonstrations held at community events to publicise the dance classes or the 'social outings' to the local council run tea dances. Although Brenda and her husband Robert were often physically unable to complete all the dances in their group sessions, mainly due to the severity of Robert's COPD, she notes "we're going to the town hall on Wednesday to the tea dance and we don't do much dancing but the social aspect of it is lovely" (1/10/38). Similarly Florence talked of attending her dance classes in spite of a period of exacerbation of her back pain "I said I will go and if I don't do any dancing I'll just sit and watch but just to get out of the house because you get sick of seeing four walls and watching a television" (2/5/138).

'Camaraderie', 'fellowship' and 'friendship' were mentioned as being key elements of the dance class and social opportunity it provided. Sheila suggested that perhaps within her groups they provided "fellowship, not friendship" (1/12/5) and Brenda too talked of enjoying the fellowship (2/1/21), differentiating between the two but others talked of making new friends through the dance classes. This had led to other social events being organised such as Christmas dinners and week-day dance class groups then meeting to go out dancing at weekends, thus socialising together outside of their formal class hours. Whilst new friendships were forming amongst group members and people were getting to know each other, there was also a more immediate fellowship between members of the dance classes. Brenda, Ronnie and Julie discussed how if members of the group were missing, they knew about it and when they returned people would always ask how they were. As friendships developed, Kathleen explained this had extended to people making telephone calls to each other (3/9/224) or in Julie's experience e-mails (2/2/46), as there was a genuine concern for each other's well-being.

The 'tea and biscuits' after dance classes provided an opportunity for people to talk about how the dancing had gone for them that day "some people will say to you 'Well I am rubbish today! I came with two left feet! How did you go on?'" (Ronnie, 1/7/189) and other aspects of their lives, for example, holidays, hospital appointments, babysitting grandchildren and other hobbies. Even when the dance teacher was not there to prepare refreshments, the group would walk to the café instead "so it's not a duty, we just enjoy it" (Irene, 3/9/217). Many of the participants noted they had not expected the social aspect of the dancing to become so important to them.

All participants mentioned some aspect of the social side of ballroom dancing and the importance of it, albeit in reducing social isolation for those living alone, to encourage attendance and motivation for the classes, that is was nice to make new friends and acquaintances, to be with like-minded individuals and because it was seen as a social skill that opened up other avenues. "Dancing is the common denominator amongst us all" as Robert said (1/12/21). At times seeing others dance provided inspiration, "We met one lady who'd had a stroke and she was doing brilliantly and we thought if it can do things for her, you know, it obviously can do things for us too (Robert, 1/6/22).

The social aspect of the dance classes was particularly valuable for members of the group who lived alone, as Les indicated above. For Kathleen it provided one of her only forms of social interaction each week, "It's the highlight of my week really, because I like the social part of it and it's nice when we have a coffee afterwards and a chat" (2/1/7). Others described it as "enlightening" meeting others and that this was part of the pleasure of the

activity (Michael, 3/1/21), that the social aspect of the group provided a "good cross section of what's going on in society" (Alan, 2/14/368).

Les had talked much of his life post retirement, of lost social networks and 'support systems' that had gone and that ballroom dancing had become "something to get out for, something to get up for" once again (3/8/217). Daniel, another single male suggested "it gets me out, you see, it breaks your day, you know" (1/2/36). Simon echoed this; dancing was building new social networks for him, including meeting his partner Elsie:

Because when you're retired, you know, you miss your work mates don't you, you know, you do, it's yeah, your life changes. Well once you start going and you're meeting people, you know, it's err, you break the ice, you're away then, yeah, yeah, because it isn't just the dancing, it's the social thing as well you see, meeting people.
(1/9/258)

As Irene also pointed out, "I do think it's one of the best exercises you can do, socially you know you're interacting with people, it's far better than standing at home on a treadmill and just walking" (2/15/440).

There was also a sense of a new *community* through the dancing. This is enhanced further by the work of couples such as Sheila and Patrick who had set up monthly tea dances in their local community centre. Led by the local vicar, a committee was set up to 'save' the local Salvation Army hall for the village community in which they lived. Having been granted lottery funding the building was bought by the committee and as Sheila explains about the village's vicar whom she found 'inspirational':

His idea of religion was bringing, was 'goodness' really, bringing people to be good in the community and I can live with that. I can't do God but I can do with goodness in the community..... Somebody said what sort of things could we put on that would help the mind, the body and the spirit of people and somebody said tea dancing and that's how it started really. (1/8/5)

A sense of 'community', 'helping society' and 'giving back' were very important to Sheila and Patrick and as they both enjoyed dancing they then undertook some council funded dance training to be able to be dance leaders and set up tea dances within their community.

They then successfully ran the monthly tea dances at the centre with the aim of it being something that benefitted some of the older adults in the community and particularly those who were alone "I want people to enjoy it and to laugh together" Sheila noted (1/6/41). One of the stories that they told was of an elderly lady who had been extremely active in the Salvation Army and was 'heartbroken' when it closed in the village. She had attended the tea dances with her sister for several months when she said to Sheila and Patrick, "Do you know, this has changed my life!" a comment that they had found gratifying "and you just think, well, you've probably turned her life around for the latter end of her life, which has got to be good hasn't it?" (1/9/32). They noted how they tried to make everyone feel welcome and valued by talking to every person that attended and trying to remember their names. Sheila considered the provision of this service to their community to help include others and 'do good' was "what I was there for" (3/15/429).

In another example of 'community' Irene and Eric also considered they had a 'role' within the dance group. They would tell others about their dancing, actively encouraged people to join and would often volunteer to be involved in dance demonstrations at community events to help give some support to their dance teacher:

Just to get it off the ground, to make it known that you can go and then if somebody turns up who has got nobody to dance with because there's one or two there who can help out a little bit. (Irene, 1/4/18)

In addition to ballroom dancing being a good activity for older adults, Les had spoken of the intergenerational dance events and Irene also mentioned the intergenerational nature of dancing, that she would practice with her granddaughters whose schools were involved in the corresponding dance programmes for children.

10.5.1 Summary of Fellowship and Friendship: Social Interaction and Identity

The sense of camaraderie within dancing groups was evident throughout all the interviews of participants discussing various ballroom dancing classes or events that they attended. The sociality of ballroom dancing was a strong and consistent theme and the groups' activities outside of the dance class, for example attending other dance events and arranging Christmas parties mirrors the social bonds and 'communitas' that formed from the social dance classes in Thomas and Cooper's (2002) study. The sense of community that ballroom dancing provided was an important social avenue for many of the participants and those who were providing tutoring or peer mentor assistance saw their work as an

important service *within* their local communities. New friendships were formed and social identities were apparent with groups comparing or differentiating themselves from others.

Participants gained much motivation from their aspirations to learn to dance so that they would be able to participate at ballroom dancing events and showcase their skills. There was also an intergenerational aspect to this activity, at times bringing older adults together to work with younger people be it in the community or within grandparent-grandchild relationships.

Individuals were influenced by their partners in terms of the role they took within dances and also the 'success' of these roles; with some complaints that the men were failing to 'lead' sufficiently most often due to reported poor memory problems. Individuals identified with the 'lead' or 'follow' roles and some of the female participants were clear that they did not want to dance the lead roles.

As a final thought, Julie summarises ballroom dancing "and it's being with *people*, we just love it!" (3/9/223).

10.6 *Chapter Summary*

The sociality of ballroom dancing was seen as the over-riding theme that influenced many aspects of the participants' dance classes. The social aspect of the classes themselves, the dancing with and around others, the human contact and the social community that then formed all had a significant relationship to one's enjoyment and hence adherence to the dancing classes. There is a significant body of research documenting the impact of social connectedness on health and well-being (Herzog et al., 1998). As Skinner (2009, p.211) suggests, "Social dance can be a particularly integrative way of connecting with others through creative means and thereby obviating a sense of loneliness or aloneness". Hence the skill acquisition, the self-expression, sense of catharsis and sense of occasion and sociality of ballroom dancing that have all been discussed assist in establishing the social bonds and sense of community for ballroom dancers.

Over recent decades there have been changes in cultural codes and behaviours that may dismiss the concerns of women dancing with men who are not their life partners, or women taking the 'lead' role in a dance. In particular with regard to the sense of intimacy and touch in ballroom dancing and the identity of the gender roles associated with the lead and follow roles in ballroom dancing. Marion (2008) discusses the notion of 'performing gender' in Dancesport (competitive ballroom dancing in the USA) and states "intrinsic to the gender models in ballroom is deeply embedded heteronormativity, pairing male (leader) and female (follower)" (p.143) and as such there is significant focus on gender roles and relationships and depicting the aesthetics of male-female relations within a dance. The dancers in this study described a strong sense of these gender models as their social and cultural practice and meaning of their identity, as would have been developed during their youth, hence women not wanting to be seen as 'the man' if made to take the lead role.

As Picart (2002, p.361) herself a ballroom dancer concludes:

Examining ballroom dance, particularly as a social and competitive event, necessitates that we theorize the complex relationships binding the public display of bodily movement and the articulation of social categories of identity and gendered bodies, as well as their transmission, transformation, perception, enactment and communication.

Chapter 11 **Enjoyment**

This chapter discusses 'enjoyment', a prominent theme throughout interviews with all participants. Comprising 'taking delight' and 'experiencing pleasure' (Thompson, 1996), enjoyment was the key factor in participants' adherence to the dancing classes and dance events and was seen as being more important per se than the physical or social gains; participants *just wanted to dance*. This was particularly evident as participants suggested the social aspects of dancing and their sense of mental well-being were inextricably linked. In this respect, it is difficult to detach the 'enjoyment' from the sociality of ballroom dancing as one might suggest without the social engagement in ballroom dancing, there might be less enjoyment. However it is noted by participants such as Isabel that her enjoyment was due to a more *intrinsic* sense of being able to express herself as an individual (1/4/20 and 1/5/8). Theme 4 considers enjoyment in this sense; it presents aspects of ballroom dancing that provide individuals with an intrinsic sense of 'enjoyment' and represented as the subthemes of *Raising Spirits: Among the Land of the Living, Expressing Oneself, Distraction of Life's Worries* and *Beneficence*.

11.1 *Raising Spirits: Among the Land of the Living*

By virtue of the fact that Kathleen lived alone, at 83 years of age was the oldest participant at the start of the study, and had talked of feeling socially isolated at times:

Well it's just the movement and the dancing, because I love dancing and it just makes you feel, you know, not, I don't really know, you feel as though you, you're still among the land of the living sort of, you know, not just an old lady sitting in a chair and doing nothing, so it's erm, it's nice, the movement and to the music and you know, it's good. (Kathleen, 2/5/131)

Joining the ballroom dancing classes had provided Kathleen with a new social avenue, but in another sense the dancing provided her with a sense of a renewed body and a reminder that she was indeed 'still among the land of the living'. She would look forward to the dancing each week, dress for the dance putting on her heeled shoes and pearls and make the effort to go out; she was 'not just an old lady' when she danced. Similarly Kalogroulis' (2001, p.19 cited by Karatsu, 2003, p.430) interview with Kenji Nozawa, a professional Japanese tango dancer, reflected on why the Tango had become so popular in Japan. Dismissing any cultural influence Nozawa simply stated: "We know many people in Japan

who, when asked why they are dancing Tango reply, 'Because I'm alive!'. Indeed, Kathleen expressed some regret on several occasions during the interviews at not having danced as much in her younger years and wished she could "turn the clock back" and "I wish I was young again, you know, to go back to being your age and I would take it up, you know do it all the time I think!" (2/7/203). Pinniger et al's (2012, p.54) participants with age-related macular degeneration who were involved in Tango dancing also noted a sense of being able to 'partake in life' once again. In addition objective improvements in self-esteem, well-being and a reduction in depression were outcomes that would lead to raising one's spirits.

Claire had also described that finding the energy to attend her evening dance classes, even after a tiring day did her "the world of good" (1/12/339) and Isabel highlighted the benefit of enjoying the music they danced to, "It lifts you doesn't it? It's nice music. The music is nice so you know, that takes you out of yourself a bit as well" (3/372). Claire and Kathleen also used the term "it gives me a lift" (2/7/211 and 3/2/20 respectively), Elsie, "it lifts your mood" (1/5/147), Simon talked of feeling better after dancing as "it gets the adrenaline going" (1/5/142) and Eric and Irene talked of dancing being a pleasurable activity that made them feel "happy" and that it was, "certainly a well-being thing" as its primary function, rather than being an activity that provided them with more physical health benefits in their minds (1/18/1). Alan also considered the dancing to have a positive impact, "It's just adding more incentive to your life" (2/28/740) and there was a general sense amongst the participants that it was something to look forward to each week, indeed Julie described there being "a buzz there" at her classes (2/9/245) "we love the atmosphere of going" (3/6/127) and "everyone's got a smile on their face, everybody is happy to be there" (2/6/147).

For many there was a definite sense of 'fun' being an important aspect of their enjoyment, and in turn adherence to dancing. There was no pressure within the dance settings; if couples forgot steps or did something wrong, there would be laughter amongst the group and "we all laugh *with* each other, not at each other" as Sheila pointed out (1/6/1). Indeed, as participants advanced their skills, there was a sense that their enjoyment also increased due to gaining pleasure from a sense of achievement and a feeling of being *able*, when perhaps day-to-day life was often affected by physical disabilities. Brenda highlights this point "we've developed a dance that we can do and we enjoy doing!" (2/2/35) although by her own admittance perhaps not perfect. However, on the dance floor she was able to complete a dance with her husband in spite of both having pre-existing conditions that significantly limited their daily activities and exercise tolerance levels.

For Jeane the ballroom dancing was a source of much enjoyment and an activity for which her husband Alan had suggested to her, "You do actually make an effort don't you?" in spite of "feeling a bit down" on occasions (2/26/666). She would take painkillers to help with some of the musculoskeletal problems that she had, and participate in, and enjoy dancing. During Jeane's interviews it was possible to sense that there was positivity when talking about her involvement in dancing, compared to the day-to-day pain management concerns she lived with.

11.1.1 **Summary of Raising Spirits: Among the Land of the Living**

Ballroom dancing was seen as a pleasurable physical activity and often compared to other physical activities such as gym-based exercise, which participants were considerably less enthused by. The enjoyment gained from dancing was cited consistently as the primary reason for these older adults attending and adhering to dancing; it appeared to be closely associated with the sociability of ballroom dancing and any physical gains were seen as a bonus.

Participants noted that their involvement in ballroom dancing raised their spirits most often because of the sense of *involvement* in provided; a renewed sense of feeling alive and engaging in life. Kathleen's words reiterate this, she felt "among the land of the living" when ballroom dancing. Nash (2000) suggests that dancing provides a means to escape from individual burdens and the constraints of one's social world, to "lose oneself in motion", "to dance yourself dizzy" and be unburdened of conscious thought (p.657).

11.2 **Expressing Oneself**

In chapter 8 there was mention of an increase in movement being one of the positive physical aspects of ballroom dancing. Florence and Isabel discussed this aspect further with regards to their enjoyment of the dance and being able to 'express' oneself:

Isabel: I don't know, it's just a nice feeling for me to be able to dance to music. If there wasn't the music it wouldn't be the same. I wouldn't go to an ordinary keep fit class because that hasn't no, no music.

Florence: Well you have music.

Isabel: But you can't express yourself can you? The stretch and flex is fine because we do have music to that and it's sort of our era isn't it? 60s sort of music, so you

can move to the music and you feel, that's how I feel anyway, there's a rhythm to it
and you can you know, I just love it, I love it! (1/4/20)

Previous research has suggested that emotional response and self-expression declines in older age (Gross, Carstensen, Tsai, Gøtestam Skorpen and Hsu, 1997; Herzog et al., 1998; Levenson, Carstensen, Friesen and Ekman, 1991; Nadasen, 2008) with disengagement theory viewing this decline as a means for preparation for the end of life (Levenson et al., 1991). However, participant responses in this research might challenge this suggestion. Participants viewed self-expression as an important aspect of dancing; one which would make them chose it over other forms of physical activity. There was an interesting comparison to another exercise class Isabel attended, 'stretch and flex'; although there was music playing during this exercise class, there was no opportunity to express herself or 'feel', indicating a deeper inner sense of emotion and connection to the music through movement. Nadasen's (2008) study of older women who participated in line-dancing also found a positive impact of dancing beyond that of the physical benefits, with 'self-expression' emerging as one of the key findings.

Whilst Isabel and Florence did not consider dancing particularly noticeable in terms of its physical benefits, both were mindful of its positive impact on their well-being. The importance of music and its positive impact upon one's enjoyment was cited as part of the overall enjoyment for many participants in this study and this theme was echoed in the work of Thomas and Cooper (2002) and Cooper and Thomas (2002, p.694), who also noted participants acknowledged the importance of music to "feel" the dancing. Isabel explained the music was from her era and this is likely to have provided an opportunity to 'rekindle' aspects of her youth in the 1960s.

The ability to be able to express oneself was also mentioned by Les. He had found opportunities in sequence dancing to be restricting and did not like it compared to the freedom of individual partner ballroom dancing, "It doesn't let you express yourself... we used to liken them so the wind-up toys are here now, you know, wind them up on the floor and they all do the same thing, all at the same time" (3/3/72). Cooper and Thomas (2002, p.695) discuss how some of their participants gravitated towards sequence dancing as an "acceptance of their ageing" for it required shorter steps and less floor space; so "suiting" the ageing body whose balance and mobility had "passed its peak".

In addition, Julie touches on this topic, as she discussed part of her enjoyment was associated with the freedom to move in dancing, which was often restricted for her as she had rheumatoid arthritis, something she described as, "truly wonderful" (3/6/145).

Palo-Bengtsson et al's (1998, p.549) work on social dancing for people with dementia described their dancers as demonstrating "intellectual" attributes such as "wakefulness", "concentration" and being "collected". Dancing was represented as "purposeful and meaningful" and providing a means for individuals to express themselves through dancing, when ordinarily in life self-expression was likely to have been impeded by the dementia.

Associated with expressing oneself, there was some mention of the aesthetics of dancing, which was also discussed as a source of enjoyment for participants, not only in the sense of working on their own technique or what they wore to the dancing but watching others. Sheila had talked of the, "beautiful gowns" dancers wore when she visited the Tower ballroom, a venue and experience that her husband Patrick enthusiastically described as, "magic" (1/10/12) and "mind-blowing" (2/10/277). Marion (2008) discusses the glamorous costumes adorning ballroom dancers and suggests this can be, "Inspirational, engaging spectators' attention and driving dancers to aspire to greater and greater heights" (p.60). Indeed the glamorous televised ballroom dancing competition series did provide a catalyst for several participants to engage in ballroom dancing classes and participants enjoyed being able to showcase their new found skills during demonstration or dance events.

The opportunity and *desire* even to 'dress up for the dance' was expressed by Les as being "you sort of want to put your blue shirt and bow tie on, rather than put the white shirt and a tie on" (2/9/274) and he had explained how in his youth, he and his friends would look "like younger versions of our dads because we wore our collars and ties and then we got Italian pin stripe suits with Huddersfield wool and we thought, 'Oh!'" (1/14/2) indicating the importance of dance etiquette and that they danced dressed in style. This retained considerable meaning for Les in his personal dance history; a positive reminder of the peak of his dancing days and his youth. Claire also recalled dance events she had attended prior to her marriage, "People used to get tickets to go, just to, you know, dress up and dance" (1/5/134). Certainly, the 'romance' of ballroom dancing is appealing and Goldstein-Gidoni and Daliot-Bul suggest, if only once a week "men and women alike, temporarily become Cinderella. Putting on their costly, carefully chosen shining dancing shoes, they dance as if a spell has been cast upon them" and this enables people to escape the "harsh grind of daily life" (2002, p.65), which also concurs with the sub-theme 'Distraction from life's worries' presented below. This 'Cinderella effect' may be of particular importance for older adults as it presents an opportunity to look and feel good, to reminisce and to resist the stereotypical physical and psychological decline of older age and the invisibility of older adults in society whose bodies do not conform to the cultural demands of physical attractiveness, most often associated with youth (Thomas and Cooper, 2002).

Much to Irene's embarrassment, her husband Eric had recalled how dance improved a woman's deportment and "that was what attracted me to Irene when we used to dance" (1/7/2). In addition to the dancing dress code, other participants mentioned enjoyable elements of the aesthetics of the dance as "looking graceful" (Pamela, 1/10/286), "Elegant" (Julie, 2/12/315), improving their dancing to include more "flamboyance" (Isaac, 1/10/286) and even gaining enjoyment from watching other more experienced dancers "put the embellishments in" (Robert, 1/3/29). To echo the findings of Cooper and Thomas's social dancers (2002, p.690), in this study ballroom dancing was found to be an aesthetically pleasing means of "becoming visible" in terms of a generational sense of dress, dance etiquette and style and much importance was placed upon these factors.

11.2.1 Summary of Expressing Oneself

This theme encompasses several aspects of social ballroom dancing that were important in participants' enjoyment of the ballroom dancing experience. The opportunity to express oneself is possible through the music, dress, style and aesthetics of the dance and these were key elements of the meaning of social ballroom dancing for older adults. One's sense of self was transformed through ballroom dancing. Desire, grace, elegance and movement, perhaps even bodily memories could be expressed through the dancing. Picart (2002, p.358) denotes, "The possibility of personally expressive movement adds an important aesthetic dimension for me, and signifies the essence of ballroom dance- an expansion of self through another", considering not only *self*-expression, but the influence of one's expression upon one's dance partner. A "becoming other" as Bollen suggests (2001, p.298 cited by Skinner, 2010, p.21). Such aesthetic attributes may not ordinarily be considered to remain part of the social and cultural milieu of ageing but are attributes that when evident in older adulthood, challenge the social construct of ageing and its lens of deficit and decline through one's embodiment. As Cooper and Thomas (2002, p.704) indicate, a skilled dancer may "challenge the construction of the ageing body as undesirable and aesthetically displeasing" and hence the aesthetics of ballroom dancing are considered equally as important to older adult dancers as to those of younger generations.

Whilst participants spoke of being able to 'express themselves' through the dance it was not always entirely clear what was meant by this, which warrants further investigation. Dance, by virtue of its movement, is often considered as a means to 'express oneself'. Skinner (2008, p.74) observes that "it is there on the dance floor that we can be truly alive, more absent and more present than usual". However Williams (2004, p.21) argues that dance is just one of *many* forms of self-expression; others including words and alternative actions. Williams' suggested question "what are people doing when they dance?" hypothesises answers might include creating, reinforcing, establishing and strengthening social

connections and relations or enacting historical roles (2004, p.21). Perhaps ballroom dancing might provide an appropriate arena for older adults to demonstrate self-expression, whereas others might be less appropriate. Nadasen (2008) considers other arenas for social interaction that older adults have, such as church groups or old-age clubs, and suggests that these might be deemed inappropriate places by older adults to express themselves. However Nadasen's (2008) study of older female line dancers suggests that a line dancing group might allow a more comfortable environment for individuals to express themselves and 'make fools of themselves', for example, when trying to learn and perform complicated steps and dance routines. The same could be suggested for ballroom dancing classes, and indeed, this was supported by findings presented in the previous chapters whereby individuals discussed learning and laughing together and laughing *with* rather than *at* each other. Therefore further consideration of and insight into "what is being expressed and how it is expressed" during dance, as suggested by Williams (2004, p.21), is important to determine the connection between ballroom dancing, 'self-expression' and its value for older adults.

11.3 *Distraction from Life's Worries*

In Section 10.5 Sheila had discussed her motivations for running the village tea-dances with her husband Patrick were to provide an activity to help the mind, body and spirit of people in her community. Kathleen talks of feeling alive when she danced and Sheila herself gave an example of how dancing had helped her well-being:

Another time that it's helped me was when my mum was dying, and she was in hospital and so we'd visit until sort of going after 8 o'clock, and sometimes I didn't feel like going and yet we sort of pushed ourselves to go and erm, we felt it, you feel good afterwards because it's a little bit of physical exercise when you've been stuck in hospital for a long time erm, you know that sort of urgh, oppressive atmosphere that you get in hospitals. (1/15/27)

Sheila left the oppressive atmosphere of the hospital behind and found pleasure in the atmosphere of her dancing classes and wished that others enjoyed dancing as much as she did as she considered the stresses of other people's lives could be reduced if they also participated in ballroom dancing. Ballroom dancing was seen to be a 'distraction' from life's worries, illnesses or during testing times and therefore had a restorative role and offered some resilience to life's worries. Kathleen spoke of family problems causing her constant

anxiety; "there's always something every week" and that "going to dancing, it just, you know, I just forget everything then and just enjoy it" (3/6/136). The mental 'lift' that ballroom dancing instilled in older adults concurs with the findings of Cooper and Thomas (2002) also noted an instant change in some of their participants as they walked down the corridor to their dance class "I hear the music..... and my spirits lift", just as Kathleen describes here upon entering the dance hall; the dancing was seen by their group of older adults to be the "last chance to have some fun in their lives" (p.697). Florence and Les explained how dancing made them forget about their aches and pains. Florence mentioned that once she started dancing she 'forgot' about her back pain for the hour-long class and just carried on "I could be sitting at home doing nothing, being miserable or going out and as I say, once you start, you forget about it" (3/8/236). Les' distraction was similar, "It gives you something totally different to think about, while you're thinking about that, you're not thinking 'oh my knees hurt', you know" (3/10/292). The aches and pains were lost to the enjoyment and pleasure gained from the dancing, even if it was only temporarily when individuals were lost in the moment of the dance. Indeed, Skinner's (2010, p.7) study of salsa dancing found it to act as a "constructive form of escapism"; a release from constraints in work and life for dancers. Similarly, Picart and Gergen's reflections of ballroom dancing highlight "for a brief moment, I may enter a transcendent world with no name" (2004, p.864).

Isabel talked of enjoying the tea dances she attended at the town hall because it gave her an opportunity to do the dances she had learnt and "you can just let yourself go and enjoy it" (1/8/9) again indicating that at that point of letting herself go. She was not concerned about anything else other than performing the dance. Kathleen had talked of turning the clock back in her interviews, and of note, talked about how dancing made her feel better personally as sometimes she did not feel like going to the classes:

Before I go I think oh, you know, I don't want to go. I turn out and then as soon as I am there, I change and I feel better being amongst people and I really enjoy it and I come away feeling a lot better, feeling more, younger. (2/2/37)

This related back to her comment about not feeling like 'just an old lady in a chair' and that she realised because she could participate in the dancing and do so with considerable skill that she felt she 'did quite well' considering her age and comparing herself to others.

Robert and Brenda discussed watching adults dance, whom they considered to be older and frailer than themselves. Section 10.4 refers to the physical support ballroom dancing can

give individuals in a partnership and Robert and Brenda spoke with enthusiasm about how they could also see the enjoyment these older adults gained from being able to participate (1/6/32). This in turn had provided them with a sense of inspiration.

This observation was also made during the ethnographic dance study by Thomas and Cooper (2002) who noted in spite of the advancing age of some of the dancers, they appeared to dance with vigour, and participants with disabilities appeared to become *able* when dancing with one dance leader stating, "I've seen people in town with walking sticks and two hours later I've seen them dancing away as if there's nothing wrong with them" (Thomas and Cooper, 2002, p.70) thus the importance of physical support and guidance from a partner must not be underestimated.

11.3.1 **Summary of Distraction from Life's Worries**

Given the above examples, it is suggested ballroom dancing appears to counterbalance the pathologies often associated with older age and thus provides a sense of resilience to ageing. It can provide a sense of renewal for the ageing body, has a restorative effect on emotions, a reminiscence of youth and a sense of peace and distraction from one's life worries. As Picart (2002, p.34) reflects, she found a sense of "catharsis as the music begins". Mavrovouniotis et al. (2010, p.216) discuss similar findings in their study of Greek traditional dancing. They suggest that dance is effective in improving the mood state for older adults through its complex kinetic nature, thus providing a "body-spirit reconnection" for the individual to the world. The combination of music and movement was deemed to provide improvements in well-being, reductions in anxiety and present individuals with a sense of "flow" in life; in this state individuals would lose sense of time, forget personal problems and be able to take "time out" from daily routines (Berger, 1993; Wankel, 1993 cited by Mavrovouniotis et al., 2010, p.216). Kathleen had talked of being able to forget her family issues and Les and Florence were able to forget their physical ailments whilst in the moment of the dance, they were perhaps in this instance *in the flow*.

11.4 **Beneficence**

On many occasions ballroom dancing was mentioned as making individuals 'feel better' as indicated above, but in addition to this, those participants who also ran tea-dances or helped at other dance classes in a peer mentor role also spoke of how teaching *others* to dance and seeing them benefit gave a reciprocal sense of feeling good. Sheila, Patrick and Les had undertaken a dance leader training course and Pamela had also trained as a physical activity peer mentor funded by the local council.

Sheila spoke of a couple that had been on the same cruise holiday who had been isolated from the rest of the guests and Sheila and her husband had decided to invite the couple to dance. She recalled how the lady "was so grateful that it gave us a real feel good factor because they'd been totally isolated" (1/14/39). In addition, the tea dances she ran with Patrick made her feel good knowing they were benefitting the lives of others; "elated", "rewarding", "it's lovely to see people smiling and enjoying it" were terms that the couple mentioned in relation to their own spirits being raised by their involvement in ballroom dancing activities designed for the benefit of others. Patrick spoke of the lady who had been heart-broken by the closure of the Salvation Army hall until she started attending the tea dances and told them, "Do you know, this has changed my life.....and you just think, well, you've probably turned her life round for the latter end of her life, which has got to be good hasn't it?" (1/9/32).

Les talked of enjoying being involved in the teaching and watching others learn and that it was fun, "You know, thumbs up and they're chuffed when they get it as well" (2/6/155). Les had a reduced exercise tolerance due to his health problems, yet on the dance floor he would come alive. He knew he was an experienced dancer and had retained much of his skills, albeit admitted finding some moves more difficult with his advancing age. He remained modest about his ability but clearly relished the opportunity to help and teach others as if it provided a new role in his life post-retirement and a sense of purpose to his weekly schedule.

Although at times having a negative impact on her own enjoyment of the dancing, Pamela also found herself assisting novice dancers as she attended the classes alone therefore rather than progressing her own skills she was working backwards to teach others the basics. However, she balanced this with the view that "whilst I might not be dancing and getting enjoyment for myself, at least I'm helping [teacher's name] teach someone else" (1/19/556).

These findings concur with those of Nadasen (2008) who found in a cohort of older, female line dancers that those in the group with experience who assisted running voluntary community based line dancing sessions for women in a retirement centre felt, "a greater sense of social consciousness" and a "sense of worth to engage in community activities to address the challenges of the less fortunate" (p.336). Sheila, Patrick, Les and Pamela exhibited this renewed sense of "worth" and feeling valued in their community activities following their retirement, which in turn can provide social and well-being benefits for older adults.

11.4.1 **Summary of Beneficence**

For these four participants in who had formalised their involvement in teaching, the role had become a significant part of their routine. For Sheila and Patrick in particular, being responsible for the full organisation of their village tea dances in their commitment to provide the event for their local community gave a sense of satisfaction that they were doing good by helping others. Wiles et al's (2012) work on resilience and ageing would suggest such active involvement in, and positive contributions to one's local society, which in turn contributes to one's resilience during ageing through the sense of community, support and enjoyment it can provide. The avenue provided by ballroom dancing for social "connectedness" between older adults and their community is also considered to be one of the important environmental factors associated with resilience in ageing (van Kessel, 2013).

11.5 **Chapter Summary**

In summary, this chapter discusses the intrinsic elements of ballroom dancing that provided pleasure and enjoyment to individuals. Ballroom dancing classes were considered to be enjoyable and fun, were something for participants to look forward to each week and had become part of the routine of life. A sense of enjoyment was gained from ballroom dancing due to its ability to raise an individual's 'spirit' and provide a positive emotional state and a distraction from life's worries; there was a focus on being in the moment or the flow of the dance and forgetting one's troubles at least for the duration of the dancing. De Young (2009, p.16) discusses "Restorative Environments" and suggests these to be places where individuals can "be away", thus escaping daily routine, provide "compatibility" between opportunities and one's inclinations and "extent" whereby the space provides coherence and scope. Whilst De Young (2009) uses the example of walking in natural environments and a restorative activity, it might be suggested from the findings within this theme that the dance floor also provides such a space. Participants acknowledged ballroom dancing provided a means of escape from routine, the environment provided a space to fulfil their desired inclination to dance and the "cognitive maps" used to interact with one's environment provide coherence and predictability, thus consuming less mental effort.

It appears that enjoyment is inextricably linked to other factors such as the musical accompaniment, the social aspects of dancing, being with a partner or being amongst other likeminded individuals and reducing the sense of social isolation for some, as Julie exclaimed, "I enjoy the whole experience!" (3/6/145). Ballroom dancing provided purpose and meaning in life. As Kathleen had noted, she was not just an old lady in a chair she was able to, in a sense, mitigate the ageing process, revert back time, renew her body and feel young again. The sense of enjoyment provided well-being and offered a level of

transcendence from physical ailments and anxieties, thus contributing to one's resilience to the ageing process. Gattuso (2003) discusses the concept of resilience and wellness for women in older adulthood and notes Tulle-Winton's work on 'successful ageing' (1999, p.297 cited by Gattuso, 2003); that it involves older adults "shielding us from the sight of his/her mental or physical decrepitude". Ballroom dancing appeared to provide this for those with physical ailments; in spite of some severe problems for some of the participants, this 'physical decrepitude' was negated or masked from view when these participants were able to perform dances. This in turn would be likely to result in a positive sense of self, an important attribute of resilient ageing. It is a combination of the individual, community and cultural interactions that contribute to resilience mechanisms (Davydov et al., 2010).

Perhaps in support of the findings in the sub-themes of this chapter, Picart's reflections of her ballroom dancing performances provide a suitable summary of the enjoyment one gains from ballroom dancing,

As I am gallantly escorted off the floor, my arm tucked into Daniel's ever gentlemanly arm, I reflect on how the allure, joy, and challenge of ballroom dancing remain perhaps impenetrable to outsider eyes. There will always be the spectacle, the glamour, the mirages, the competitive rush, the applause, and the awards. But beyond these, to me, is an unadorned confrontation with one's bodily, emotional, and spiritual limits in dynamic conversation with a partner, music and a larger audience- a testing of whether one can, for a brief moment in time, surrender one's self to the unfolding of the richness and vastness of being mere human flesh that for an all too brief period, may become an embodiment of something that transcends mortality. (2002, p.60)

Chapters 8 to 11 have presented the qualitative findings as 4 key themes and provided some comparisons to the previous body of ballroom dancing literature. Chapter 12 will present the discussion of this mixed methods study and provide complementarity of the quantitative and qualitative findings.

Chapter 12 Discussion

The aim of this 12-month study was to consider the influence of ballroom dancing on the physical, mental and social well-being of older, community-dwelling adults. Qualitative, semi-structured interviews were used to explore the experience of the physical health and well-being effects, the sociality and the meaning of ballroom dancing for older adults and its potential role in enhancing what has been referred to as 'resilient' ageing (Hicks and Conner, 2013). In addition, the qualitative findings were augmented by a quantitative strand of investigation assessing functional and well-being outcome measures using the mixed methods approach of 'complementarity'. Physical and mental well-being were monitored over a 12-month period by the use of functional outcome measures and psychological well-being measures that are commonly used in clinical practice.

Specifically the research questions were to explore:

1. Does social ballroom dancing influence resilience in older adults?
(Based upon participants' interview accounts and relevant quantitative findings using the complementarity approach)
2. Does social ballroom dancing influence balance and functional activity outcome measures for older adults?
(Based upon functional outcome measures)
3. Does social ballroom dancing influence psychological well-being for older adults?
(Based upon well-being outcome measures and participants' interview accounts using the complementarity approach)

The key findings with regard to the role ballroom dancing plays in enhancing health and well-being for older adults is presented, discussed, and contextualised alongside relevant literature. The reader is signposted to the sections where the above research questions have been addressed. As will be identified, physical and psychological well-being are seen as components of one's 'resilience' in ageing and although addressed separately with the collection of quantitative data (research questions 2 and 3). Questions 2 and 3 help to inform and complement question 1 and the over-arching theme of resilience in older adults, which is presented latterly in section 12.5.

A model of the practice of ballroom dancing is proposed, as derived from the findings of this study, with recommendations for the design and organisation of ballroom dancing classes to optimise long-term adherence. A reflexive account of the research process is provided with

consideration of the achievement of the research aim and objectives and how each research question has been addressed.

The contribution to knowledge this study provides will be highlighted, with further consideration of quality measures, the strengths and limitations of the study and recommendations for future research.

12.1 *The Practice of Ballroom Dancing for Older Adults*

Recognising the low levels of physical activity amongst community-dwelling older adults and the importance of physical activity to maintain health and well-being in one's older adult years (Flynn and Stewart, 2013), this study aimed to explore the experiences of a community-dwelling older adult population over a 12-month period using qualitative, semi-structured interviews. This enabled exploration of factors associated with adherence to ballroom dancing over a longer time period than many of the previous studies mentioned above and the potential role of ballroom dancing in enhancing one's resilience in ageing.

12.1.1 Ballroom Dancing and Social Inclusivity

The findings from this study indicated that ballroom dancing is a physical activity that is enjoyed by older adults from a broad spectrum of social groups as defined by the Index of Multiple Deprivation (NPEU, *n.d.*). In contrast to studies that report lower levels of physical activity in lower socioeconomic groups (Elhakeem et al., 2017; Marshall et al., 2007), this study found no particular trends or differences between adherence levels and social groups albeit, these preliminary findings report on a small sample size. This would be an area for further larger scale research, but provides encouraging adherence rates across the spectrum of social groups (see section 6.1). Ethnicity has been associated with the prevalence of leisure time physical activity in that minority ethnic/ racial groups partake in less leisure time physical activity (Marshall et al., 2007); however, this could not be examined within this cohort as the sample was not sufficiently culturally diverse and not representative of the ethnic diversity of the local population.

The social and cultural history of ballroom dancing and the qualitative findings provides some clues as to the popularity of ballroom dancing for older adults from a range of social groups. In the United Kingdom (UK) by the 1920s, ballroom dancing competitions had become popular and the emergence of the Blackpool dance scene gained momentum (White, 2009). In northern England, there was increased participation in ballroom dancing particularly amongst working-class couples (Karatsu, 2003). The study was undertaken in

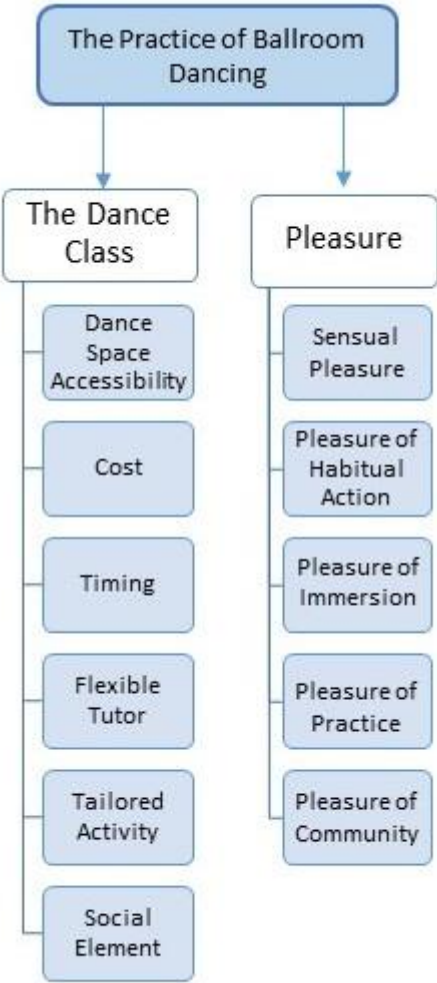
the north of England, in an area where many working men's clubs and community halls remain and many have retained an element of social dance activity. The participants in this study often recalled attending such venues to dance in their childhood and youth from around the 1930s to 1960s with friends, whilst courting or in their early married social lives, such as Les, who had regularly attended dance competitions in Blackpool. The cultural influence of ballroom and sequence dancing in such venues as working men's clubs, church youth groups and local community dance halls introduced the activity of ballroom dancing to the participants in this study in their youth and crossed all IMD groups. Having a previous experience of dance appeared to be an influencing factor for many participants; it provided the avenue for their return to ballroom in later life as participants often cited their previous history and love of ballroom dancing as their motivation to return to the activity when time allowed (please see section 10.2). Given the differences between socioeconomic groups and adherence to physical activity and exercise in older adults (Elhakeem et al., 2017; Marshall et al., 2007; Trost, Owen, Bauman, Sallis and Brown, 2002), this is an interesting and potentially important finding that ballroom dancing in this cohort appeared to be a physical activity with very good adherence rates across a spectrum of social groups over a 12-month period.

At 12 months, 74% of participants had maintained or increased their weekly hours of dancing. This was in spite of several participants sustaining injuries or managing acute episodes of illness or long-term conditions. The qualitative findings from this study in particular enabled a sense of the factors associated with adherence to ballroom dancing.

12.2 *The Practice of Ballroom Dancing*

There has been little consideration of specific factors that influence older adults' practice of ballroom dancing. The findings of this research study have been used to propose a model for the practice of ballroom dancing, incorporating characteristics that the participants noted contributed to very good adherence rates to this activity. Figure 9 demonstrates the relationship between the main themes that emerged from the findings that were important factors contributing to the practice of ballroom dancing for older adults. Such factors were grouped in two main themes; the dance class characteristics and the 'pleasures' that can be gained from ballroom dancing. An understanding of these factors can help dance teachers plan their dance classes to optimise participation.

Figure 9 The Practice of Ballroom Dancing for Older Adults



The proposed model includes two important elements for adherence; the characteristics of the dance class itself and the typologies of *pleasure* associated with ballroom dancing. In the following sub-sections these themes will be discussed further.

12.3 *The Ballroom Dancing Class*

For the 17 participants who remained dancing weekly at 12 months, there was no intention to cease the activity. The remaining 6 participants who had stopped ballroom dancing regularly between 6 and 12-months tended to do so not because they did not enjoy the dancing, but due to considerable health limitations, injury, or for two of the partnerships, influenced by a lack of interest from their dancing partner. Even these two gentlemen did not report they disliked the dancing, more so they preferred other activities. However, all of these participants considered it was an activity that was left open for them to return to, should circumstances allow, because the structure of the classes and the flexibility of the dance tutors provided opportunity to 'come and go' as they were available or able to.

The qualitative findings were able to complement and inform the quantitative findings for attrition rates above. There were several important factors mentioned by participants regarding the dance class itself that related to adherence to practice. One of the notable themes relating to initial uptake of the dancing classes was that individuals had a previous history of dancing: whether it be a different form of dance such as taking ballet or tap dancing classes in childhood, attending dances whilst 'courting' or they had taken ballroom dancing classes previously. Cabrita et al. (2017) concur with this finding and suggest, based upon self-determination theory being one's "basic psychological needs that underpins intrinsic motivation and goal striving" (Evans & Hickey, 2017, p.123), that people are more likely to partake in an activity they are familiar with and with which they have had previous positive experiences.

Female participants who had danced in their youth often had the desire to dance again once time allowed and would often have to cajole their male partners to attend with them. At times, this was met with some reluctance by males. Given the points raised by some male participants in this study it is helpful to consider the historical development of gender and sexuality in dance, as this provides insight into why dancing is considered a feminine activity and one which men should only observe, and why men are often reluctant, at least initially, to be attending dancing classes. Some of the male participants who danced were a little concerned about being ridiculed by their non-dancing peers and being labelled 'gay' or 'effete'. However, this is a more contemporary concern. During the 16th and 17th centuries it was men who dominated the dance floor with ballets being performed by all-male groups in Italy and France. King Louis XIV himself performed dances before his court audience (Harris-Warrick, 1986; Williams, 2004). The 'effeminate' nature of dancing has been challenged by the inclusion of high profile professional sportsmen in television programmes such as the UK's *Strictly Come Dancing* and the USA's *Dancing with the Stars*. Nieminen's (1997) study of participation profiles and socialisation into dance among non-professional

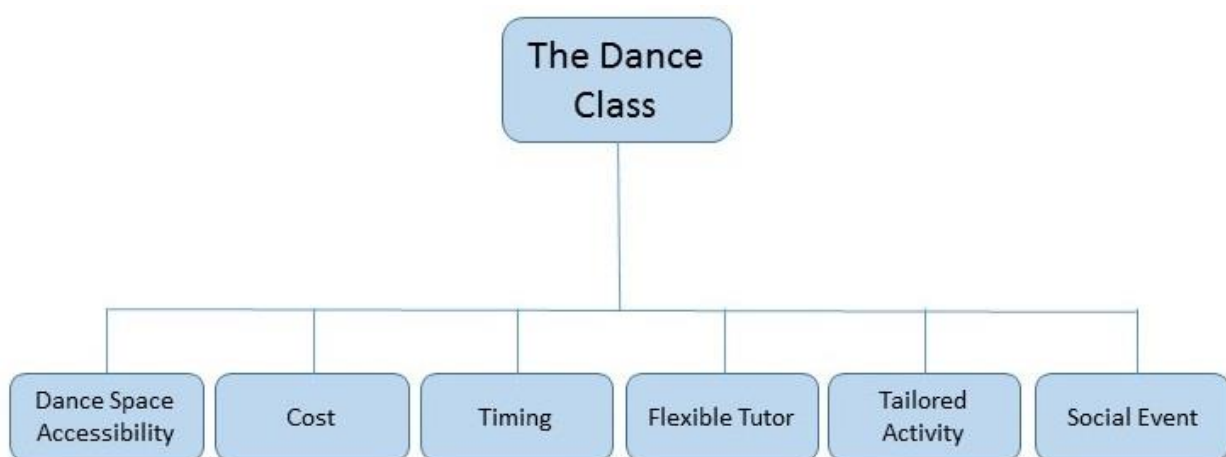
dancers found boys who dance face external pressures from peers of being labelled 'feminine' or 'homosexual'. Nieminen (1997) also found that among the male dancers, the influence of a friend of the opposite sex had a significant influence upon the uptake of social dance, which echo the findings of the current study. Male participants in this study were often cajoled by their female partners into starting dance classes, as Rod had joked, it was, "the threat of divorce" (1/18/524) that made him go to dancing classes with his wife Amy. It is an interesting point that females have a significant influence on males partaking in dancing, particularly given recent media attention to dancing. The appearances of popular professional male international sporting figures' on *Strictly Come Dancing* in the UK may challenge some of the concerns that some men have about dancing being seen 'effete' or a shame of being seen, thus encouraging men onto the dance floor. Ronnie had admitted being one of the more apprehensive males to start the dancing classes, considering what others might have thought, including his late father who would have said, "You what? Dancing, are you wrong in your head?!" (1/17/510). Ronnie's initial 'draw' to attend ballroom dancing was to participate in a physical activity with his wife to maintain, if not improve, her mobility levels, which had been affected by rheumatoid arthritis. At the end of the 12-month study Ronnie was one of the most committed participants and vocal about the pleasures he gained from the dancing classes. Similarly, Alan had started dancing with his wife Jean, with the same hope that it would assist with her mobility problems.

Nieminen and Varstala (1999) suggest non-dancers, primary, secondary and college-aged female students, hold more positive attitudes towards dance than males and that males' sports socialisation tends to be gender-specific. For example, it is suggested a father's encouragement as a role model influences the sports socialisation of boys and generally most fathers do not want their sons to be dancers, whilst a mother and elder siblings have been found to influence the sports socialisation of girls (Nieminen, 1997). Several of the male participants in this study recalled how their mothers or sisters had danced and this had elicited some interest in dancing for them; for example, Isaac recalled how his sister could jive and he also wanted to be able to. Whilst patterns might exist for such socialisation, one might suggest current 'trends' are challenging such ideas. The inclusion and success of several famous male sporting icons on televised ballroom dancing competition programmes is beginning to infiltrate male popular culture and given the findings of this study, when some of the men referred to their sporting heroes having been dancing contestants and how this has helped with their acceptance of attending dancing classes, it is perhaps beginning challenge the stereotypes many men hold of other men who dance, even in this older adult age-group. Although Skinner (2008, p.67) suggests dancing remains "less than third best to drinking and watching sports" for men, in 2006, the three-times American National Football League champion Emmitt Smith, won the *Dancing with the*

Stars series and urged other men to, “get out of their safety zone and try something new” (Rawe, 2006).

Having established a desire to dance, other important factors to help initiate and maintain one’s attendance at classes related to environmental aspects; location, accessibility and the dance space and the dance tutor’s flexibility and ability to tailor activities. In addition, a social element to the class was highly valued. These factors are highlighted in figure 10 below.

Figure 10 Important dance class characteristics



Participants noted that they sought a class that was geographically convenient. Kathleen in particular had expressed her concerns about driving to neighbouring towns as being so great that she would not attend events such as tea dances, for fear of getting lost, or not knowing where to park. Kathleen felt safe getting to her regular dance class as she was familiar with the roads and could drive. She liked to know where to park and hence the safety of the walk from her car to the class venue, particularly as she had become nervous walking outside following a serious fall. Trost et al. (2002) support fears such as a fear of falling, or concerns about neighbourhood safety, as being a barrier to physical activity. As the main dance class participants attended was at a leisure centre in their main town centre there was also a public transport (bus) route that could be used. However, most participants drove as there was ample, free parking available, therefore having a car and being confident to drive might be important to facilitate attendance at dancing classes (please refer to section 9.3). The dance space itself was of some importance. It was noted by some participants that some dance classes were held in venues where the dance floor was too small and participants were not able to move as freely; impacting upon their enjoyment and willingness to keep attending those classes. The main Monday class was held in a large, modern leisure centre sports hall with specialised flooring and good lighting.

It could accommodate fairly large group sizes and still enable participants to demonstrate and enjoy their floor-craft. During these classes a row of chairs were positioned around the edge to allow participants space to rest, but also watch the others dance whilst doing so.

It is also possible that the day of the week on which the dancing classes were scheduled might also influence one's attendance and enjoyment. Cabrita et al's (2017) study of physical activity and pleasure for older adults found that the day of the week activity was performed on was a predictor of pleasure. Activities performed on Mondays appeared to be less pleasurable than those scheduled on remaining days of the week, even for older adults who were retired. Although in this current research, the majority of participants attended a dancing class on Mondays and referred to the pleasures of the activity, it is important to note that the day of the week might have a significant impact on the level of pleasure gained. Timing of classes was also an important factor as it was recognised by those who attended evening classes, sometime it was a 'struggle' to motivate oneself particularly if the weather was not agreeable.

Another accessibility consideration was one of financial cost. The cost of attending ballroom dancing was fairly low, with classes being approximately £3 for individuals participating in a council-run group session. In addition ballroom dancing classes did not necessarily require any specialist equipment or clothing. The cost of private dance tuition was noted to be high and very few of the participants attended private dance schools (Sheila and Patrick and Emily and Michael were the only two couples who attended local privately-run dance school group classes during the course of the study). Several of the participants who started dancing via exercise prescription referrals noted the reduced cost of classes as being important and they would specifically seek out ways to extend the fee reduction by going to their GP for 'repeat prescriptions' of exercise on prescription schemes or, in one couple's case, negotiating costs of one class based upon the costs of attending a different class.

As noted in section 1.7, tailoring physical activities for older adults to accommodate one's physical capabilities or long-term conditions is of great importance (Hamer et al., 2015; Paterson and Warburton, 2010; Stevens et al., 2014). Participants described feeling supported, enabled and empowered by their dance teachers. Comparisons were made between dance teachers by those who had attended various classes and examples given of the influence of the dance teacher on their participation. A flexible, non-critical approach to the dance technique appeared to be important. Participants would mention at times they had difficulties with a dance, its speed, technicalities of posture, complexity of turns or steps and the importance of dance tutors supporting them and suggesting different approaches. Other dance teachers had been considered too critical if techniques were not perfect.

Brenda and Robert, who were both affected by long term health conditions, had appreciated the opportunity to sit down on the chairs laid out at the side of the room when they needed a rest period. They could enjoy watching others dance during this break and yet still felt part of the group. Their dance teacher was very aware of their physical restrictions and would always encourage people to rest and avoid over-exertion, particularly as several participants had pre-existing cardio-respiratory conditions. A non-judgemental, flexible and tailored approach from the dance teachers that allowed participants to engage and rest as necessary provided an inclusive approach to the structure of the dance class.

The strongest theme to emerge from this study was that of the enjoyment of the social aspects of ballroom dancing. Ballroom dancing is inherently a social activity because it is a partnered activity, involving touch and human contact. Dancers are then involved in the wider community of people on the dance floor. Often during or aside from the dance class, there is a specific element of a 'social' gathering, such as a rest period for refreshments. The social aspect of ballroom dancing is also evident with the organisation of social tea dance events, which many of the participants attended, or as in Patrick and Shelia's case, led in their local village. The social importance of ballroom dancing will be expanded upon in the following section on 'pleasure', suffice to say at this point, participants specifically noted it as a reason for their continued attendance at the classes, as Robert highlighted "the social side of it has become as important, not just the dancing side" (1/2/23). It is therefore recommended that an opportunity and space to socialise is provided to the group during a rest period for refreshments during the class or following the end of the dance class.

12.4 *Ballroom Dancing and the Experience of Pleasure*

The over-riding theme during interviews was that of the 'enjoyment' that ballroom dancing provided for dancers; not only the act of dancing itself, in terms of aspects such as the aesthetics, the sense of freedom of movement and self-expression, but the sociality of the dance; with one's partner and within the group. This section presents a discussion of the findings in answer to research question 3, considering the influence of ballroom dancing on psychological well-being for older adults.

The theme of '*Enjoyment*' shows many parallels to Phoenix and Orr's (2014) qualitative study on '*Pleasure*' and physical activity amongst older adults. 'Pleasure' is defined as, "being the diverse emotions that make a person 'feel good', including, "happiness, joy, fun, sensuality, amusement, mirth, tranquillity" (Smith, 1980, p.75)" (cited by Phoenix and Orr, 2014, p.96). Phoenix and Orr (2014) identify 4 typologies of pleasure; sensual pleasures, documented pleasures, the pleasure of habitual action and the pleasure of immersion. With

the exception of documented pleasures, the other 3 types emerged from the data as evident within this sample population of older adult ballroom dancers and examples will be presented in the subsequent sections. 'Documented pleasures' relate to the documentation of one's activities after the event in diaries, training logbooks or other forms of written accounts. None of the participants in this study mentioned participating in this form of pleasure.

Enjoyment, fun, joy and amusement were frequently quoted by participants in this study as being important aspects of the ballroom dancing activity. Not only did the sociality of dance provide participants with a definite sense of enjoyment but it was found to be a key factor for adherence. Cabrita et al. (2017, p.1) suggest that, "pleasure is one determinant of intrinsic motivation" but is often forgotten when promoting physical activity for older adults and is "under-researched and under theorised" in healthcare, yet enjoyment and pleasure in activity are key components of health behaviours (Phoenix and Orr, 2014, p.94).

Participants in this current study had mentioned that they would not continue with physical activities if they did not enjoy it, which was why dancing had been an attractive option for them with its combination of movement, musicality and sociality.

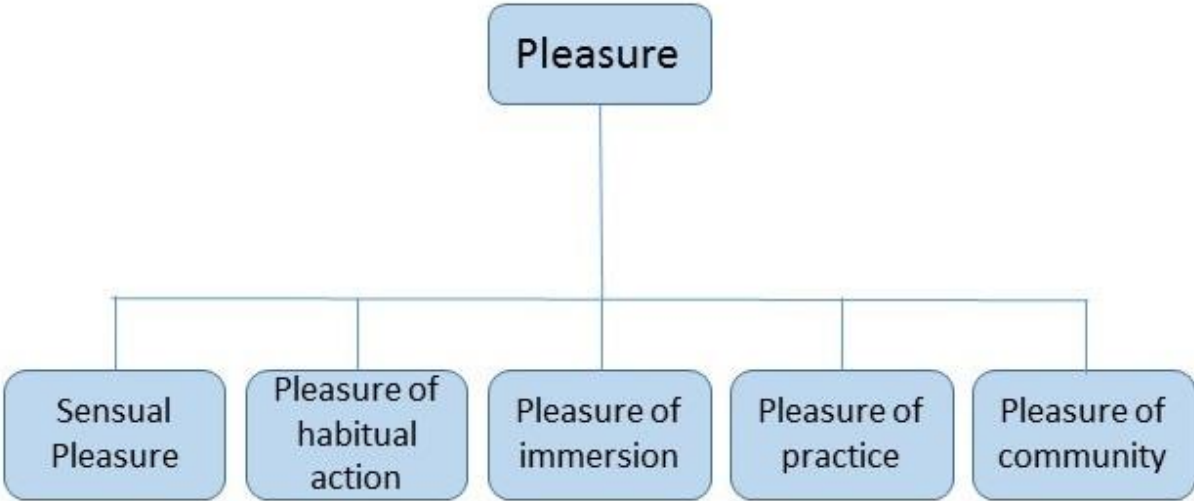
Pleasurable activities for older adults have been shown to be associated with better physiological function, sleep, positive emotions and general health, social support and resilience to change (Cabrita et al., 2017). The quantitative component of this study offers support to these findings in that participants displayed better scores for several physical function tests, displayed 'healthy' levels of well-being and demonstrated low levels of anxiety for falls compared to normative data (please refer to Chapter 6).

12.4.1 Developments in Pleasure and Physical Activity

In addition to the typologies of pleasure suggested by Phoenix and Orr (2014) that apply to this study, namely, sensual, habitual action and immersion, this research highlights that there is more complexity to the types of pleasure associated with physical activity and proposes two further types based upon the prominent themes that emerged from the findings; the pleasure of practice and the pleasure of community. Sensual, habitual action and immersion pleasures and the additional two mechanisms through which there was evidence of pleasurable experiences; practice and community will be presented.

Figure 11 below represents a new model of the 5 typologies of pleasure of ballroom dancing for older adults that emerged from the data in this study. The following sections will describe these types of pleasures in more detail and provide examples of the participants who experienced these types of pleasures, alongside supporting participant quotations.

Figure 11 The Pleasures of Ballroom Dancing for Older Adults



12.4.2 Ballroom Dancing and Sensual Pleasures

According to Phoenix and Orr (2014) sensual pleasures encompass the sensory experiences of physical activities, such as the sensations of touch, sounds and smells.

The sense of sound was stimulated by hearing music to accompany ballroom dancing and was often highlighted by participants as being an important aspect of the pleasure of engaging in ballroom dancing. It provided a sense of reminiscence for individuals, of 'rekindling' their youth during earlier dance experiences. As Isabel suggested she would not go to exercise classes where there was no music, "If there wasn't the music it wouldn't be the same" (1/4/20). Kathleen considered there to be a combination of senses involved in her pleasure; those of movement and body awareness (a sense of proprioception) *and* the audible music that provided her with sensual pleasure and similarly Isabel noted, "you can move to the music and you *feel*... that's how I feel anyway, there's a rhythm to it" (1/4/20).

Touch is a sense constantly engaged during the experience of ballroom dancing. The touch of a partner, the lead, indicates the direction of movement or the next steps to be performed in the routine and one cannot successfully dance ballroom without attention to a partner's touch. This physical sensation was highlighted by Simon who had suggested ballroom dancing was a shared experience with his partner Elsie, they were together as a couple, "you've got *contact* with somebody" as there was a sense of awareness of each other. In ballroom dancing an acute awareness of a partner's touch is an important aspect of leading and following in dances, "My partner knows what I am going to do because my body tells them" (Les, 1/16/1). Isabel described the proprioceptive sensual pleasure of the bodily awareness of 'floating' around the dance floor when dancing with Les. The pleasure of following the touch of a partner, thus enabling dancers to dance provided a sense of instant gratification. Participants talked of sensations such as 'floating' as providing a source of pleasure.

The notion of sensual pleasure might be extended to involvement of the sensory/perceptual system of proprioception, which is responsible for the sense of muscular position and movement (Toates, 2011). Participants discussed their 'muscles not being used to' performing certain movements but that as they progressed they realised the adaptations were 'doing some good', thus the reported sense of improvement in posture, balance, joint position and body awareness via the sensory proprioceptive system provided a sense of pleasure. This was particularly pleasurable since participants were performing an activity in which they were, "too busy enjoying" themselves (Julie, 1/14/405). As discussed in Phoenix and Orr's (2014) work, sensory pleasure could extend past the present moment in which

the activity occurred. The sensations produced in muscles could remain after the event, for example, the feelings of stretching or mobility improvements in joints, the 'doing good' and the 'getting used to' sensations individuals felt.

Not only was touch important in terms of the contact with a partner and the enabling of the dance, but it also provided a psychological support when individuals lacked confidence in their physical abilities. Kathleen highlighted this when referring to her anxieties about falling having previously sustained physical problems resulting from a fall. "When you're dancing, you've got a partner to hold on to" she noted. This sense of touch provided a supportive role, a sense of safety, security and confidence whereas walking outside alone, "I'm always aware of it" (3/3/54). Similarly, Brenda and Robert had observed the supportive touch of others enabling a frailer individual in a partnership, "they support each other you know, husband and wife... they *so* enjoy it!" (1/5/24) demonstrating how they had seen touch contributing to one's enjoyment of the dance.

However, several participants discussed the intimate nature of touch in ballroom dancing and how there was discomfort with touching other than their life partner or regular ballroom partner in such a manner. Sheila had suggested, "You don't want to be as intimate with somebody else" (3/11/1306) and as Robert reiterated "so it proves to me we go with our partners to dance". In addition, Rod had discussed how he felt his 'touch' as the lead felt like he was "pushing a wheelbarrow", somewhat reducing the graceful touch sensation that others experienced during the dance.

In addition to the sensations of touch and sound in ballroom dancing, many participants spoke of the visual aesthetics of ballroom dancing and therefore there is suggestion that the sense of sight, of visual stimulation also provided participants considerable pleasure. This was evident in two ways, both as *participants seeing* and *the gaze of others*. Some couples, such as Brenda and Ronnie were inspired to begin ballroom dancing by the sight of watching others dance for many years whilst they were on holidays. Participants who had attended social dance events at such venues as the Blackpool Tower Ballroom marvelled at the sight; the beauty of the building itself, the ballroom floor, the costume, dress and make-up of dancers. It was considered and highlight of one's dancing experience and "mind-blowing" by Patrick (2/9/70). Eric's summary of the experience discussed the elaborate styles when dressing for the dance occasion and "it's, er, a *sight!*" (1/10/1). Dressing up to dance was a way for older adults to resist societal pressures to 'grow old gracefully' and avoid flamboyant dress and, adhere to "age-appropriate actions and appearance" (Barry and Yuill, 2016, p.191). It is suggested these visual pleasures were part of older adults' personal resistance to ageing and society's expectations of older people to disengage from society, in

terms of the 'Disengagement theory' in preparation for death (Cumming and Henry, 1961 cited by Barry and Yuill, 2016, p.192).

Once some of the couples improved their skill levels and confidence and felt capable of dancing in front of others at social dance events, they used the opportunity to be seen to dance in front of others. As Claire had highlighted "this was one of the points of doing it, was to go to Blackpool and sort of show off a bit, you know, to actually do it in front of everybody else" (1/15/446). Perhaps this might also indicate the possibility of a 'pleasure of performance' and this might be a provisional theme to further explore in more experienced older adult ballroom dancers. There is no doubt that those even observing others dancing at such events gained pleasure from watching others perform as Claire had recalled the audience were watching her and her partner Isaac dance and that they had been given a round of applause at the end of their routine. This was recalled as a pleasurable experience. Although for some the gaze of others was a more disconcerting experience causing participants such as Richard and Jeane to shy away from participation for fear of embarrassing themselves.

The sensory systems of touch, proprioception, visual and auditory stimulation, either alone or in combination elicited by the practice of ballroom dancing can provide an avenue for pleasure for older adults. The experience of a combination of such sensual pleasures can also assist with individuals connecting their "body to the world" and, "connecting with one's environment" (Phoenix and Orr, 2014, p.97). The body's sensual experiences appear to form an inter-relationship with their environment, as evidenced by the visual pleasure gained from watching dancers or being watched, the aesthetics of the dance, the nature of the dance floor or the dance space.

12.4.3 Ballroom Dancing and the Pleasure of Habitual Action

The pleasure of habitual action relates to the habitual involvement in physical activity and the pleasure, "evoked by the habit of doing the activity", which provided an element of structure and purpose in life, particularly after life-changing events such as retirement (Phoenix and Orr, 2014, p.98). Within this study, the need for structure and purpose was particularly evident for those who had recently retired such as Pamela and Les, who both spoke of needing a structure in their life. For Pamela, her alarm clock post-retirement was set as it was for work, but now her week's 'work' consisted of numerous forms of physical activity "so in that way, it is self-motivation, but I do treat it like work, which helps and it's a socialising side of it as well" (3/16/431). Les also spoke of the importance of ballroom dancing as being something he had to "get up and go to, be there at a certain time"

(3/2/38). Julie also highlighted her life was not now "governed by clocks" in terms of work commitments, leaving time for dancing to become "part of our routine of life now really. I wouldn't think of not going" (3/10/256) and she would often describe her 'love' of the dance experience. Many of the participants in this study had very recently retired and one of their first concerns was to find a new structure for their lives, new activities and new social avenues. Ballroom dancing became one of the elements that provided that new structure. For some participants, their lives were organised around dancing, including going on dance holidays, attending social dance events or avoiding clashes such as visitors coming or having to care for grandchildren on the days of their dancing classes. The pleasure of ballroom dancing now needed to be balanced and organised around one's day-to-day life.

In Phoenix and Orr's (2014) work with physically active older adults, their various physical activity regimes had become a routine in life. Similarly, ballroom dancing had become part of a routine for the majority of participants in this study. Phoenix and Orr (2014, p.98) cite the work of Shilling (2008) who suggests that:

Habitual action is associated with a balance in the relationship between one's social and physical environment, biological need and bodily potentialities. It involves embodied subjects realizing routinized [sic] modes of behaviour that in turn, might connect them to, and facilitate the management of their surroundings and their bodies.

An example of such a relationship might be continuing the 'habitual action' of attending dance classes to realise body potentialities, even when the physical environment was less than appealing. Classes late at night when it was dark and cold outside did impact upon one's motivation with Sheila noting "we sort of push ourselves to go" but that "you feel good afterwards", with the latter providing motivation, when perhaps other factors such as the late nights and bad weather caused decreased motivation levels. Section 1.4 discussed individuals taking responsibility for their own health and highlighted Crawford's (2006) work on 'healthism'; that is health is not achieved by instant gratification or consumption practices in the moment, and that to achieve health, individuals must accept a positive benefit of 'pushing' themselves to give up consumption and pleasure in the moment. Ballroom dancing is not an activity that provides an instant gratification in terms of providing a sense of achievement. Dances consist of steps, turns and routines that take time to master and participants need to 'stay the course' and maintain interest for at least months if not years to achieve their longer term goals. The participants who persevered with dancing certainly did so driven by passion in the aim for their long term goals. This

group of dancing participants persevered despite set-backs, particularly associated with their or their partner's physical health. This was particularly evident for participants such as Jeane and Robert. Jeane's husband Alan had said to her during the interviews, "You do actually make an effort don't you?" (2/26/666) in reference to her overcoming several ailments to participate in the dancing classes. Similarly Robert and his wife Brenda also participated in spite of their physical limitations. They had been inspired by watching other older, more disabled individuals dance and were of the mentality, 'if they can do it, so can we'.

Les also discussed his biological need to improve his health following his cardiac event. "It took me a while to realise I ought to, I thought I can manage without, then I thought oh come on, you're Michelin man!" (1/8/30). He 'realised he ought to' fulfil his bodily potential and ballroom dancing became his form of habitual pleasure to enable this. In Les' case, he returned to a physical activity that had provided him much pleasure in his youth.

Kathleen's environmental concerns related to access to the dance classes, she would only attend if she was familiar with the driving route, if it was very local and if there was a safe place to park her car. If these criterion were not fulfilled, she would not travel to classes or dance events. However, the dance class she attended weekly was at a leisure centre local to her home, she was familiar with the driving route and there was ample free parking outside. When considering her reasons for maintaining this habitual action of ballroom dancing, Kathleen noted:

Before I go, I think of, you know, I don't want to go. I turn out and then as soon as I am there, I change and I feel better amongst people and I really enjoy it and I come away feeling a lot better, feeling more, younger. (2/2/37)

Kathleen demonstrates a relationship here between her social and physical environments; she is in the company of familiar people, at a safe venue she knows. Kathleen's biological needs are addressed as she begins to feel better; and her body demonstrating its potential as she begins to feel younger. The mind 'feeling better' and body's sense of 'feeling younger' indicates an enhanced sensual pleasure through the habitual pleasure of ballroom dancing for older adults.

12.4.4 Ballroom Dancing and the Pleasure of Immersion

The pleasure of immersion is noted to be the pleasure derived from being able to “escape from and/or gain perspective on issues demanding attention” in one’s everyday life (Phoenix and Orr, 2015, p.99). The sense of enjoyment and pleasure that participants discussed related to their ability to ‘forget everything’ when ballroom dancing and this was a prominent aspect of the meaning of ballroom dancing for them. Sheila has discussed how dancing had helped her cope during the period when her mother was dying and escaping from the oppressive atmosphere of the hospital visits. Kathleen felt she was able to manage her constant anxiety regarding family troubles by dancing “I just forget everything and then, and just enjoy it” (3/6/136). Phoenix and Orr (2014) discuss how detaching from one’s daily concerns and/or people involved attachment to another place and this appeared to be the case for Kathleen’s attachment to her ballroom classes, it was her *therapeutic landscape* (Hoyez, 2007 cited by Phoenix and Orr, 2014).

Whilst the ageing body might constrain or limit pleasures due to physical changes, several participants discussed how, when in the moment of the dance, they forgot their aches, pains and other ailments because the pain was over-ridden by the sense of pleasure of the act of dancing. Immersion enabled such transformation that their aches and pains were forgotten when in the moment of the dance, as demonstrated by Florence who ‘forgot’ about her back pain when dancing “I could be sitting at home doing nothing, being miserable or going out and as I say, once you start, you forget about it” (3/8/236). Les had also noted the dancing took his thoughts away from his knee pain, for some individuals dancing provided a transient distraction from their day to day selves. Concentrating on the steps, the routines, the attention being paid to one’s partner gave participants “something totally different to think about” (Les, 3/10/292).

With reference to Skinner’s (2010, p.7) work with salsa dancers, he provides the example of ‘Sondra’ using dancing as ‘an escape’ from “a close knit Christian community” where she works. By joining the crowded dance floor, of diverse, sometimes anonymous bodies, it allowed her to ‘escape from’ her life. Another participant in Skinner’s study used dancing as a resistance to her strict Protestant upbringing, with women in Skinner’s study all being conscious of the male gaze on the dance floor as they danced to escape the ‘drudgery’ of daily life (2010, p.7). Certainly for participants such as Kathleen and Les, who both lived alone, dancing provided an escape from their isolated routines.

Cather previously described dance “as almost a type of narcotic for young women” (1918, p.197 cited by Jensen, 2001, p.13). It is argued from the findings of this study and similar

papers such as Thomas and Cooper's (2002) study, that ballroom dancing could be 'a type of narcotic' for some *older* women and men too. Kathleen exclaimed she would dance all the time if possible, and took every opportunity to attend dancing activities, as did Julie, who, with her husband Ronnie, were one couple who had increased their hours dancing as the study progressed. Julie suggested they would not think of not going dancing now, it *had* become almost an addiction for some, they were fully immersed in the physical activity and being a dancer had become a significant part of their identity.

12.4.5 Ballroom Dancing and the Pleasure of Practice

There was a consensus amongst participants that pleasure was gained through the practice of ballroom dancing.

The participants' involvement in ballroom dancing as a form of physical activity provided a sense of physical competence. Kathleen had stated she was "not just an old lady sitting in a chair doing nothing". However the competence not only took on physical forms, whilst Kathleen was physically active, she was also learning a new skill and she was involved in a society and, as did her fellow dancers, she gained considerable pleasure from this. Les had stated that in spite of his health limitations, ballroom dancing was, "Something I *can* do!" (3/2/57).

Mikkelsen relates such instances of 'becoming other' through pleasurable activities to Abraham Maslow's (1954 cited by Mikkelsen, 2017) concept of *self-actualization*, the highest level self-fulfilment 'need' in his motivational theory of the 'hierarchy of needs', whereby individuals have an inherent desire to "become everything that one is capable of becoming" (p.93). As Kathleen's 'education' (skill level) increased, so did her sense of pleasure and sense of 'becoming other'; the feeling of renewal and 'turning back the clock' that ballroom dancing provided for her and for her fellow dancers. The dance provided the sense of being *able* when their day to day lives were troubled by physical ailments and for some, cognitive decline. The participants were gaining new confidence and skills, feelings of accomplishment ('esteem needs' being the second highest level of need according to Maslow (1954 cited by Green, Tones, Cross and Woodall, 2015, p.217)), satisfaction and greater motivation as they danced.

Participants very much valued the confidence gained from learning a new skill during their older adult years, a period of the life course where societal influences often cause older adults to become invisible. Wainwright and Turner (2006, p.243), suggest there is an, "inevitable decline of physical capital in the ageing body", particularly so in dancers. Les had talked of his frustrations about his body not doing what he wanted it to be anymore, yet he

retained his “muscle memory” of being able to remember dances sequences learnt long ago (Wainwright and Turner, 2006, p.247). However, he had taken on a new role as a dance mentor, assisting the dance teacher in some of the local groups he attended; as Abel (2007, p.52) notes “perceptions, skills and knowledge can be understood as cultural resources that are virtually stored inside the individual human body”. Les was able to use his “lifelong process of capital acquisition” (Abel, 2007, p.52) in this instance, his embodied knowledge as a dancer.

This accumulation of new dancing skills appeared to motivate participants to practice and develop their skills further. Most of the participants noted they started ballroom dancing classes with fairly low expectations of performance, they just wanted to be able to partake in dances, perhaps if on holiday, without embarrassing themselves too much. However over the course of the study as the participants’ skills developed, they perhaps increased their sense of competence-motivation. The more competent they felt, the more they wanted to further their skills. This led participants to comparing themselves to ‘newcomers’ or ‘beginners’ indicating they felt they had moved on from that position. Cooper and Thomas (2002, p.690) also discussed finding that social dancing experiences (largely ballroom or sequence dancing) provided older adults with a “sense of worth and achievement” when other skills had diminished.

12.4.6 Ballroom Dancing and the Pleasure of Community

Reference can also be made to Maslow’s hierarchy of needs with respect to one’s need for a sense of community (Maslow, 1954 cited by Green et al., 2015, p.217). The mid-tier, ‘belongingness and love needs’, the level above basic physiological and safety needs, is a psychological human need to form relationships, make friends and be part of a group. It has been well documented that activities that involve social contact lead to greater well-being and positive emotions (Cabrita et al., 2017) and that those who enjoy greater social support are more likely to participate in physical activities (Troost et al., 2002).

The majority of participants in this study began dancing classes post-retirement with their life partners as it was seen as an activity they could do and enjoy together as a couple. This was their primary reason for ballroom dancing. “A partner you can go together with is a special thing for us because there’s so many ladies who go and they haven’t got anybody to dance with and I feel really sorry for them” noted Irene (1/11/33). However, in addition to finding activities they could do together, they sought new social circles following the loss of work-life companions. This was perhaps important more so for those participants who were single or had experienced the loss of a partner. Cabrita et al. (2017) found that physical activity with a social companion resulted in a rather modest increase of 6% more pleasure

than activities performed alone. Haboush et al. (2006) also suggest that the physical contact with another provides a sense of a more personal experience and involvement in ballroom dancing as an activity. Pamela for example finding her enjoyment of dancing was less when she did not have a regular partner to dance with and sometimes had to 'sit out' dancers or dance with beginners:

So I'm left now without a partner and I tend to be partnering all the beginners and I'm just not getting the same exercise or enjoyment out of it, which can't be helped, you know. It's better than not going at all. (2/2/37)

She found that at times she would take on a peer support role if she herself did not have a partner, "Whilst I might not be dancing and getting enjoyment for myself, at least I'm helping Emma teach someone else" (1/19/556). Other couples such as Brenda and Robert attended the dance events noting they were limited by their physical health conditions, "We don't do much dancing but the social aspect of it is lovely" (1/10/38).

Dancers may suggest that when dancing, they 'become other', the transferring of the self and the body to a new space creates 'other'. For some, the dance space creates another home from home and helps to provide new confidences and consciousness integrating dancers into a new community space. The dancing space becomes one's home, which Skinner describes as one's 'communitas' (2010, p.14) where, "Rituals in which egalitarian and co-operative behaviour is characteristic" (based on the work of Turner, 1974, cited by O'Connor, 1997, p.154 cited by Thomas and Cooper, 2002, p.699). Whitworth (1995, p.209 cited by Thomas and Cooper, 2002, p.74) suggests "a community spirit is developed by the dancers having the common aim of performing a given sequence correctly". The findings of this study would appear to be in agreement with Skinner's (2010) observations of salsa dancers; there was a definite sense of 'communitas', a new egalitarian community space forming not only in terms of the people but the physical space open to all. This provided participants with a great sense of pleasure. Pamela had even described it as a 'second home'.

Participants would meet in the social space area for refreshments after their dancing classes noting even if their dance teacher was not there to provide refreshments, they would meet anyway. The café area was *their* social space.

However, outside of the dance halls, both in the study by Skinner (2010) and this present study, dancing in public is also something (or *somewhere*) when participants lack

confidence. This demonstrating that in private dance spaces, some become other, gaining confidence, losing inhibitions, but in a public space, one's self is more reserved, nervous, perhaps because for some people, their dancing passions are still the subject of ridicule from friends. Participants such as Richard and Jeane, whilst happy to dance within their enclosed private dance space, did not wish to participate in public dances. Jeane indicated she did not want to attend the social dances at the local town halls and Richard, much to his partner Rachel's annoyance, not wishing to dance at the prestigious Blackpool Ballroom, both for fear of embarrassing themselves. The above provides examples of the importance of the dancing space in providing a sense of community, feeling 'at home' and safe in the environment (as was highlighted in section 10.5).

12.4.7 Summary: Pleasure and Ballroom Dancing

The qualitative data findings established a theme of a strong sense of pleasure derived from the practice of ballroom dancing, from which a new model of the pleasures of ballroom dancing was identified and presented. Pleasure was considered to be found through 5 elements: sensual pleasure, the pleasure of habitual action, the pleasure of immersion, the pleasure of practice and the pleasure of community.

Similar to Phoenix and Orr's study of physical activity and ageing (2014) the pleasure of physical activity experienced by participants did not particularly appear to be connected with the *appearance* of their body. Whilst some participants spoke of improvements in posture or perhaps considering themselves needing to lose weight, there was little mention of the *appearance* of the body, particularly in terms of ageing. Phoenix and Orr (2014) also note that one's pleasure of physical activity may be genetically determined and therefore is an experience beyond a narrative concept, additionally citing the work of Cromby (2011) who suggests pleasures are "known corporeally *before* they are identifiable through narrative" (cited by Phoenix and Orr, 2014, p.100). Hence the identification of pleasure through one's narrative is one step removed from its original embodied occurrence and, therefore, the *communication* of the meaning of experiences ought to be considered. Pleasure is linked to one's desire to engage in a physical activity (Lenneis and Pfister, 2017) and previous research has called upon health policy makers to promote the pleasures of physical activity to encourage people to become active (Mikkelsen, 2017; Phoenix and Orr, 2014). If health promoters are able to encourage the pleasures of physical activity, such as provided by ballroom dancing, to become a 'habit' in one's routine, this is likely to increase one's motivation to adherence. Lee (2004 cited by Green-Wilson, 2017) suggests compliance, willpower, imagination and habit to be four important levels of motivation. It is suggested from the findings of this study that ballroom dancing had become a habit for those who continued to dance as many participants had discussed it was now part of their weekly routine and the main reason for this was that it provided a pleasure of community. The enjoyment gained from the social aspect of the dance and the sense of community that it provided appeared to be the strongest motivation to dance.

This study adds two new typologies of pleasure to the body of knowledge on pleasure and physical activity and the findings suggest that ballroom dancing is a specific form of physical activity that gives rise to considerable pleasures. Whilst it is important for individuals not to feel forced into activity by health professionals, provision of stories of individuals' experiences enables an element of choice when deciding upon the uptake of a physical activity. It is also important to acknowledge the constraints of engaging in physical activity,

such as social, financial and environmental and the fact that for individuals to derive pleasure from an activity such as ballroom dancing they must be able to master the skills to practice the activity (Phoenix and Orr, 2014).

It might appear that the results from these interviews almost appear bias in terms of the positivity of dance in the lives of the participants, however, this was the clear finding. The only mild sense of ambivalence appeared in the accounts such as those of Richard and Rod, who struggled somewhat with the *practice* of ballroom and cognitive challenge of remembering the steps. Their accounts indicated that perhaps this did have an impact upon the pleasure they gained from dancing, whilst they enjoyed it, their enjoyment did not seem to be sufficiently great to keep them wanting to dance by the 12-month point. Rod for example appeared to gain more pleasure from being active in his gardening duties, for that is where he preferred to spend his Monday afternoons and, contrary to the accounts of others, Richard preferred to exercise at the gym and was often away on holiday for extended periods meaning his attendance at lessons was inconsistent at times. Whilst these two participants might not have enjoyed dancing as much as the majority, perhaps because of their difficulties with mastering the activity demonstrating that ballroom dancing might not be an activity of choice for all, their accounts did still discuss elements of the pleasures they gained from the experience. Richard and Rod's preference for other physical activities did then have a negative impact upon their respective partners, Rachel and Amy. Although these women expressed great enjoyment for the dancing lessons and displeasure at their partner's lack of engagement, they felt unable to attend dancing lessons without their partners, thus having a negative impact upon their attendance. Robert and Brenda were also a couple that discontinued regular attendance at the dancing lessons between the 6 and 12 months data collection points. However, they both showed much enthusiasm for the classes and discussed the pleasures they gained from attending, even if their participation were more as class observers, their reasons for a decline in attendance was purely due to the considerable health issues that both were troubled by as these presented limitations in their abilities to travel and participate.

The results of this study suggest ballroom dancing could be promoted by health professionals as a tool for active ageing due to its contribution to numerous types of pleasures for older adults. For individuals who choose to dance, the narratives from this sample group indicate they realise the health benefits and increasingly do so as their time in attendance at dance classes progresses. In addition to the experience of pleasures, the quantitative data findings presented in chapter 6 suggest ballroom dancing can be a beneficial activity for one's physical *and* mental health, thus addressing research questions 2 and 3.

12.5 ***Ballroom Dancing: Resilience in Older Adults***

As discussed in section 1.3, the lens of 'resilience' ageing was used for this study. Having considered the models of ageing, rather than others such as active or successful ageing, resilience ageing appeared to be a more inclusive concept that allied with health and well-being in older adults. For example, resilience would help to explain how individuals who were troubled by health conditions in later life overcame their issues or how individuals dealt with times of adversity. Section 3.9.1 presents the research questions. Question 1 asks 'Does ballroom dancing influence resilience in older adults?' In the following section, the role of ballroom dancing for resilience in ageing for older adults will be discussed based upon the qualitative and quantitative findings, using a complementarity approach particularly for the psychological and physical aspects of resilience. Using this approach both sources of data are considered to help augment and inform the findings.

12.5.1 **Psychological Resilience in Older Adult Ballroom Dancers**

The concept of 'resilience' in ageing was introduced in section 1.3. Psychological resilience is defined as "a process whereby people bounce back from adversity and go on with their lives" (Dyer and McGuinness, 1996, p.227 cited by van Kessel, 2013, p.122) and it is seen as a dynamic process (Wiles et al., 2012).

The quantitative findings suggest that this participant sample demonstrated very good levels of well-being and these qualitative findings complement and inform these findings with the following quotations to address research question 3. Positive emotions are linked with emotional resilience (Davydov et al., 2010) and there was considerable evidence from the qualitative data in this study that ballroom dancing elicited positive emotions amongst participants both during and in anticipation of dancing. Whilst discussing traditional Greek dancing, Mavrovouniotis et al. (2010) highlight dance as being an effective factor for the improvement in mood state in older adults, specifically relating the kinetic activity of dance and accompanying rhythm to primitive ritual dances and a body-spirit reconnection.

The inclusion of a quantitative element to this study complemented the qualitative inquiry. It aimed to act as a feasibility study and was therefore not powered to detect significant effects; nonetheless, some inferential tests conducted (of the same format that would be conducted in a larger study) appeared to show effects of substantive importance. Two well-being measures were collected in this study at 3-monthly intervals, the CORE-GP test and the FES-I. In all recordings of the CORE-GP test over the 12-month study period, participants scored a range of 0 to 24 points. These scores indicated 'low level distress' in 2.54% of recordings and 'healthy' well-being values in 97.5% of recordings. In the 17

participants who completed the study and continued to ballroom dance on a weekly basis, although almost appearing static, there was an overall non-monotonic trend of a reduction in CORE-GP scores over time. This indicated an improvement in well-being scores, although the width of uncertainty intervals in relation to the between-time points estimates remained fairly large, as might be expected in a sample size designed for a pilot study.

The FES-I measure concerning one's fear of falling also indicated some difference between the participants who remained dancing at 12 months and those who did not. There was a 10% decrease in the clinical score and whilst it was not possible to show the effect was of a statistical significance, this difference could be of *clinical* significance. In this respect it is important to note one's *fear* of falling has been noted to be a "stronger predictor of non-participation in social activities than an actual history of falls" (Howland et al., 1998 cited by McKinley et al., 2008).

Both of the above findings warrant further investigation given the indications of positive well-being changes in dancers. Whilst this study showed some indication of improvements in well-being by quantitative means, the qualitative findings demonstrated a prevailing sense that ballroom dancing had a positive impact on one's mental well-being. At the baseline interview, Kathleen for example discussed her anxieties following a serious fall and the new confidences in her mobility that ballroom and enjoyment in life that ballroom dancing had provided her. Ballroom dancing enabled participants to re-create an embodied self that accommodated to ageing (Gattuso, 2003). Cabrita et al. (2017) highlight that positive emotions, such as those of enjoyment and pleasure can assist with individuals developing resilience to biological and social changes, which occur during older adulthood. The sense that ballroom dancing provided of 'feeling able' and the ability to look to the future are internal factors that van Kessel (2013) notes as also being important aspects of resilience.

Ballroom dancing helped Kathleen overcome her day-to-day anxieties both in her family life and her fear of falling, she looked forward to her weekly dancing as did her peers. It had helped Sheila during a time when her mother was terminally ill, providing her with an avenue of release from the upset of regular hospital visits. The pleasure ballroom dancing provided for participants provided a coping mechanism for the everyday adversities and vicissitudes of life. 'Coping' being one of three core attributes of resilience as presented by Hicks and Conner (2014, p.747) alongside 'hardiness' and 'self-concept'. Although the definition of self-concept is somewhat vague, it appears to align to one's perception of one's self and is likened to self-esteem, self-worth and one's ability to accommodate to challenges (Hicks and Conner, 2014). The challenge of learning the skill of ballroom dancing, the sense of achievement upon mastering a step or routine and the motivation this provided

participants to further develop their skills no doubt improved one's sense of self-esteem, their perception of being able (both in a physical and cognitive sense) and hence improved an individual's self-concept. In support of this, Herzog et al. (1998) note amongst retired older adults who no longer have parenting responsibilities, participation in leisure activities might be important in shaping one's self-concept and that leisure activities may contribute to a competent, active, agentic self, which in turn enhances one's well-being.

12.5.2 **Physical Resilience in Older Adult Ballroom Dancers**

One's physical capabilities in older age might well be dependent upon managing long-term health conditions, some of which might be a result of genetic and biological factors, and this places limits to what can be 'overcome'. The development of conditions such as Parkinson's disease are beyond one's control, yet the benefits of ballroom dancing for individuals with Parkinson's disease have been well documented (for examples see Blandy et al., 2015; Duncan and Earhart, 2014; Hackney et al., 2007; Hackney and Earhart, 2009a; Hackney and Earhart, 2009b). This study demonstrated several ways in which physical resilience is suggested to have been enhanced by the practice of ballroom dancing. The quantitative findings are complemented by qualitative findings using participant quotations to address research question 2, regarding the influence of ballroom dancing on physical health in terms of balance and function in older adults.

Participants in this study demonstrated very good physical function compared to normative data for several clinical outcome measures. Participants' scores were compared to normative data, as is common place in clinical practice. The TUGT scores indicated all participants displayed 'normal' mobility with 87% of participants showing a reduction in their timed scores (indicating better mobility) between baseline and 12 months. The Tinetti's (POAM) test mean score results categorised all participants as being at a 'low risk' of falls; and similarly, the Four Square Step Test mean scores suggested participants were in the 'non-multiple fallers' category. The Functional Reach Test mean results also indicated a 'not likely to fall' relative risk for 22 of the 23 completing participants. These results would appear to indicate positive findings in comparison to normative data. However, as there were 6 participants who fell within the group, one must question the sensitivity of these outcome measures for an active older adult population and it may be concluded that they were perhaps insufficiently sensitive to differentiate between levels of risk for this specific group. In spite of these tests being considered valid for an older adult, community dwelling population (AGILE, *n.d.*), participants generally scoring at or just under the best scores for these tests demonstrates a ceiling effect had been reached and the tests had limited predictive value in this participant population.

The balance measurements recorded for the BBS also presented positive findings with regards to balance; overall stability indices were compared to normative data and the study participants were found to present means within the normative data range for the Falls Risk Balance test, indicating a lower risk of falls. A critique of the BBS will be presented in section 12.7.1. However, if comparing to the available normative data, which is stated by the company in its user guidelines, this sample demonstrated lower mean falls risk OSI scores than the norm. This difference was found to be statistically significant at the 5% significance level, within the normative 54 – 71 age range ($p < 0.001$) and in the 72- 89 year old age group ($p = 0.030$). The participants in this sample had a significantly lower risk of falls compared to normative data, particularly in the group of participants aged 72- 89. These findings might conclude that significance was observed despite the study, as a feasibility study, not being powered to detect significant effects.

The postural stability test and limits of stability test demonstrated some interesting findings with regards to gender comparisons. Whilst there is no known comparable normative research data for these tests to match the age-groups in this study, only a ratio given by the manufacturers (for which no research paper references are provided), the PST and LOS tests demonstrated females had significantly better balance than males in this sample population. This was supported by the qualitative findings where some of the women reported being concerned about male partners and their lack of balance. Authors such as Gomes da Silva Borges et al. (2012), Gomes da Silva Borges et al. (2014), Fernández-Arguelles et al. (2015), Kattenstroth et al. (2011), McKinley et al. (2008) and Rahal et al. (2015) note that dancing statistically significantly improved balance outcome measures in older adult ballroom dancers, although reporting of methodologies did not allow for analysis of differences between genders. The effects of gender and balance in older adults at present remains inconclusive (see Daly et al., 2013; Scaglioni-Solano & Aragón-Vargas, 2015; Vereeck, Wuyts, Truijen & Van de Heyning, 2008).

It is also of note that no participants reported any ballroom dancing class-related injuries during the course of the 12-month study. At the most some participants reported some delayed onset muscle soreness-type symptoms following classes during their first few weeks of participation whilst their bodies adapted to new movement patterns. This suggests that ballroom dancing, supervised by an appropriately trained dance teacher, is a safe activity for older adults.

The methodological limitations (discussed in section 12.7.1) of this study limit the extent to which these positive findings of a low falls risk and better balance in older adult ballroom dancers compared to normative data might be generalised. However, they remain positive

findings for this cohort; especially given that many participants lived with long term cardiovascular, respiratory and musculoskeletal conditions, yet were still drawn to and *able* to participate in ballroom dancing. Kathleen had considered that ballroom dancing had improved the mobility in her knee (due to a fall she had sustained prior to dancing). She had noticed as the weeks progressed, the pain and stiffness had decreased. Jeane, who was perhaps one of the participants who struggled with several long term health conditions, discussed similar benefits accruing with improvements in her back and shoulder strength. This demonstrates ballroom dancing was used as a resilience mechanism to overcome physical limitations or pain and as Les had stated with regard to his physical health and weight in particular, "while I am not thinking about it I'm actually doing something about it but I am enjoying myself at the same time!" (1/8/30). Wiles et al. (2012) proposed a theme of attitude as being important to resilience in ageing, and this was further discussed in this research, whereby participants acknowledged the importance of a good attitude in keeping active upon retirement and preventing inactivity and apathy (refer to section 8.1). As with the experience of pleasure, there was little ambivalence raised by participants with regards to ballroom dancing being a useful adjunct to resilience in ageing. Even those participants troubled by long term conditions in their day-to-day lives, such as Les and Jeane, demonstrated an ability to overcome their physical problems at least in part, whilst they danced.

12.5.3 Social Resilience in Older Adult Ballroom Dancers

Whilst not objectively measured, there was considerable discussion amongst participants in the qualitative interviews regarding the influence ballroom dancing had on their social resilience. Wiles et al. (2012) discuss social resilience to comprise of one's ability to maintain supportive social connections and external resources; such as attending social clubs, participating in activities outside of the home and one's social support from family, friends and neighbours. Recognising the impact that a change in life circumstances had had on their social networks, such as retirement or bereavement, participants frequently discussed the role that their ballroom dancing classes had taken in providing them with new social avenues for managing these changes in life circumstances. Van Kessel's (2013, p.126) systematic review of resilience in older adults noted the importance of social inclusion or social isolation and one's ability to maintain social relationships as being, "critical to the ability to recover from adversity". Wiles et al (2012) discuss the importance of consideration of different resilience factors and constraints in one area being balanced by other stronger areas. This might be demonstrated by couples such as Brenda and Robert who faced greater constraints on their physical health, but were able to draw strength from their social relationships. Whilst their dancing was limited, their involvement in the social

aspect of the dancing was a strong motivator and their ability to get out and be involved in social activities (to whatever level) provided one element of resilience.

As presented in chapter 10 there was considerable discussion of the role that ballroom dancing played in preventing social isolation, particularly for those participants such as Les, Kathleen, Florence and Isabel who were divorced or widowed and retired and lived alone. For others whose social networks were perhaps limited by illness, the dancing classes also provided an element of a support network when waiting for the class to start, rests between dances or the social refreshments afterwards allowed participants time to compare ailments and how their conditions were managed. Danoff-Burg and Revenson (2005 cited by Davydov et al, 2010) discovered lower psychological distress and less pain in patients with rheumatoid arthritis who found 'interpersonal benefits' from the condition and this might have also been a contributing mechanism for participants in this study, that many were troubled by pain or illness and the social aspect of the dancing classes provided an arena to share their stories, albeit this might become problematic in separating the benefits of the dancing itself, to the benefits of socialising (Thomas and Cooper, 2002). Participants would also encourage each other to participate, as noted by Brenda who had recalled receiving communications from group members asking about her well-being when she was unable to attend due to ill-health, dancing was a mechanism for these older adults to form social connections.

Perhaps the only 'negative' aspect of ballroom dancing identified was that on the whole, participants preferred to attend with a partner. Loss of one's partner would often mean that individuals did not attend for fear of being alone or because they thought it was inappropriate to dance with anyone other than one's life partner. This was the sense that both widowed and married women conveyed during interviews, such as Isabel who had stated "you haven't a partner, so you don't go" (2/6/157). Cooper and Thomas (2002) also noted the dilemma that would face individuals upon the death of their dance partner. However, dancing provided a sense of continuity, stability and engagement with the familiar and it was found that most class members would return to dancing following bereavement for these reasons, thus indicating that the nature of ballroom dancing assisted in helping individuals demonstrate resilience following bereavement. Phoenix and Orr (2013) found a similar loss of interest in exercise with the loss of one's exercise partner. With ballroom dancing in particular, this is likely to have been due to the social and cultural attitudes towards dancing in their youth. The participants' social roles were fixed by the historical point in time in which they lived their lives; dance halls were often a space for 'courting', many of the participants had met partners at or attended dances with partners and because ballroom dance has historically been plagued by scandal and disrepute.

Participants also thrived on the often positive and empowering relationship with their dance teachers. Eric and Irene suggested that their participation in this study was due to their desire to assist with providing evidence to support the work of their dance teachers in the community.

A 'connectedness' between older adults and their community was also highlighted by van Kessel (2013) as being a factor contributing to resilience in older adults. This connectedness was demonstrated by participants such as Patrick and Sheila who felt a strong sense of providing their local community a service, in the form of the monthly social tea dances that they ran. Eric and Irene would feel compelled to perform at dance demonstrations as part of community events such as fayres to try and encourage others to become involved. An important factor for resilience suggested by Davydov et al. (2010), in addition to social support, is that of having role models. Participants such as Patrick and Sheila, Eric and Irene and Les and Pamela who had both been invited to become peer dance mentors for classes perhaps provided themselves with an element of resilience, and being a role model also provided others with the social support and encouragement. Additionally, one's ability to display, "positive emotions including optimism and humour" (Davydov et al., 2010) contribute to mental resilience. Sheila had noted that she and her dancing group all laughed *together*, even when they were having trouble learning dances they had found humour in adversity and there was a consensus that the classes provided an avenue for laughter and fun, and indeed the sharing of common difficulties and adversities.

12.5.4 **Summary: The Role of Ballroom Dancing for Resilience in Older Adults**

The findings of this study suggest mechanisms by which ballroom dancing can enhance resilience for older adults and this addresses research question 1. It is important to recognise that a balance of these different factors can contribute to one's overall well-being. Perhaps the consideration of resilience as the ability to demonstrate a balance between resistance and acceptance is also of use when considering ballroom dancing. As presented in section 8.4 ballroom dancing presented individuals with an ability to resist the age of decline by involvement in physical and social activities, yet it also provided an avenue for acceptance of their ageing bodies, the limitations that ageing had caused yet a concurrent ability to adapt to these changes, perhaps in the form of adapting dance routines or taking breaks during the classes to rest. Similar to the findings of Cooper and Thomas (2002), dancers danced in spite of ailments and they believed it a beneficial activity to keep their bodies *and* minds working. The findings of this study also concur with the six domains of resilience as presented by Ryff (1985 cited by Wiles et al., 2012, p.417) of, "positive

interactions with others, a sense of purpose, autonomy, self-acceptance, personal growth and environmental fit", which can all be accounted for within the qualitative findings.

Whilst some elements of one's resilience will be due to individual internal factors, such as hardiness (Gattuso, 2003) and optimism (Wiles et al., 2012) the results of this study strongly suggest social, group-based interactions with one's community should not be under-estimated in their importance for enhancing resilience. In addition and an area requiring further research, some 'environmental' resilience factors were discussed, such as Kathleen's concerns about access to the dance facilities.

It is not suggested that ballroom dancing is the answer to all one's potential 'ills' in ageing but that the positive aspects of its physical, well-being and social mechanisms interact to enhance one's resilience and thus it can be promoted as a positive activity by health promotion professionals to assist with ageing well.

12.6 Ballroom Dancing: Implications for Healthcare Practice and Policy

Whilst this study has demonstrated older adults experience pleasure from engagement in ballroom dancing and other authors similarly highlight the provision of pleasure that physical activity can provide for older adults (Cabrita et al., 2017; Phoenix and Orr, 2014), Mikkelsen (2017) discusses the possible conflict promoting pleasure might present to healthcare professionals. Highlighting the nature of Western healthcare paradigm, Mikkelsen's (2017) work focusses on the Danish national healthcare system, neoliberalism and the 'politics of potentiality' (p.647). Denmark has a welfare state in line with that of the United Kingdom (UK); therefore the relevance of Mikkelsen's work could be considered to extend to UK healthcare systems too where health interventions are framed in a similar manner. Mikkelsen (2017) presents findings of ethnographic work with older men in Denmark who are resisting what they consider to be a pressure, to be engaged in physical activity and social life in older adulthood.

The economic burden of the ageing population worldwide has led to a sense of a 'moral obligation' for older adults to maintain or improve their health, remain physically active and socially involved and health promotion policy is based upon such obligations (Cabrita et al, 2017; Phoenix and Orr, 2013). In addition, a central role of the present day healthcare professional working with older adults is to promote health, encourage both the pursuit of pleasure and individuals to realise their potential. The Chartered Society of Physiotherapy in the UK states that physiotherapists help to 'encourage development' of individuals and help

people to remain independent for as long as possible (2013). Mikkelsen's (2017) work highlights the conversations he had with healthcare workers including physiotherapists, nurses and care workers. All saw it as their professional 'duty' to enable older adults to realise their potential through health and pleasure and a holistic approach to care and if they did not attempt to encourage individuals, they would consider themselves negligent. One physiotherapist commented:

[I]t is sometimes difficult. Because, you see, not all the elderly people are fully aware of why they suffer from this or that. Other people are just stuck in bad routines. They have become passive. And in those cases, my job would be to identify their potential and to motivate them to *realise* this potential.

(Mikkelsen, 2017, p.649)

However, whilst some older adults actively seek forms of pleasure and others might be cajoled into doing so by partners as seen in this study or healthcare professionals (or as Mikkelsen (2017) suggests 'tricked' into) some older adults may wish to remain inactive and lead somewhat solitary lives. The promotion of self-development and physical activity through pleasure for some older adults might not be seen as a 'pleasure' but perhaps also causes anxiety and a sense of feeling 'pushed' into or exhorted to undertake and perform acts they might not necessarily freely chose. One of Mikkelsen's (2017, p.647) participants states, "Now I feel I am being pushed from all sides. Always forward! I thought that, finally, I had reached an age where I no longer had to be improved and upgraded".

This should be borne in mind for healthcare professionals and highlights the importance of tailoring programmes of physical activity or social activities to an individual's interests. Ballroom dancing might not be a physical activity that everyone would wish to attend and there might be complex social and cultural reasons behind such a decision, but this research does highlight that those who were perhaps cajoled by partners into attending, particularly men, *did* find great pleasure in the activity and therefore it can be promoted as such.

Cabrita et al. (2017) also suggest the promotion of physical activity *by proxy*, for example encouraging someone to go to an exhibition rather than for a walk, for going to an exhibition would still involve walking. The participants in this study sometimes attended social tea dances, even if by Brenda's own admission, she and her husband just went there for the social side because their physical conditions limited participation, the couple were still getting up, going out and being involved in society. Similarly Sheila and Patrick holding their monthly tea dances in the community hall encouraged people to leave their homes,

move and socialise, even if the primary reason was not to exercise or if attendees did not dance when there, they were, at least, moving outside.

Of course, not everyone has the capabilities to 'age well', and as Mikkelsen (2017) highlights, nor may they wish to. Whilst health professionals working with older adults ought to be cautious not to push or pressurise individuals into activities, an important aspect of their role should be to encourage the pursuit of 'pleasure' through physical activity as research has shown. One's involvement with physical activity is often complex relating to such factors as intrinsic motivation, access, financial, social and physical issues and to simply suggest promoting pleasure will engage all would be naive. Supported by the findings of this study, Phoenix and Orr (2014) argue that pleasure be brought to the forefront of health policy making for older adults, which Lenneis and Pfister (2015) and Mikkelsen (2017) note is common practice at this time in the promotion of physical activity in Denmark.

12.7 Methodological Strengths and Limitations of the Study

12.7.1 Methodological Limitations

A larger sample size could be proposed based upon power calculations using estimates derived from the findings of this study, and further research would be worth pursuing in a study with adequate power. However, the sample size and total of 41 interviews did provide considerable qualitative data as discussed in section 12.7.2 below.

The clinical outcome measures chosen within this study had previously been validated and were suggested by AGILE (*n.d.*), the specialist interest group for Chartered Physiotherapists working with older adults, to be suitable for the age group included in this study and, more specifically, for community-dwelling older adults (as compared to those hospitalised or in domiciliary care). However the functional reach test, the four square step test, the timed up-and-go test and the POAM (Tinetti's) test failed to demonstrate any measurable changes over the 12-month period. It appears the tests were not sufficiently sensitive to demonstrate change in this population. The participants generally scored well enough to be categorised into the groups indicating low levels of falls risk at baseline and throughout the 12 months of data collection. This raises questions about the use of outcome measures in clinical practice, their sensitivity and the cost-effectiveness of their implementation.

Whilst the physical outcome measures employed in this study failed to demonstrate any significant change, the BBS gave an indication of some significant differences between the ballroom dancing groups and normative data. However, there is a paucity of evidence for

the normative data provided for the BBS for the age of this sample as well as other age groups. Therefore, it would be of use to perform the tests on a control group from a sample of older adults in the general population, from which to then compare future findings to observe whether any improvements in the dancing group could actually be ascribed to dancing and not to concurrent lifestyle changes or other unknown variables. However, the BBS also presented questionable normative data ranges. Whilst normative ranges are presented for the Falls Risk Test, there is a paucity of evidence in this area and that which is available provides little detail on how the data was derived. Few studies are cited by the manufacturer and those that the normative data are based upon have been carried out on small sample sizes and in participants with injuries (for example Akbari et al., 2006) or not from a comparable age range (Aydoğ et al., 2006; Greve et al., 2007; Schmitz and Arnold, 1998). As the BBS can also be set to different levels of difficulty, this would suggest that normative ranges should be adapted for each level increment, yet there appears not to be research suggesting normative values for levels or age groups.

12.7.2 Strengths of the Study

This study was conducted over a 12-month period. Previous research indicates that a data collection period of one year should be sufficient to demonstrate physiological changes in balance outcome measures. For example, physiological adaptations to exercise such as muscles strength should begin to occur within 12-weeks of a strength training programme (Frontera et al., 1988, cited by Hardman and Stensel, 2003) hence this 12-month study provided sufficient time for adaptations to occur. The primary use of qualitative methods augmented by a quantitative element helped to provide an understanding of the physical effects of ballroom dancing for older adults, via interviews and using outcome measures. Physical effects were monitored with the use of outcome measures and as discussed above, these were perhaps not sufficiently sensitive for this client population. However, the qualitative inquiry provided rich data to explore the experience of physical activity, highlighting the pleasures experienced through ballroom dancing and the characteristics of the dance class that were important to participants. Participants were interviewed 3 times and 23 of the 26 participants were retained at 12-months, which is a strength of this study. The qualitative data gained on older adults' experiences of ballroom dancing can assist health professionals with the planning of dancing classes.

In addition, the longitudinal length of the study allowed for exploration of annual seasonal changes in physical activity behaviours. This study highlighted concerns with activities external to the home during colder weather and periods during the summer months where there was some disruption to one's physical activity routines due to holidays perhaps caring for grandchildren during the school holidays. Richard and Rachel, for example, were a

couple who often took holidays out of the country, and their lack of attendance for an extended period was likely to have an impact upon Richard's desire to return for fear of feeling behind, when he already lacked confidence in his dancing abilities. Several of the participants mentioned their anxieties about walking outside increased when there were periods of ice and snow, they tended to stay indoors. This highlighted the importance of accessibility of the dance venue for them. This research also adds to the body of knowledge on physical environment factors that are associated with one's uptake or cessation of physical activity.

Participant retention was a strength of this study with 88% of the participants completing the 12-month data collection period (23 of the 26 participants at baseline). Of the 23 participants who completed, 74% remained dancing on a weekly basis, with some having increased their regular dance classes each week. This good adherence rate for those who continued to dance was in spite of health problems and life events over the course of the year, demonstrating the strength of ballroom dancing's allure.

The qualitative inquiry in this study provided a considerable set of data from the 41 interviews conducted and it is suggested that this appeared to provide a comprehensive insight into the reasons why older adults participate in ballroom dancing, what the important factors that keep them ballroom dancing are and how they feel ballroom dancing influences their physical, mental and social health. Whilst difficult to claim 'theoretical saturation' (Charmaz, 2014), since the sampling strategy was not designed in such a manner to do so, the questions regarding one's reasons for attending ballroom dancing classes and subsequent adherence appeared to have reached a point from the answers provided by participants whereby a comprehensive understanding was provided by participants. However it might be that since the number of participants who 'dropped out' of ballroom dancing was smaller, further insight could be gained in future research into the reasons why participants ceased ballroom dancing.

12.8 Reflexive Account

As a recreational dancer in my adult years, (salsa, ballroom and ceilidh) I was drawn to dance by the pleasures it provided, particularly the social benefits, as demonstrated by this cohort. I has started salsa and ceilidh dancing when I moved to two different cities for work, then postgraduate study, in an attempt to build a new social network; again, in common with the participants in this study who had undergone the life change of retirement. As a physiotherapist I was aware of the benefits of physical activity for older adults, to slow the aged-related decline in mobility and physical capabilities and I was aware of the physical social and well-being benefits of dance for myself. This meant care had to be taken not to

enter this study with 'rose-tinted' glasses. Ballroom dancing might not be beneficial for everyone and I would need to take care to present a balanced argument and not inadvertently ignore less positive aspects that were discussed.

This research process took considerably longer than I had hoped due to periods of suspension for maternity leave and unforeseeable personal circumstances. Alongside this I had several changes in the supervision team, due to circumstances beyond my control. Each change brought with it inevitable change in specialities, new suggestions and new pressures. It was not a lack of motivation that prevented me from progressing but at times this led to a decline in my confidence and confusion in my path, with what felt like being 'pulled' into directions away from my area of clinical interest by the influences of some of the directors of study. This whilst I was trying to manage a full-time job and two young children. Its completion has been a challenge on many levels.

When I reflect upon what I have learnt during this process, there is without question an immense amount in terms of knowledge in both a theoretical and practical sense (please see Appendix 14 for training and timeline information). I completed a post-graduate certificate in narrative inquiry during the early stages of the PhD, an area I knew nothing about. This introduced philosophical standpoints I had no knowledge of previously and I very much enjoyed the challenge of this new learning. In addition, the module was taught as a distance learning module, which presented a new way of learning and had its own challenges when I was learning something very new, in amongst a group of other students who had studied social or psychological sciences, some to PhD level themselves.

As a (recreational) ballroom dancer, I attended and participated in two classes during the days that recruitment occurred. During this time I waited with the dancers, learnt with them, talked to them, danced with and amongst them and observed. Had circumstances, time and resources allowed it would have been of great interest to me as a dancer and a physiotherapist, a profession expert in movement and its analysis, to have included an ethnographic element to this study to involve participant observation and my own involvement as a dancer as a form of data. This is something I would like to pursue in future studies. Thomas and Cooper (2002) provide an interesting discussion on their roles as dancer-researchers and how this allowed them to be considered 'insiders' rather than 'outsiders' after a period of time. Whilst this reduces one's potential objectivity in research, it is noted, "the ages, race, gender and personality of the researchers involved in the project build into and colour the research" (Thomas and Cooper, 2002, p.60).

I have been reminded that I miss the clinical side of my work as a physiotherapist. Being quiet in nature it is not in my nature to be particularly assertive or confident, yet there were times when I had to become so during this process. Not least with having to present the strengths of this study and its novel contribution to the body of research.

Whilst there have been undeniable challenges in managing a full time job, home-life and studies I have not felt that I did not want to complete this work nor that I did not wish to do research again, despite the lulls in confidence I have had. On the contrary, I am looking forward to working with colleagues who have expressed an interest in this work and being involved in larger scale studies in the future.

12.9 Chapter Summary: Contribution to the Literature

The primary qualitative methodology chosen augmented by the inclusion of a quantitative data strand employed in this longitudinal study enabled a complementary and unique exploration of how ballroom dancing can influence one's resilience in older adulthood. The outcomes of this study also enabled consideration of the feasibility for larger-scale research into ballroom dancing and health. To this end, it provided a discussion of the factors that are meaningful for older adult ballroom dancers, an exploration of adherence, attrition, functional outcome measures and the feasibility of future research trials of ballroom dancing for health in community-dwelling older adults over the course of one-year.

The findings suggest that ballroom dancing is a socially inclusive, pleasurable physical activity with very good attrition rates amongst community-dwelling older adults. When considering the research objectives and to what extent they have been achieved using the methodologies employed, a concluding summary is presented below, highlighting the unique contributions this study has made to the previous body of research.

Whilst the outcome measures employed for this cohort of older adults did not appear to be sufficiently sensitive to *change* over the course of the 12-month study and it was not a randomised controlled trial so cannot suggest ballroom dancing has been the sole influence on balance and functional activity measures, the findings do suggest that adults who participated in ballroom dancing presented with a low-risk falls risk and higher levels of balance and function than age-matched normative data. These findings suggest that a larger scale, randomised controlled trial would be feasible and that attrition rates to a study over a 12-month period show the potential to be very good.

The strong sense of pleasures ballroom dancing provided participants with appeared to enhance their reported levels of psychological well-being. Whilst a good level of well-being due to ballroom dancing alone might be difficult to assess objectively due to the involvement of other variables, 'healthy' levels of well-being were evident through the positive scores in the CORE-GP test scoring system and emerged through the qualitative data findings. The qualitative data showed a strong theme of one's well-being associated with their involvement in ballroom dancing. Well-being was enhanced via several mechanisms. Due to the pleasures it can provide individuals it enables a sense of distraction and immersion in the dance; which in turn assists individuals to 'forget' their day to day concerns, such as family or health, to assist with one's ability to maintain a sense of well-being. Its social nature as a physical activity provides new social communities and social support networks for older adults, and this is particularly beneficial to those who have undergone life changes, such as the loss of social networks following retirement, or for those who have lost a life partner. In addition, by virtue of learning a new skill, ballroom dancing classes encouraged older adults to develop skills across the life course, no doubt enhancing the pleasure one gained from mastering the skill of the dance itself.

The novel and original contribution to the literature that emerged from this study and is presented in this thesis is the additional typologies of pleasure identified. Phoenix and Orr (2014) presented 4 typologies of pleasure and physical activity, 3 of which were evident within the practice of ballroom dancing; sensual pleasure, the pleasure of habitual action and the pleasure of immersion. However, the findings of this study suggest there is more complexity to the pleasures of physical activity with regard to ballroom dancing. The 'pleasure of knowledge' and the 'pleasure of community' were considered to be two additional typologies of pleasure evident in older adult ballroom dancers. These two additional pleasures further develop the typologies of pleasure associated with physical activity as suggested by Phoenix and Orr (2014). Figure 11 presented a new model of the pleasures of ballroom dancing for older adults incorporating the work of Phoenix and Orr (2014) and the two additional new typologies and section 12.4 presented further insight into the qualitative findings and participants' quotations illuminating the importance of these 5 typologies.

It is clear that pleasure was a key component drawing participants to continue to dance. The findings suggest the practice of ballroom dancing has the potential to enhance psychological well-being in older adults by its provision of the 5 typologies of pleasure as presented in figure 11.

Through the findings of a comprehensive set of qualitative data, this study was also able to suggest some of the key factors involved in the practice of ballroom dancing and one's adherence to ballroom dancing classes. Figure 10 presents important dance class characteristics, such as the importance of environmental factors (neighbourhood safety, transport routes, parking facilities), financial factors such as the cost of the class and the importance of an empathetic and flexible dancer teacher, particularly for those who were limited physically by long term conditions. In addition to the contribution to the theory of pleasure and activity, the recognition of the important characteristics of successful ballroom dancing classes is a new addition to the current literature.

As has been discussed above, 'resilience' is considered to consist of internal and external factors across one's life course. This might include individuals demonstrating such characteristics as hardiness, self-concept and optimism and maintaining an involvement with activity, social support and using one's life experiences to overcome adversity. The findings presented in this thesis suggest that ballroom dancing is an activity that can be advocated by healthcare professionals and community groups to positively influence resilience in ageing for older adults by nature of its ability to promote pleasures, fun, skill development, help individuals maintain or improve physical function, enhance well-being and assist older adults with forming new social communities and support networks.

Conclusion

Whilst it is well recognised that physical activity can provide considerable health benefits and maintain physical, mental and social health for older adults, there is a paucity of evidence on the specific types of physical activity that can prove beneficial.

Therefore, this research study aimed to explore the influence of ballroom dancing on health and well-being for older, community-dwelling adults over a 12-month period. Specifically, it aimed to assess functional activity in terms of balance and falls risk and well-being and the role of ballroom dancing in resilience in ageing.

It was found that ballroom dancing was enjoyed by older adults across the spectrum of social groups and proved to have very good adherence rates over 12-months. There were several factors associated with the practice of ballroom dancing and the dance class itself that were identified, these being the need for an accessible dance space, cost and timing of classes, the flexibility of the tutor to adapt to individual's health needs and limitations and tailor dances accordingly and that the structure of the class should include a social element. Figure 10 presented important dance class characteristics and these findings will be presented to dance and physical activity leader contacts who assisted with the recruitment of participants for this research.

The study concludes that ballroom dancing can assist with resilience for older adults by means of providing a mechanism for optimising physical function, enhancing well-being through its provision of pleasures and encouraging new social opportunities for older adults. The pleasure of knowledge and the pleasure of community were identified as additional typologies of pleasure to those suggested in the literature by Phoenix and Orr (2014) and a novel model of the pleasures of ballroom dancing for older adults was presented in figure 11. In addition, the assessment of outcome measures for physical function demonstrated that this sample of older adult ballroom dancers were categorised as being at a lower risk of falls when compared to normative data sets and demonstrated 'healthy' levels of well-being. These findings will form recommendations for health promotion practice. Recommendations for further research are also considered below.

Recommendations for Health Promotion Practice

Recommendations for practice based upon this research are that ballroom dancing should be highlighted in health promotion campaigns as an activity that can provide pleasure for older adults as pleasure can enhance engagement with physical activity. Hicks and Conner (2014) discuss the importance of nurses utilising the concept of resilience in health

promotion and that they should incorporate an individual's life experiences, encourage social support mechanisms and involvement in physical activity to, "bolster these protective factors". Participants in this study demonstrated that pleasure in its various complex forms can still be felt by the ageing body, in spite of chronic illness or disease. The pleasure gained from the activity encompasses several aspects; the activity is fun and enjoyable, it builds a sense of community, it encourages development of new skills, provides a sense of worth and an escape from every day worries. It was seen as an activity whereby the enjoyment was so great, it could mask one's pain and the physical aspect of the activity was not seen as something to endure, unlike attending the gym to exercise, for example. Ballroom dancing classes can help form a homogenous group of people in the sense of their life stage, desire to dance, will to learn and interests but it is also an activity enjoyed by older adults from diverse heterogeneous social and cultural backgrounds.

It was found that many of the participants had a positive experience with different forms of dancing during childhood or younger adult years, experiences that they recalled as being pleasurable and had encouraged their choice to participate in ballroom dancing in their older adult years. It is also important for health and education professionals to encourage positive encounters with physical activity across the life course. Negative experiences or a lack of experience with physical activities in earlier years is likely to mean individuals are less likely to return to physical activity later in the life course and this is also an area that requires further research. If one considers Hicks and Conner's (2014) suggestion that activity and social support are important protective factors across the life course for one's resilience ageing, this too has implications for healthcare policy and practice. Policies must begin to address protective factors *across* the life course and maintain these into older age. In addition, the finding that most of the ballroom dancing participants in this study had a positive experience with dance across the life course, or at least one of the dancing pair did, concurs with Phoenix and Orr (2013) who suggest that health professionals should be aware of promoting physical activities that are tailored to one's life histories. The challenge of ballroom dancing might also be promoted as this has been found to be a primary motivator for exercise, for older males in particular (Newson and Kemps, 2007, cited by McKinley et al., 2008).

Whilst such factors as a previous positive experience of dancing might encourage the current generation of older adults to dance, it raises questions about the types of physical activities the next generation of older adults might be involved in. At present exercise classes such as yoga and pilates are popular however, they do not have quite the same social interaction as is found in a ballroom dancing class. Given that people tend to return to activities with which they have had a positive experience throughout the life course, one

might question which activities will provide a combination of physical, well-being and social aspects to the extent that an activity like ballroom dancing does. Irene had expressed her concerns that ballroom dancing might be a dying art, since it was not taught in schools for current younger generations and there are no longer dance halls of the sort that hold ballroom dances for younger people. This was also a concern for dancers in Cooper and Thomas' (2002) study that clubs were closing due to a lack of support, disability or death of dancers, which would lead to its eventual demise as an art-form. The importance of the social aspect of maintaining physical activity in older adults was clearly demonstrated in this study by the pleasure of community theme, therefore health and exercise professionals should aim to incorporate a sense of community and promote social forms of physical activity into their programme planning for older adults.

Recommendations for Further Research

The findings from this study indicate that ballroom dancing is an activity that has a very good retention rate and can contribute to resilient ageing by providing physical, mental and social health benefits.

The attrition rate over one year in this cohort older adult population is less than reported in previous studies on physical activities (9 of the original 26 participants, 35%, had ceased dancing by 12 months) and give cause for the proposition of future larger scale randomised controlled studies as 88% of participants were retained in the study between baseline and 12 months (23 of 26 participants). Pinniger et al. (2012) note attrition figures of up to 76% attrition within a year in physical activities. The feasibility element of this study examined ballroom dancing as a means to keep older adults physically active for long-term periods and to consider its potential impact upon physical health and well-being measures. As a feasibility study, derivation of a sample size or power calculations were not required but the findings can help to indicate the appropriateness of outcome measures and interventions for future studies (Haxby Abbott, 2014).

One must consider with randomisation, often willing participants will be part of a dancing couple and it would be unlikely that partners would wish to be separated during the randomisation process, however, there could be randomisation at the 'couple' level. In addition there is the dilemma that in an older age group, having a physically inactive control group presents an ethical conflict, especially given the results of this study and others, which indicate the health benefits of physical activity and its importance in the maintenance of functional autonomy when ageing.

There is some suggestion, both statistically significant and potentially clinically important, that individuals who participate in ballroom dancing demonstrate better balance than the general population and that female ballroom dancers display better balance than males (please refer to Chapter 6). Based upon the feasibility findings from this research, sample size calculations could be performed to give an indicative size of the sample required for future studies, based on estimates of effect (changes in balance) determined from the current investigation, which would be sufficiently powered to demonstrate a significant change in health outcome measures when ballroom dancing is employed as a physical activity intervention.

Due to time and financial constraints within this study, it was not possible to perform a randomised controlled trial in this study. However, further recommendations can be drawn from the feasibility findings of this study. A control group was not employed in this instance for the aforementioned reasons; however, normative data was available for the clinical outcome measures used within this study and these measures were chosen due to their proposed suitability for individuals such as those in this population. Such data is used as the benchmark for scoring individuals in clinical practice and should therefore provide an indication of the possible findings compared to the general population and, hence, a control group. The physical function outcome measures employed in this study were not sufficiently sensitive to change in this cohort of active older adults. Therefore, alternative methods for assessing physical health could be employed. It would also be useful to consider other aspects of health such as cardiovascular measures for improved levels of exercise tolerance or using more sophisticated laboratory based physical function tests as the clinical outcome measures were not sufficiently sensitive. Previous research has highlighted that one's physical activity self-efficacy is a predictor for exercise adherence and participation (Troost et al, 2002) and in hindsight it would have been useful to include a self-efficacy measure at baseline, given that those who ceased dancing, Richard and Rod in particular, appeared to have some troubles learning the steps and were of a character where they liked to be good at what they did. Richard was happier with his performance in the gym; his partner Rachel had said, "He won't get up and do it because he's embarrassed" (1/10/302) and Rod had noted, "Peer pressure to perform" and, "I wouldn't want to be the worst. So I am conscious of that, so you see, maybe it's a male thing, I don't know" (1/23/662).

Cabrita et al. (2017) trialled the use of mobile technology with older adults to assess pleasure during activities of daily living and physical activity on a smart phone every 1-2 hours. They found that leisure activities performed outdoors and with company significantly predicted daily levels of pleasure. Their study aimed to begin to look at tailored forms of physical activity and it is proposed the use of similar mobile technology would be useful to

record real-time experiences of pleasure for older adult ballroom dancers perhaps during or immediately after a ballroom dancing class.

Another useful form of technology to involve in ballroom dancing research would be that of movement analysis equipment to potentially look at improvements in mobility over time in older adult ballroom dancers to provide objective measurements.

Whilst this study considered a qualitative understanding of how ballroom dancing contributed to 'resilience' in older adults, it did not consider the use of resilience scales such as those highlighted by Wiles et al. (2012) and van Kessel (2013). Further consideration of these quantitative measures for inclusion in future studies would complement the qualitative findings in this study. It is also important that health professionals and health policy makers begin to consider the factors Hicks and Conner (2014) suggest as being protective factors across the life course for resilience (life experience, activity and social support) for improving the quality of life for adults entering older age and beyond.

Appendices

Appendix 1 Ballroom Dancing Literature Summaries

Table A1 Ballroom Dancing Systematic/ Literature Review Chart

Author(s) Year	Method and Aim	Databases	Search Terms	Inclusion	Exclusion	Total for review	Data extraction/tool	Conditions	Results	Discussion Interpretation
Keogh, J.W.L., Kilding, A., Pidgeon, P., Ashley, L & Gillis, D. (2009)	Review on the physical benefits of dance for older adults.	Medline, (PubMed), CINAHL, SportDiscus, ProQuest 5000 International, Google Scholar. Reference list checks.	Dance, Dancing, Older Adults, Elder and their derivatives.	Published in peer reviewed journals. Groups of healthy older adults >60. Not diagnosed with medical conditions (e.g. Parkinson's). Compare dancers with non dancers, dance intervention of at least 8 weeks.	Known long term conditions.	15 training studies (9 level 2 small RCTs, 6 level 3= non-randomised, concurrent, cohort comparisons/4= non-randomised intervention v controls. 3 cross-sectional studies all level 4. 6 looked at ballroom/social dancing.	Critical evaluation scales of Megens and Harris (1998) and Sackett (1989).	None.	Ballroom, increase in muscle endurance, grip strength, static balance, normal gait speed, postural stability index, flexibility, dynamic balance.	Questionable outcome measures, largely female populations, small number of studies and a variety of dances performed, ceiling effects from well-functioning adults.
Kiepe, M-S, Stöckigt, B., Keil, T. (2012)	Systematic review on the effects of dance therapy and ballroom dances on physical and mental illnesses.	Medline, PscholInfo, hand search of reference lists and key journals in art therapies	Not specified.	RCTs, Dance therapy and ballroom dance, Jan 1995- March 2011, patients >14 years of age with physical or mental illness	Comparing patients with different diseases in one study. Schizophrenia as it was identified as dance was considered a therapeutic in a recent Cochrane review.	13 publications from 11 RCTs. 4 with a focus on ballroom dancing.	3 researchers independently assessed full text articles and discussed disagreements for resolution.	Parkinson's Disease n=2, depression n=1, stable chronic heart failure= 1.	Improvements in motor performance, balance, freezing of gait, 6-minute walk test, QOL, mobility, communication and Parkinson's Disease Questionnaire-39 total. Improvement in mental health outcomes measures.	Small sample size. Dance groups older and sicker. Longer history of PD. No intention to treat analysis.

Fernandez-Arguelles, E.L., Rodriguez-Mansilla, J., Antunez, L.E., Garrido-Ardila, E.M. & Munoz, R.P. (2015)	Systematic review therapeutic effects of dancing as a physical modality on balance, flexibility, gait and muscles strength (falls risk factors)	Pubmed, Cochrane Library Plus, PEDro, Science Direct, Dialnet, Academic Search Complete	Dance, older adults, dance therapy, elderly, balance, gait, motor skills	Studies in English and Spanish. Published from Jan 2000 to Jan 2013. Analysed effects of dance in adults 60+ years with no disabling disease. Included balance, gait, risk of falls, strength, functionality, flexibility and quality of life variables. RCTs and non-RCTs.	Studies that did not quantify effect, participants with cognitive deficit and/or mental or neurological (physical or psychological) condition.	7 articles, 2 on ballroom.	2 independent reviewers analysed articles found and met to resolve disagreements. PEDro scale used.	One health adults, other unclear.	Improved timed up and go and sit and reach. Increased stride length. Improvements in balance.	Lack of studies. Heterogeneous assessment tools. None of the ballroom studies used a methodological quality scale. Some studies dance was not the only activity.
Hwang, P.-W. N. & Braun, K.L. (2015).	Systematic review of dance interventions to improve older adults' health.	Pubmed.	Dance, aged, older adults. Dance therapy.	Evaluate the benefits of dance on physical health of older adults without dance experience. Quantitative studies. Peer-reviewed. In English.		18 articles from 2004-2013. 6 used ballroom dancing.	Evaluated using Sackett and Megens and Harris.	1 study-visual impairment. Others none.	Positive changes in muscles strength, balance and cognition.	Wide range of dance 'dosage'. Lack of reporting attrition. Lack of demographic balance, inconsistent outcome measures and lack of progress evaluations.
Rudolph, I., Schmidt, T., Wozniak, T., Kubin, T., Ruetters, D., Huebner (2018)	Systematic review of ballroom dancing as a physical activity for patients with cancer.	Medline. Cochrane library.	Dance Therapy, Neoplasm.	All types of clinical studies and systematic reviews. Adults >18. cancer diagnosis. Training during active cancer treatment of afterwards. In English, German or French.	Primary prevention and psychotherapeutic methods with dance movements.	2 systematic reviews and 8 publications reporting on 7 studies. Only 1 study looked at ballroom dancing (Pisu et al, 2017). Others were more DMT.	Articles meeting inclusion criteria were read by the same authors as the full paper and evidence extracted based upon planning for a dance class.	Cancer.	Improvements in physical activity, function, QOL, vitality, social function, mental health, some improvement in physical conditioning and emotional subscales.	Recruitment difficulties, imbalance between intervention and control group, too much pressure to practice each week (x5).

Figure A2 Ballroom Dancing Qualitative Literature Chart

Author(s) Year Location	Method and Aim	Recruitment of participants	Total number of participants	Age of participants (years)	Method	Findings/ Themes	Discussion Interpretation
Palo-Bengtsson, Winbald, Ekman (1998) Sweden	Assessment of intellectual, emotional and motor functions in people with dementia when social dancing. Qualitative content analysis.	Participants chosen after consultation with carers. 10 known to like dancing were included. Consent gained from relatives. 6 included in final study based upon videotape analysis. Unclear why 4 excluded.	6 adults residing in a nursing home. 2 men, 4 women with dementia.	76-88 years old	Observation of ballroom dancing lessons. Participants were video-taped during 4 dancing sessions in one nursing home. Dances included Waltz, foxtrot, tango. Danced with carers. Qualitative content analysis of dancing session videos based on Gottfries, Bråne and Steen rating scale (GBS), which is divided into motor, intellectual and emotional functions and dementia symptoms. GBS measured before dancing and when watching video-taped dance sessions.	Motor function- physical activity and spontaneous activity good in dancing. Intellectual function- demonstration of orientation in space, timing, personal circumstance, recent memory, distant memory, wakefulness, concentration, change in tempo, no sign of distractability. Emotional- showed emotion- e.g. joy, happiness, smiled, laughed. Different symptoms- one or two participants signs of confusion, 2 participants irritable, anxiety, reduced mood, restlessness.	For older adults with dementia-retained abilities were prominent in dancing. Social dancing supportive, had meaning, supports positive feelings, communication and behaviour. Participants able to move freely, increased physical participation, supported spontaneous activity, supports personal and cultural identity. Function of reminiscence, helped expression, motivated to dance.
Thomas and Cooper (2002) UK	One year qualitative research aiming to assess meanings of social dance for older adults. Paper written half way through study (7-month point).	Older adults who participate in dance events in two areas 1 inner-city borough and a suburban area. Dance events sourced via internet, public databases, councils, community groups and projects.	7 month point, 25 in depth interviews included.	Around the age of 60 and above'. Participants aged from 60-90	Ethnography. Participant observation and semi-structured and unstructured interviews. Participants danced e.g. modern sequence, ballroom, tea dances, line dancing and others.	Key themes- dancing and ageing- keeping body and brain active, dancing and community spirit- sociality of dance, relation between music and dance.	A 'community' was constructed from dancing. Strong sense of community spirit evident. Concerns about social dancing being a dying art; what will younger people now do when they are older?

Cooper and Thomas (2002) UK	One year qualitative research aiming to assess meanings of social dance for older adults. Paper written half way through study (7-month point).	Older adults who participate in dance events in two areas 1 inner-city borough and a suburban area. Dance events sourced via internet, public databases, councils, community groups and projects.	One year qualitative study. 31 interviews.	Around the age of 60 and above'. Participants aged from 60-90	Ethnography. Participant observation and semi-structured and unstructured interviews. Participants danced e.g. modern sequence, ballroom, tea dances, line dancing and others.	Continuity within change, enter a second 'teenagerhood', communitas, becoming visible, sense of worth and achievement, joy of a dancing body.	Social dancing provides opportunity for physical exercise and fitness, is a positive experience in contrast to findings on the experience of ageing in general which focuses on loss and negativity. Dance is meaningful and provides a sense of community. Creates 'subcultural capital'
Lima and Vieira (2007) Brazil.	Dance action research project looking at effect of dance as a social 'therapy' to enhance QOL.	Older person's club members. 54 women and 6 men initially recruited.	60 older adults	Aged above 60 years.	Action Research-phenomenological hermeneutics. Participant observation and questionnaires. One year duration. One hour dance classes twice a week.	BD is fun; health benefits; good dancing memories; cultural connections; opportunities for socialising. Benefits flexibility, balance and co-ordination. Transported into a world of happiness. Music. Dressing for dance. High self esteem.	BD creates a culture of inclusion. Empowering bodies and movements. High level of attendance reflects the enthusiasm for the dance.
Stevens-Ratchford, R.G. (2016), USA.	Qualitative exploration of ballroom dancing and successful ageing.	Purposive sampling. Independently living in the community. Ballroom dancer for 10+ years. Current dancer. Able to be interviewed.	20 older adults, 12 females and 8 males.	60-84 years old.	Interviews, observational and demographic data. Occupational and Successful Aging (OSA, Stevens-Ratchford, 2008) interview guide modified for use with dancers. Successful aging demographic questionnaire, Long standing occupational measure, successful aging profile. Satisfaction with life and QOL scales.	Ballroom dancing was a meaningful occupation. Identified themselves as dancers. It was a very important activity to them. Themes identified: ballroom dance as serious leisure; links to successful aging and well-being; the affinity: we love to dance!	Ballroom was a serious leisure for participants. It was part of a lifestyle that reflected successful ageing. Identified as dancers. Time was devoted to improving their skills. Social aspect of ballroom valued. Sample lacked diversity as it was highly educated. Possible observer effect.

Rodio, A.M. & Holmes, A. (2017). USA.	Qualitative- semi-structured interviews.	Unclear how or why the particular assisted living facility was chosen.	6 residents participated in the dancing.	Not reported.	Semi-structured interviews pre-dance, during the dance and 2 weeks post dance. Some observation.	Not structured into a thematic analysis. Positive psycho-social impacts discussed, recall of dancing in earlier life, dance was 'stimulating and good for everyone', positive impact of observing others dance too.	Initially authors wanted to do a structured survey but inappropriate for the sample group. Used interviews instead. During and post-dance interviews provided richer data than pre-dance. Residents engaged more with each other during and post-dance. Power of procedural memory. Reminiscence.
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Table A3 Ballroom Dancing Quantitative Literature Chart

Author(s) Year Location	Method and Aim	Recruitment of participants	Total number of participants	Age of participants (years)	Statistics	Intervention
Haboush et al (2005) USA	Pilot study to test if ballroom dancing had a positive effect on geriatric depression. RCT.	Recruited via local newspaper adverts, information flyers in residential complexes and presentations made to senior citizens' centres.	25 community dwelling depressed older adults recruited. 67% female. 33% male. 5 withdrew, 20 completed the programme.	60 years +. Mean age 69.38 years (SD = 5.43)	Repeated measures univariate ANOVA, Cohen's classification for effect sizes. Linear regressions.	Randomly assigned to 8, individual 45-minute Ballroom dance lessons one per week for 8 weeks, or a wait-list control group (8-week delay). Evaluated at baseline, post intervention and 3 months post intervention.
Vergheze (2006) USA	Cognitive and mobility profile of older social dancers. Cross sectional survey with two group comparison.	Subjects identified from non-disabled community-residing participants from a longitudinal gait and mobility study.	24 older social dancers (OSD) matched to age, gender and education to 84 older non-dancers (OND).	70 and over. Mean age of OSD = 80 years OND = 80.8 years.	Descriptive statistics, Chi-squared test and Fishers test. Independent sample t-test. All tests were two-tailed with an alpha level of 5%.	Activity levels questionnaire documented by researchers.
Hackney, Kantorovich, Levin, Earhart (2007) USA	Effect of tango or exercise class on functional mobility in Parkinson's Disease (PD). Prospective randomised trial.	Subjects recruited via local hospital movement disorders centre and from the surrounding community. Clinically defined PD.	19 subjects with idiopathic PD.	T group= 72.6 ± 2.20 years. E group= 69.6 ± 2.1 years.	two-way repeated measure ANOVAs, student Neuman-Keuls post-hoc tests. Effect size.	Randomly assigned to tango T (n=9) or exercise E (strength/flexibility exercise) groups (n=10) both of 2 one hour sessions a week for a total of 20 sessions within 13 weeks. Assessed at baseline and 13 weeks.

Author(s) Year Location	Outcomes measured	Results	Discussion Interpretation
Haboush et al (2005) USA	Hamilton Rating Scale for Depression HRSD and Geriatric Depression Scale GDS. Symptom Checklist 90, Revised. Hopelessness Scale, Therapeutic Resistance Scale and a measure of self-efficacy designed for the project. Post intervention participant questionnaire.	No statistically significant treatment effect for dance lessons. Enjoyed dance lessons, pleasure in learning, social interaction, exercise, music themes from questionnaires.	Lack of statistical significance due to small sample size and low statistical power? Effect sizes for HRSD and GDS were in the medium size range. Moderately positive effect on lowering depression. BD is an activity older adults would find acceptable compared o seeking help from mental health professionals.
Vergheze (2006) USA	General mental status: Blessed-Information-Memory-Concentration test, Free and Cued Selective Reminding Test, Executive function tests, Geriatric Depression Scale, Quantitative gait evaluations. Balance subtest and chair rise of physical performance battery (PPB), unipedal stance, grip strength.	No significant differences in performance tests of cognitive status. OSD better than OND for PPB and unipedal stance, longer steos and strides and walked faster.	OSD better gait and balance but not strength than OND.
Hackney, Kantorovich, Levin, Earhart (2007) USA	Unified Parkinson's Disease Rating Scale (UPDRS), Berg Balance Scale (BBS), Gait velocity on a 5m walk with and without concurrent mental calculations, Timed up and go test, Freezing of gait questionnaire,	No significant differences between T and E groups at baseline on all measures. Both T and E groups improved on motor subscale 3 of UPDRS. T group but not E group significantly improved on the BBS. Both E and T showed trends towards reduction in freezing. T group trend towards improvement in TUGT but not significant. T and E showed slight non-significant changes in gait velocity.	Improvements in balance and mobility in T group. Fewer gains in E group- many exercises were performed seated.

McKinley et al (2008) Canada	Feasibility study of a 10-week community-based Argentine Tango class on functional balance and confidence in older adults	Recruited through local newspaper adverts, medical clinics and senior centres. Healthy enough to perform an exercise test, dance or walking activities. Have clear comprehension, adequate hearing and vision. Had at least one fall in the last year and an expressed fear of falling.	40 participants recruited. 34 participants included after screening of which 30 agreed to participate and were tested at baseline. 5 were lost before the programme completion. 25 completed the programme.	Over the age of 60 up to 85. Tango group mean age 78.7 years (SD=7.6) and Walking group 74.6 years (SD=8.4). Age range not reported.	Two-way ANOVAs to assess time for outcome measures. Tukey-Kramer adjusted post hoc tests for pre, post and follow-ups.	Tango dance program, 10 weeks (40 hours), 2 x 2 hour classes per week versus a walk programme: scheduled walks of 2 hours x2 per week.
Hackney and Earhart (2009a) USA	To determine the acceptability and feasibility of an intense dance program for older adults with Parkinson's Disease. Uncontrolled, short duration pilot study.	Recruited from a local hospital movement disorders centre and surrounding community with clinically defined PD.	14 participants at baseline, 12 completed, 4 female, 8 males.	Mean age 67.2 years \pm 9.6 years.	Paired t-tests. $p = 0.05$ Bonferroni-Holm method to determine p-value.	Intensive' dance exercise programme of dancing 1.5 hours per day, 5 days per week for 2 weeks.
Hackney and Earhart (2009b) USA	Compare effects of 2 distinct 20 hour partnered dance programmes on movement control; tango, waltz/foxtrot to matched control. RCT, between subject, prospective, repeated measures design.	Recruited from local community advertisement via support groups and community events. Some self-identified, some directly contacted via local movement disorders centre database. Aged 40+. No cognitive impairment.	58 people with idiopathic PD (mild-moderate level) included, 48 analysed due to withdrawals or change in health status. 34 males, 14 females.	Age (years) Tango group= 66.8 \pm 2.4, Waltz/foxtrot 68.2 \pm 1.4, Control 66.5 \pm 2.8.	ANOVAS, Holms-Sidak post-hoc tests, Mann Whitney rank sum tests.	Randomly assigned to Tango n=14, Waltz/Foxtrot n=17 or Control (n=17) groups. Dance partners were 'healthy' young university student volunteers. 1-hour classes, 2 times per week, 20 lessons within 13 weeks.

McKinley et al (2008) Canada	Folstein Mini Mental Status Test, sit to stand (STS) test, Activities-specific Balance Confidence Scale (ABC), normal and fast walk speed test.	25 participants completed the programme. STS and normal walk change scores greater for tango v control group. Significant change in ABC in tango group scores. Some clinical significance; STS and fear of falling some tango group participants moved into lower risk groups.	Both interventions significantly improved and maintained gains for ABC, STS and normal and fast walk tests. Tango group made the biggest gains over the 10 weeks but their baselines were poorer. Exit interviews subjective reporting of increased arm and trunk strength.
Hackney and Earhart (2009a) USA	Assessments one-week prior to initiation of the training sessions and the week following completion of the 10 training sessions. Unified Parkinson's Disease Rating Scale (UPDRS), Berg Balance Scale, 6 minute walk test. Gait assessed with GAITrite walkway.	Significant improvements in the UPDRS and BBS and non-significant improvements in the TUG and 6MWT. Significant decrease in % of the forward gait cycle spent in stance.	Gains in balance, gait and mobility measures evident after a short duration, intensive Argentine tango course. Better attrition rate in this study 14% v traditional balance training- enjoyment and improvement in wellbeing.
Hackney and Earhart (2009b) USA	Video taped assessments of participants. Balance, functional mobility and forward and backwards walking were evaluated pre- and post- intervention. UPDRS motor subscale 3, BBS, TUGT, 6MWT, Freezing of Gait (FOG) questionnaire. Gait assessed along a 5m computerised GAITrite walkway; gait velocity, stride length, single support time. Exit questionnaire regarding experiences and enjoyment of programme.	Tango and waltz/foxtrot group significantly improved v controls on BBS, 6MWT and backward stride length v controls. FOG tango group improved, W/F stayed the same, C worsened. Dancing participants enjoyed the dancing and noted improvements in walking, balance, co-ordination, mood and endurance.	Tango improvements as much or more than Waltz/Foxtrot on several outcomes. Clinically relevant improvements for BBS and 6MWT.

Kattenstroth, Kalish, Kolankowska and Dinse (2011) Germany	To assess performance in 'expert ballroom dancers' versus controls. Controlled prospective trial.	Subjects recruited through advertisements in newspapers, posters, and word-of-mouth.	49 healthy volunteers. Expert dancer (ED) group $n = 11$, 5 women, 6 men) Control group (CG) $n = 38$ (30 women, 8 men).	60-94 years old. Expert dancer group 71.18 ± 1.13 years; Control group 71.66 ± 1.11 years.	Averages, Standard error of the mean, Mann Whitney U test, Cohen's d , chi-squared. P -value of < 0.05 was considered significant.	Expert dance group participated in regular official dance contests and championships. Control group no record of sporting or dancing activities.
Granacher, U., et al (2011). Germany and Switzerland	Investigation into the effect of salsa dancing on static & dynamic postural control and leg extensor power in older adults. RCT.	No mention of recruitment strategy.	28 community dwelling older adults. $N=14$ intervention, $n=14$ control.	63-82 years old. Intervention 71.6 ± 5.3 years old, control, 68.9 ± 4.7 years old.	Group mean values, multivariate ANOVA, Bonferroni adjusted α	Intervention group salsa twice a week for 8 weeks = 18 sessions. 60 minute sessions. Control group- normal physical activity.
Gomes da Silva Borges et al (2012) Brazil	Effect of ballroom dance on functional autonomy and posture balance of institutionalised elderly individuals. RCT.	Older adults from 3 long-term institutions. Randomly assigned. Details unclear on how this occurred.	80 participants included after inclusion/exclusion criteria applied. 5 participants withdrew = Experimental group (EG) $n=39$ and Control Group CG $n=36$.	EG mean- 67.95 ± 1.33 and CG= 67.22 ± 1.28	Descriptive statistics, Shapiro-Wilk test, Levene's test, Student t-test, Wilcoxon test, two-way ANOVA post-hoc Sheffe's test Kruskal-Wallis test, Mann Whitney test with Bonferroni correction, Spearman's correlation coefficient. $P < 0.05$	EG- 50 min ballroom dance program 3 times a week for 8 months. CG- maintained normal Activities of daily living and no physical activity.

Kattenstroth, Kalish, Kolankowska and Dinse (2011) Germany	Mini mental status examination. Everyday Competence Questionnaire (ECQ). Raven's Standard Progressive Matrices. Non-verbal Geriatric Concentration Test (AKT). Multiple Choice Reaction Time Measurements. Romberg Test, Timed up and go test, Standing turn test. Hand-arm fine motor performance. Touch threshold and two-point discrimination threshold.	ED group has a superior performance in most tests. ED group showed higher scores for ECQ, RSPM, AKT, Romberg test with eyes open, less time for standing turn test, significantly shorter timed up and go tests, motor performance tests. Findings preferable for ED group in cognitive, perceptual and motor performance.	Lower ECQ scores for the CG indicate a more sedentary lifestyle. Individual indices of performance across all 5 test domains in the ED showed significantly better performance in reaction time and posture and balance tests only. No significant differences between EG and CG for cognition or hand-arm motor function and both groups showed normal aged related decline.
Granacher, U., et al (2011). Germany and Switzerland	Freiburg questionnaire for everyday and sports activities. Mini mental state examination. Clock-Drawing test. Balance platform, pressure sensitive walkway, force platform jumping power.	Freiburg questionnaire identified participants as physically active. INT programme compliance 92.5%. INT-Tendency of improvements in static postural control. Sig increase in stride velocity, decreased stride time, increased stride length. No sig effect on gait variability or extensor power.	Salsa is a safe, feasible activity for older adults. Promotes static and dynamic postural control, thus a useful intervention for reducing falls risk but not so useful for gait variability and muscle power. Future studies to extend intervention period, Gait pattern of participants was low at baseline, thus already low falls risk.
Gomes da Silva Borges et al (2012) Brazil	Latin American Group for Maturity (GDLAM) protocol for functional autonomy; walking 10m, standing from seat, standing from prone, standing from a chair and moving around a room, putting on and taking off a shirt (gives GDLAM index). Balance measured by a stabilometer and a posture metre platform.	EG obtained a significant improvement in all tests performed after the experiment. GI showed decrease in execution time of tests. Functional autonomy and balance, EG obtained significant differences to CG.	Increased level of functional autonomy and physical balance in institutionalised older adults.

Pinniger, Brown, Thorsteinsson, McKinley (2012) Australia.	Feasibility, acceptability and adherence to a tango programme for older adults with age-related macular degeneration. RCT feasibility study.	Recruited indirectly from clients using two visual impairment organisations. Information distributed by centres to those who met inclusion criteria. Advertisements placed in local newspapers.	22 responded, 5 did not meeting inclusion criteria, 17 female participants remained. Inclusion criteria included having to have feelings of sadness or depression.	65 years of age and over recruited. Mean age 79.4 years.	ANCOVAS and independent sample t-test.	Tango group (n= 8) 1.5 hour, 2 x per week for 4 weeks v Wait-list control group (n=9). 100% attrition.
Belardinelli et al (2014) Italy	Whether waltz dancing improves functional capacity and QOL as exercise training in patients with Chronic Heart Failure, compliance and effect in cardiovascular efficiency. Prospective RCT.	No specific information on how or where subjects were recruited from, only that subjects were 'approached'.	168 participants 'approached' 30 refused to participate and 8 were excluded. 130 remaining participants were randomised. 107 men, 23 women.	Mean age 59 ± 11 years.	One-way ANOVA for variables at baseline and changes between baseline and 8 weeks. Post hoc analysis with Dunnett's test to compare interventions to control group. Regression analysis, univariate analysis. <i>P</i> <0.05	Supervised exercise training group E-cycling & treadmill at 70% VO ₂ 3 x a week for 8 weeks, n=44/ Dance protocol waltz group D- 3 x a week for 8 weeks, n=44- / Control group C, no exercise n=42.
Duncan, R.P. and Earhart, G.M. (2014). USA.	Are the effects of community based dance on Parkinson Disease Severity, Balance and functional mobility reduced with time. 2 year prospective pilot study. RCT.	Recruited through a movement disorders centre. Definite diagnosis of idiopathic PD, over 40 years old, taking levodopa. Exclusion- serious medical conditions, other neuro conditions, history of musculoskeletal problem.	10 older adults with PD randomised to argentine tango= 5 or control =5 groups.	Mean age tango group= 69.6 (6.6) years old, control= 66 (10) years old.	Descriptive statistics, independent sample t-tests, Mann-Whitney U tests. Repeated analysis of variance. Tukey Kramer post-hoc tests.	Tango group= twice weekly, 1 hour community based dance classes for 1 year. Control group no prescribed exercise. Maintain current level of inactivity. Controls matched. Follow up at 12 and 24 months for continuing dancers.

Pinniger, Brown, Thorsteinsson, McKinley (2012) Australia.	Demographics. Visual Function Questionnaire. Self-reported symptoms of depression (geriatric depression scale), self-esteem and satisfaction with life (Rosenberg self-esteem scale) assessed pre and post-test. Participants interviewed (semi-directed questions) post study to identify SWOT analysis and key themes from dance experience.	Tango group significant reduction in depression and significant improvement in satisfaction-with-life and self-esteem at post-test v controls. Reported physical improvements in balance v controls. Timing, intensity and duration of dance was convenient. Main benefits improvement in balance and enjoyment, challenge, satisfaction of achievement. Liked instructors and music. Three major themes emerged: improved balance, social integration and self-esteem.	Tango suggested to be a feasible and positive activity for older adults with macular degeneration. Small numbers as a feasibility study only.
Belardinelli et al (2014) Italy	Blood chemistry, symptom-limited cardiopulmonary exercise test, ultrasound cardiac imaging, brachial artery vasomotor function, quality of life measured by the Minnesota Living with Heart Failure Questionnaire (MHFLQ).	128 of the baseline 130 completed the study. 2 were withdrawn for personal reasons. 15 patients studied for VO ₂ , mean 14.3 mL/(kg.min). Cardiopulmonary exercise tests improved in D v E group, but not significantly. Total cholesterol not improved in intervention groups but high density lipoprotein cholesterol and triglycerides improved in E and D at 8 weeks. QOL scores significantly improved for E and D by 8 weeks.	Waltz dancing improves functional capacity and endothelial dysfunction in patients with class II and III coronary heart failure and results were similar to the exercise group intervention. QOL scores were enhanced in both groups but D group more marked. Peak VO ₂ increased by 19% in D and 15% in E group. Significant changes in ventilation and cardiocirculatory efficiency.
Duncan, R.P. and Earhart, G.M. (2014). USA.	Movement disorder society unified Parkinson Disease Rating Scale sections I-III- performance of activities of dailing living. Non motor symptoms, ADLs, motor symptom severity. Balances assessed using Mini-Balance evaluation systems test, GAITRite used for walking velocity. TUGT, dual task TUGT, 6 minute walk test. Freezing of Gait questionnaire.	10 participants 5 in AT group and 5 in control group completed evaluations at baseline, 12 and 24 months. No difference between groups for baseline MDSUPDRS. MDSUPDRS significantly lower in dancing group at 12 and 24 months. Tango group= better balance scores than control at 12 and 24 months. TUGT performance improved over time, greater distance in 6MWT by 12 months.	Longitudinal study- 2 years. Community based dance classes associated with improvements in motor and non motor symptom severity, ADL and balance. But small sample size. PD is progressive; control roup declined in some outcome measures that dancers did not.

Gomes da Silva Borges et al (2014) Brazil	Influence of BD on balance and falls in institutionalised older adults. RCT.	150 older adults residing in long-stay institutions invited to participate. Inclusion/exclusion criteria applied and 62 remained. 3 subjects withdrawn due to falls. 59 studied.	59 community dwelling older adults.	Mean age dance group= 68±8.33 years, control group 67±7.70 years.	Shapiro-Wilk and Levene's tests, ANOVA with repeated measures. Scheffé's post hoc test. P=0.05	Randomly assigned to dancing group n=30 or control n=29. Ballroom dancing 3 x 50 min sessions each week on alternate days over a 12 week period. Intensity controlled by Borg Perceived Scale of Exertion. Control group regular day to day activities but no physical activity.
Blandy, L.M. et al (2015). Australia.	Argentine tango for Parkinson's Disease- feasibility study.	6 community dwelling older adults with PD. Recruited from PD support groups, movement disorder clinics and the PD association in Australia. Inc-,75 years of age, physically independent, speak English.	6 community dwelling older adults.	Mean age 64 (6.28) years old.	Descriptive medians, interquartile ranges & Wilcoxon matched pair signed-rank tests.	1 hour dance class, 2x per week for 4 weeks. Argentine tango. (Partners able bodied volunteers).
Cepeda, C.C. et al. (2015). Brazil.	Effect of an 8 week ballroom dancing programme on muscle architecture in older adults. RCT.	Unclear how they were recruited. But, independent in ADL, no mobility aids, no recent fractures or surgery, no regular structured physical activity for 6 months prior to the study.	34 healthy older women. Dance group= 19, control= 15.	Dance group 69.1±6.5 years, control group 75.1±7.4 years.	Shapiro-Wilk, two-way ANOVA, one way ANOVA, Scheffe test.	First tests one week prior to the intervention protocol, second tests at the end of the training programme. Randomly assigned to control or dance groups. Ballroom intervention 3 x per week for 8 weeks. 60 minute sessions. Control group keep regular habits and refrain from unusual activities until the end of the trial.

Gomes da Silva Borges et al (2014) Brazil	BMI, height, medical records reviewed for no. of falls in previous 6 months. Interviews performed in the six months before the intervention period and after asked about falls history. Postural stability assessed using a Lizard stabilometric and posturometric platform.	Dance group improved significantly between pre and post tests compared to controls and a significant reduction in the number of falls from the pre to post test in dance group.	Improved postural balance and fewer falls in older patients are BD intervention. BD can improve functional autonomy.
Blandy, L.M. et al (2015). Australia.	Primary outcome was feasibility: recruitment, adherence, attrition, safety and resources. Beck Depression Inventory, Euroqol-5D, VAS at baseline and post intervention.	Attendance 89%. Attrition 17% (1 drop out). Safety-no falls or injuries. Mild arthritic pains at times in 3 participants. Dances needed to be modified a little for safety, e.g. avoiding walking backwards. Non-stat significant improvement in Euroqol score, VAS sig improvement, BDI decreased significantly post intervention.	Argentine tango found to be feasible for this sample with PD. Modifications made to dances for safety reasons by trained tutors. Dosage safe and appropriate. Recruitment was however a challenge. Adherence high and attrition low. Improvements in mental health outcomes, some significant, BDI, VAS post intervention. Larger trials for longer needed.
Cepeda, C.C. et al. (2015). Brazil.	6 minute walk test, Tinetti test, timed up and go test, dual task times up and go test. Ultrasound used to obtain cross sectional images of lower limb muscles. Exercise intensity moderate and controlled by rate of perceived exertion.	Mean attendance 91.3%. Baseline muscle architecture similar between dancers and controls. Controls unchanged pre to post test. Ballroom group training induced significant changes in muscle architecture in the lower limb of the dance group. Dance group improved in all functional tests.	An 8-week low/moderate intensity ballroom dancing programme can promote functional gains and muscular changes promote improvements in muscle performance and function.

Rahal et al (2015) Brazil	To consider whether Tai chi chuan v ballroom dancing promotes better postural balance, gait and postural transfer in active, independent older people. Observational cross-sectional study.	Volunteers selected by geriatrician after careful consideration of inclusion/exclusion criteria. DG- had to be practicing ballroom dancing at least 3 x per week for at least one year. TCC group- TTC at least 3 x per week for at least one year.	76 healthy physically active older adults. 56 female, 20 male.	Mean age of TCC group= 76.8 years, DG=70.3 years.	p<0.05. chi-squared test. Mann Whitney U test.	Tai Chi Chuan TCC group (n=51) or Dance group DG (n=25).
Koch, S.C. et al. (2016). Germany.	to consider the feasibility of a single intervention for assessing changes in psychological health outcomes and aesthetic experience. Single group- pre-post test design.	Recruited through 4 PD groups in Germany.	34 Parkinson's Disease patients. 26 women, 8 men.	Aged 40-82 years (mean- 60.5(11.06)).	t-test for paired samples for pre-post test differences & Bonferroni correction.	Participants attended 1 of 3 tango workshops. Consent and pre-test questionnaires done. Introductory talk by lead author for 30 minutes then tango intervention. Total 90 minutes. Then post-test questionnaire.
Lakes. K.D. et al. (2016). USA	Dancer perceptions of the cognitive, social, emotional and physical benefits of modern styles of partnered dancing- including ballroom. Online survey. Quantitative.	Recruited through a community ballroom dance centre.	225 dancers. 71% female.	51% of the group were 48+ years old.	Descriptive and Mann-Whitney U tests.	Dancers were predominantly involved in swing, ballroom and lindy hop. Online survey distributed via the dance centre.

Rahal et al (2015) Brazil	NeuroCom Balance Master force platform system analysis. Clinical test of sensory interaction on balance (mCTSIB) and unilateral stance test UST for static protocol and Walk Across Test and Sit-to-stand transfer for dynamic balance.	MCTSIB TCC group presented a lower sway velocity eyes open and closed on a firm surface and eyes closed on a foam surface. UST TCC lower sway velocity eyes open, DG lower sway velocity eyes closed. WAT TCC faster walking speed than DG, STS test TCC shorter transfer time sit to stand.	Older adults participating in TCC had better static bilateral postural balance with eyes open or closed compared to DG. DG better unilateral balance with eyes closed. TCC group faster walking speeds, shorter transfer times, postural balance in sit to stand test.
Koch, S.C. et al. (2016). Germany.	Psychological well-being, body self-efficacy, BSE-beauty subscale. Expectancies of the therapy. Therapeutic factors of arts therapies in PD questionnaire.	1 participant did not participate in the dances= 33 analysed. Feasibility evident by 33/34 participating. Observations of increased positive affect. Positive feedback and requests for continued classes. Significant improvements in well-being, body self-efficacy, cognitive aspect of expectancy, affect, beauty aspect of BSE. Increase in aesthetic experience, happiness, pleasure, emotion, unison with partner.	Increase in well-being, body self-efficacy, outcome expectancies- positive effects on psychological outcomes. Tango feasible, appropriate and accepted for PD patients. Limitations, small sample size. No control group. No objective data of PD diagnoses/ severity. Slightly different aspects to the 3 sessions due to external conditions.
Lakes. K.D. et al. (2016). USA	Survey developed for the study assessing dancers' perceptions of the benefits in physical fitness, affect, cognition and social functioning from ballroom dancing.	High percentages of dancers agreed dance improved their physical fitness, physical co-ordination, helped with focussing and paying attention for long periods of time and improved memory for new learning. Dance helped improve affect. Improved social interpersonal skills and self-confidence. Length of dancing correlated with physical, social and cognitive benefits. Frequency correlated with physical benefits.	Length and frequency of dancing increased perceived benefits in physical fitness, cognitive & social functioning, mood, self confidence. Sample was self-selected as only 225 of a possible 4309 email addresses the centre had. Dancing is a lifelong, enjoyable activity.

Merom, D. et al (2016a). Australia.	RCT into social dancing for older adults, falls incidence and physical and cognitive falls risk factors.	Sample from 23 self-care retirement villages in Australia. Inc: villages with an appropriate hall for dancing, at least 60 residents and not already dancing. Inc: resident of village, walk at least 50m, agree to physical and cognitive testing and no cognitive impairment.	Villages randomised by computer programme. 530 participants randomised. 85% women.	Mean age 78 years.	Negative binomial regression for effect of intervention on falls. Post hoc analyses.	Dance group n=279, control group n=251. Twice weekly dance classes (folk/ ballroom dancing), for 12-months, 80 hours in total.
Merom, D. et al (2016b). Australia.	The Dancing Mind randomised controlled trial into the cognitive benefits of social dancing and walking.	Participants recruited in a staggered manner from 5 suburbs around Sydney- purposive. Aged 60 or over, Walk unaided for 50m, GP clearance, excluded if significant cognitive impairment.	158 recruited-133 adults agreed to participate, 18 withdrew before baseline. 115 randomised into dance= 60 or walking= 55 groups.	Mean age 69.5 (6.4) years.	Power calculations= sample of 126. Paired t-tests, Cohen's D effect size.	1 hour of ballroom dancing twice a week for 8 months. Control group had a home walking programme and a pedometer and optional 2x week group walking in a park.
Pisu, M. et al (2016). USA.	Ballroom dancing to improve QOL for cancer survivors and their partners. Pilot RCT. (RHYTHM).	Recruited from a local cancer centre, >19 years old, read and understand English, 3 months post cancer treatment, in a relationship for >12 months, Exercisin < 5 days a week/ 30 mins in previous 6 months, not previously done ballroom, physically able to participate.	31 cancer survivors and their partners. 15 intervention and 16 control group.	Mean age 57.9 years old.	Descriptive statistics, two group t-test, two-group chi-squared test for categorical variables. Paired t-tests, ANCOVA, effect size (Cohen's D).	10 weekly dance lessons and 2 practice parties over 12 weeks v delayed intervention wait list control.

Merom, D. et al (2016a). Australia.	Number of falls during the 12 month period. Time to complete trail making tests, QOL. Physiological performance assessment, short physical performance battery and short-form 12 (mental QOL).	530 randomised, 522 provided falls data, 424(80%) presented at follow-up. Retention at 12-months 60-92% at each village. Retention higher in control (82%) v Intervention (78%). No difference between ballroom dancers and control for falls rates. High attending ballroom dancers had the lowest incidence of falls. No sig diff between groups in fuction tests. Ballroom dancers improved gait speed compared to controls.	Limitations- allocation to dance style logistical not random, insufficient power to detect effect, variation of measurement conditions. Perhaps needs more complex balance tasks that are sensitive to change as social dancing did not reduce falls risk in these groups.
Merom, D. et al (2016b). Australia.	Executive function tests (Trail making tests- processing speed and task shift), response inhibition (stroop colour test), working memory (digit span backwards), immediate and delayed verbal recall- Rey Auditory Learning Test and visuospatial recall by the brief visuospatial memory test.	Retention in dance group 66%, walk group 69%. Groups at baseline balanced in demographics, health and cognitive status. Between group effect for dance more than walking for BVST and delayed recall.	The hypothesis for the potential for dance over walking for cognitive function not supported. Dance group only improved on spatial memory compared to walkers. Participants were 'highly' active at basline so future research to be with inactive participants and an increased intensity and dose.
Pisu, M. et al (2016). USA.	Physical activity (Godlin leisure time exercise questionnaire), functional capacity (6 minute walk test), QOL (SF-36), Couples' trust (dydatic trust scale), 'other dydactic outcomes'. Exit interviews.	Intervention group showed significant improvements in physical activity, mental component of QOL, vitality and dydatic trust scale.	Ballroom dancing a useful activity to ease survivors back into physical activity and enabled survivors to spend quality time with partners.

Kunkel, D. et al. (2017). U.K.	RCT feasibility of partnered ballroom dancing for PD. Semi-structured interviews.	Confirmed diagnosis of PD and recruited from outpatient departments, Parkinson's UK, National Institute for Health Research Clinical Research network.	36 participants in the dance group, 15 in the control group. 1 drop out in the dance group.	Mean aged dance=71.3(7.7) years old and control=69.7(6.0) years old.	95% confidence intervals, F tests.	Participants randomised to a dance or control group. Dance to control ratio 35:15. Controls encouraged to participate with usual care and were offered vouchers to the dance classes upon completion of the study. Ballroom classes 1 hour, twice a week for 10 weeks.
Lazarou, I. et al (2017). Greece.	Explore effects of ballroom dancing on cognitive function on older adults with amnesic mild cognitive impairment (aMCI). RCT.	Recruited from Greek Alzheimer Association and Related Disorders groups? A little unclear in translation. Walk independently, recruited based on Petersen criteria for aMCI, medical clearance. No regular dancing or sporting activities.	129 older adults with aMCI diagnosis. Intervention group=66, control=63.	Mean 66.8 (10.1) years old. Range 55-75 years old. I	Descriptive statistics, Independent samples t-test.	Supervised exercise training group E-cycling & treadmill at 70% VO2 3 x a week for 8 weeks, n=44/ Dance protocol waltz group D- 3 x a week for 8 weeks, n=44- / Control group C, no exercise n=42.

Kunkel, D. et al. (2017). U.K.	Blinded assessments of the Berg Balance Scale, 180 degree turn test, TUGT, PDQ39, ABC balance confidence, PhoneFITT and EuroQOL-5D. Semi structured interviews assessing dance experience in a sub-group (14 with PD and their partners). Digitally recorded and transcribed and managed and analysed using Framework.	Feasibility target for recruitment achieved, retention-5 dancing dropouts, 3 outcome measures considered feasible. Participants said dancing was 'extremely enjoyable' and 'instructors instilled confidence and motivation'	Proposed sample size for trial, 220. Problems with some outcome measures not being sensitive enough- ceiling effect- and recommend the Mini-BEST as an alternative. Suggest using the 6MWT as a primary outcome in future studies.
Lazarou, I. et al (2017). Greece.	Survey developed for the study assessing dancers' perceptions of the benefits in physical fitness, affect, cognition and social functioning from ballroom dancing.	No change in control group- most showed a 'decline'. Significant changes in most of the outcome measures for the ballroom group, for neuropsychological tests. No improvements for the control group and in fact worsened on some memory, functionality, cognition and attention tests. Suggest comparing ballroom dancing to traditional physical therapy interventions.	Clinically significant improvements for aMCI following ballroom dancing intervention. Suggest comparing ballroom dancing to traditional physical therapy interventions for future studies.

Appendix 2 Research Ethics Proposal Form

THE UNIVERSITY OF HUDDERSFIELD

School of Human and Health Sciences – School Research Ethics Panel

OUTLINE OF PROPOSAL

Please complete and return via email to:

Kirsty Thomson SREP Administrator: hhs_srep@hud.ac.uk

Name of applicant: Sarah Chipperfield

Title of study: A mixed methods investigation into the effect of ballroom dancing on physical and mental health outcome measures in community dwelling older adults.

Department: Health Sciences

Date sent: 14th June 2011

Issue	Please provide sufficient detail for SREP to assess strategies used to address ethical issues in the research proposal
Researcher(s) details	Sarah Chipperfield, Course Leader, BSC (Hons) Physiotherapy, Queensgate Campus, University of Huddersfield. MA Learning and Teaching in Higher Education 2008 London Metropolitan University M. Medical Science Sports Medicine 2001 University of Glasgow BSc (Hons) Physiotherapy 1998 University of the West of England s.r.chipperfield@hud.ac.uk 01484 473292 This study will fulfil the academic requirements for the academic award of PhD.
Supervisor details	Dr Chris Gifford (University of Huddersfield) c.g.gifford@hud.ac.uk Dr Dave Robinson (University of Huddersfield) d.robinson@hud.ac.uk Dr Jonathan Skinner (Queen's University Belfast) j.skinner@qub.ac.uk
Aim / objectives	The aim of this research is to use qualitative and quantitative approaches to studying the 'dance narrative': that is, to investigate how an individual's spoken dance narrative corresponds to

	<p>measurements of their physical and mental health. Semi-structured interviews will be used to explore the dance narrative and will be considered alongside physiological health outcome measurements. Both sets of data will be treated as 'body narratives', stories told or held by participants.</p> <p>By attempting to gain understanding of one's dancing life, this research aims to consider why ballroom dancing is a popular activity for older people and the health benefits it provides. As a form of physical activity, one would expect ballroom dancing would provide health benefits, the physical more obvious, the mental health benefits perhaps more subtle, but equally as important.</p> <p>Research Questions:</p> <ol style="list-style-type: none"> 1. Does recreational ballroom dancing in older people impact upon balance and functional activity outcome measures? (As measured by balance, strength, functional activity) 2. Does recreational ballroom dancing in older people impact upon levels of depression and anxiety in older people? (As measured by FES-I and the CORE-GP) 3. How does recreational ballroom dancing shape older people's identity, social lifestyles and relationships? 4. Is there a relationship between the spoken narrative of a dance life and the physiological outcome measures data? (As told by the interviews and outcome measure findings)
<p>Brief overview of research methodology</p>	<p>The participants will be recruited from community-dwelling 'older people' who participate in recreational ballroom dance and who are aged 60 and over (with no upper limit upon age). Links have been made with local dance tutors and community groups for promotion of the study and participants will be recruited through these groups.</p> <p>Participants who volunteer to be involved in the study will be assessed in terms of balance, strength and functional activity. This is because one of the risk factors for falls is being over 60 years of age (Donoghue et al, 2003) and individuals aged 60 and over have</p>

been studied as 'at risk' populations previously (Muir et al, 2010). Falls occur more frequently in community-dwelling older adults over the age of 65, with one-third of this age-group falling each year and falls, or implications thereof, are said to be the leading cause of death in this age-group (Perell et al, 2001; Mitty and Flores, 2007; Lueckenotte and Conley, 2009). Falls can be caused by a multifactorial list of intrinsic and extrinsic factors, such as hazards within the home. To maximise the clinical relevance of this study and the impact for the local dance classes (in terms of health economics and impact factors), intrinsic factors will be assessed by using physical outcome measures that are regularly used as falls indicators in clinical practice, thus maximising the potential clinical impact of this study.

Physical Outcome Measures Testing:

To be performed at baseline, 3, 6, 9 and 12 months within the Health Sciences laboratories, the Ramsden building, Queensgate campus.

Biodex Balance System SD™: Biodex Medical Systems, Shirley, New York.

The Biodex system (Biodex, *n.d.* a) will be used to assess participants' balance.

There is a Biodex machine in the Department of Health Sciences laboratory in the Ramsden building and technician support has been discussed with Michael Fish (senior technician) and is supported for this research study. The university's current machine is a non-portable device so participants will have to attend the university for 'testing' sessions. 'Postural stability assessment', Limits of Stability and 'falls risk assessment' will be measured using the Biodex Balance System SD™ and compared to normative data for age-groups and against an individual's previous results (thus looking for any change) at each stage of the assessment every three-months. These three assessments are pre-set settings on the Biodex machine and individuals' results can be compared to the Biodex Fall Program Balance Index for normative data for age groups (Biodex, *n.d.* a) and assessed for changed over the course of the study.

	<p>Tinetti Performance Orientated Mobility Assessment balance scale This is a multi-item assessment of abnormalities of gait and static and dynamic balance. It has been found to have acceptable levels of sensitivity of predicting falls when used as a screening test in community dwelling older people (Raïche et al, 2000; Wolfe et al, 2010; Perell et al, 2001; Mitty and Flores, 2007).</p> <p>Functional Reach Test Measures the distance an individual can reach without having to take a step forward, a test that is said to have strong predictive validity and good reliability (Fawcett, 2007; Muir et al, 2010) and sensitivity and specificity (Scott et al, 2007) for predicting falls.</p> <p>Timed Up and Go test To assess elements of motor performance, balance, gait and transfers (Fawcett, 2007) and presents sensitivity and specificity above the median of falls risk assessment tests (Perell et al, 2001).</p> <p>Four Square Step Test Is a valid, reliable and sensitive test of dynamic standing balance in an older population (AGILE, <i>n.d.</i>). The participant completes a series of steps within a square formation.</p> <p>Mental Health Outcome Measures</p> <p>Clinical Outcomes in Routine Examination- General Population (CORE-GP) A 14-item measure of general wellbeing, depression, anxiety, self esteem and life/social functioning. It has been validated for use within a non-clinical population (COREIMS, <i>n.d.</i>; Sinclair et al, 2005).</p> <p>Falls Efficacy Scale- International (FES-I) The FES-I is a measure specific to one’s fear of falling. It has been validated across cultures, having been translated into numerous languages (Yardley et al, 2005). It is a 16 item questionnaire</p>
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	<p>Themes for consideration during semi-structured interviews:</p> <ul style="list-style-type: none"> • Why do you dance? (trying to see if health benefits were an instigator in participating in ballroom as a leisure activity) • Have you previously / always/ never danced? • What exactly do people think about whilst they are dancing? (E.g. Are they thinking about getting the steps correct? Their appearance? Their health? How they look?) • Can you think of a time that a dancing session went really well/ really badly? When you enjoyed it or didn't? What was it about those sessions that made you feel that way? • What benefits do you think there are from dancing? • What are people doing (thinking, conceptualising (Williams, 2004, p.13)) when they dance? • How does recreational ballroom dancing shape or shift one's lifestyles or relationships with dance partners, other dancers, friends and family? (adapted from Marion, 2008, p.151) • Do individuals consider their body and health as an aspect of their dance-life? What problems do or have people had with their body and health? • What do individuals think it was that made them devote their spare time to dancing? How does dancing fit into the rest of their day/ week?
<p>Permissions for study</p>	<p>Permissions have been granted from the leaders of several local dance groups (lessons and community groups) to advertise/ approach people who attend their dancing groups.</p> <p>Anyone interested in participating will be provided with an information sheet on the research and the commitment involved. There will be opportunity given for interested participants to ask questions, before informed consent would be gained using the informed consent form in this application. Participants would naturally be advised they are free to leave the study at any point without reason needing to be given.</p>

<p>Access to participants</p>	<p>Recruitment: Participants will be recruited through local dance classes, in West and South Yorkshire. Recruitment will occur after liaison with the local dance tutors and community organisations (contacts have already been made in these areas). It is likely that community based dance classes in Kirklees will be used as bases for the majority of recruitment of participants. Participant involvement will cover approximately one year with intermittent interviews (at baseline, six months and 1 year) and testing of outcome measures at baseline and every three months over the 12-month period.</p> <p>Inclusion criteria: Participants will be aged sixty of above; must be free from any diagnosed dementia related illness and will be community dwelling.</p> <p>Participants will only be included in this study after having been made fully aware of the nature of the study and after having completed informed consent forms. Participants will be able to leave the study at any point without any further repercussions.</p>
<p>Confidentiality</p>	<p>Anonymity</p> <p>Participants will be asked to provide a pseudonym for use with the interview transcripts and a code number will be linked to these names for the data collection.</p> <p>Storage of data</p> <p>Interview and outcome measures data will be stored on confidential password protected computer and memory stick systems</p> <p>Who will access data?</p> <p>Access will be allowed only by the author. It is likely that the supervision team and HHS department statistician will also have sight of this data but all data will be anonymised and therefore identities will remain confidential past the author.</p> <p>Transcription will be performed by a professional transcriber (thus allowing the transcriber access to the audio interview files) but all data will remain anonymous and pseudonyms provided for the purposes of maintaining confidentiality during the write-up of the work, and in possible future publication. There might be a risk of the transcriber recognising the voices on the audio files, and although this is unlikely, confidentiality procedures will also be explained to the transcriber.</p> <p>Destruction of data</p>

	Data will be kept for the duration of the study until completion of the PhD and afterwards until data has been utilised for conference presentation and publication purposes. However, I would like to archive the data as the narrative analysis may be of future historical value, so I would like to take SREP's advice on this please.
Anonymity	All data will remain anonymous and pseudonyms provided for the purposes of maintaining confidentiality during the write-up of the work, and in possible future publications.
Psychological support for participants	By nature of interviewing participants, this might cause recall of unpleasant events causing distress to the interviewee and possibly the interviewer. However, given the subject of this study, this is going to be an unlikely occurrence. In the event of any distress, participants will be advised to seek professional help through their GP. Please see accompanying risk form.
Researcher safety / support (attach complete University Risk Analysis and Management form)	<p>Please see accompanying risk form.</p> <p>Use of physical outcome measures testing equipment. This assessment might highlight health problems that require medical intervention. In this situation, participants will be advised to contact their general practitioners as soon as possible. It might be that some of the physical testing procedures would carry a small risk of 'harm', for example, when balance testing participants might be at risk of falling off of the testing equipment. All correct safety procedures will be followed for testing to minimise any risk to participants. If there is any obvious risk that participants will be unable to complete tests, those elements of the study will not be completed.</p> <p>Use of mental health outcome measures might also highlight similar mental health related problems that will require medical intervention and participants will also be advised to seek medical assistance from their GP.</p> <p>It will be important to manage the above issues with sensitivity; thus not causing harm or alarm to participants.</p> <p>Risk to participants or the researcher:</p> <p>As above, there might be the slight potential for injury to participants whilst collecting some of the physical outcome measure data. Interviews might raise emotions within participants that require further care (for example counselling in the event of a dance story causing recall of a distressing incident). In the event of such</p>

	<p>occurrences, participants will be advised to seek medical advice from their GP.</p> <p>There might be possibility of some of the dancing sessions posing a risk to the researcher or participants in terms of physical injury. However, all participants will be paying 'customers' who participate in their dance classes at their own risk and their dance tutors will be covered by insurance.</p>
Identify any potential conflicts of interest	None identified.
Please supply copies of all relevant supporting documentation electronically. If this is not available electronically, please provide explanation and supply hard copy	
Information sheet	Yes
Consent form	Yes
Letters	N/A
Questionnaire	<p>Bseline Questionnaire</p> <p>Follow-up questionnaire (3,6,9, 12 months)</p> <p>CORE-GP questionnaire (this is copyright but permission has been gained to use this by request from CORE-IMS so please can the example questionnaire be used for the purposes of SREP only).</p> <p>FES-I Falls Efficacy Scale International</p>
Interview schedule	Yes
Dissemination of results	<p>Conference presentations and peer reviewed journal submissions.</p> <p>Participants will be able to request a summary of the research should they be interested in the overall findings.</p>
Other issues	None identified.
Where application is to be made to NHS Research Ethics Committee	N/A. Participants will be recruited through local community groups so there will be no direct contact made with the NHS.
All documentation has been read by	Yes.

supervisor (where applicable)	
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All documentation must be submitted to the SREP administrator. All proposals will be reviewed by two members of SREP. If it is considered necessary to discuss the proposal with the full SREP, the applicant (and their supervisor if the applicant is a student) will be invited to attend the next SREP meeting.

If you have any queries relating to the completion of this form or any other queries relating to SREP's consideration of this proposal, please do not hesitate to contact either of the co-chairs of SREP: Professor Eric Blyth e.d.blyth@hud.ac.uk; ☎ [47] 2457 or Professor Nigel King n.king@hud.ac.uk ; ☎ [47] 2812

Appendix 3 Risk Assessment Form

Table A4 Risk Assessment form

THE UNIVERSITY OF HUDDERSFIELD: RISK ANALYSIS & MANAGEMENT

ACTIVITY: Interviews and physiological and mental health outcome measure testing			Name: Sarah Chipperfield	
LOCATION: Queensgate Campus			Date: 26 th May 2011	Review Date:
Hazard(s) Identified	Details of Risk(s)	People at Risk	Risk management measures	Other comments
1. Use of the Biodex balance system machine	The Biodex enables dynamic balance testing, meaning there is a 'wobble board' platform on which participants will stand to complete the testing.	Participants	Instructions for the test procedure will be explained to each participant prior to them standing on the machine and it being turned on. The testing procedure will be carried out in a standard manner and instructions given to hold on to the handle bars of the machine if the participant feels at all at risk of falling off. Whilst the wobble board movement and the risk of falling off the machine is minimal, to maximise safety, crash mats will be placed around the Biodex machine to cushion any potential falls.	As above, there might be the slight potential for injury to participants whilst collecting some of the physical outcome measure data. The Department of Health Sciences has designated individuals trained in first aid who will be contactable and nearby on the days of data collection. Should physical injury occur, appropriate intervention will be sought. All participants will be paying customers at their dance classes and will

<p>2. Use of physical outcome measure tests</p>	<p>The tests to be used (as in the method described) are tests to assess risk of falls in older people. Whilst it is assumed that dancing participants will have good mobility, some balance problems might be highlighted.</p>	<p>Participants</p>	<p>All tests to be used in this study are used clinically and have standardised instructions to explain what will happen in each test. The standard instructions will be explained to each participant prior to carrying out the tests. Should any of the outcome measures show a high risk of falls, or risk for completing the remaining tests, the testing procedure will stop immediately. For many of these tests, chairs and crash mats will be appropriately placed to cushion any potential falls.</p>	<p>participate in their classes at their own risk.</p>
<p>3. The physical and mental health outcome measures identify a high risk of falling or potential mental health illness</p>	<p>The tests to be employed provide an indication of an individual's risk of falling or mental health illness. In the event that a participant is identified as having a high risk of falling or possible mental health illness, either</p>	<p>Participants</p>	<p>Each test provides scores indicating whether an individual is at risk of falling or not, or of their mental health and wellbeing. If any participants are identified as being 'at risk' they will be advised to seek</p>	<p>The completion of these outcome measures might highlight physical or mental health related problems that will require further medical intervention. Whilst advising participants to seek medical advice or</p>

<p>4. Interviewing participants causes consideration or recall of distressing or worrying events for research participants or distress to the researcher who is advised of this information</p>	<p>by being unable to complete tests, or completing them but being below the 'cut off' markers for each test, appropriate advice will be given to seek further medical and counseling assistance through their General Practitioner.</p> <p>Levy (2005, cited by Dillenbeck and Hammond-Meiers, 2009, p.112) suggests that movement can initiate the recall of 'memories, images and sensations that have long been buried in one's unconscious' and interviews might also raise emotions within participants during the process of telling dance stories, all of which might</p>	<p>Participants</p> <p>Researcher</p>	<p>further medical advice through their GPs.</p> <p>In the event of participants not being able to complete tests, the testing will stop immediately to protect participant safety.</p> <p>Participants will be advised to seek the advice of their general practitioner for further professional healthcare management or advice should any distress arise from reflection upon their dance experiences.</p>	<p>intervention, it will be important to manage the above issues with sensitivity; thus not causing harm or alarm to participants.</p> <p>The researcher is also aware of the university's counselling services being available to staff should any event during the research give need for contacting such support services.</p>
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<p>5. Lone working when interviewing</p>	<p>require further care, for example counselling in the event of a dance story causing recall of a distressing and hitherto repressed incident. In this event, participants will be advised to seek further medical advice from their general practitioners.</p> <p>If it is more convenient for interviews to be performed in individual's homes, this will be offered.</p>	<p>Researcher</p>	<p>As this is likely to mean lone working, the researcher will inform the department secretary of her appointment times and destinations and a mobile phone contact number will be provided. The researcher will also inform the departmental secretary once the interview is complete and she has left the participant's home.</p>	<p>The researcher will have met all participants at the university and completed the 'testing' prior to interviews being offered at home, so that these individuals will previously have been met by the researcher.</p> <p>Whilst attempts will be made to complete as many interviews at the university as possible, for some</p>
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				individuals who would find it difficult or inconvenient to get to the university at a particular time, interviews at home might be offered to maintain retention of participants within the study.
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Appendix 4 Participant Information Sheet

A mixed methods investigation into the effect of ballroom dancing on physical and mental wellbeing outcome measures in community dwelling older adults.

Researcher: Sarah Chipperfield

Participant Information Sheet

Aim of the research

The aim of this research is to investigate the experience of participation in ballroom by adults over the age of sixty. It will look at how ballroom dancing might influence one's physical health and mental wellbeing. One of the areas the research will consider is the effect of ballroom dancing on an individual's balance.

What will I have to do?

To study these ideas, participants will be recruited to the research study for a period of one year. During this time, you will be asked to come to the University of Huddersfield to complete some activities and questionnaires and be interviewed by Sarah Chipperfield about your dancing experiences. Each visit to the university will take 1-2 hours. Interviews will last approximately one hour and can be completed on the same day as the activities at the university, or if more convenient, on another day at your home.

In the sessions at the university, participants will be asked to complete a set of brief exercises, or 'tests', which are used as measures of balance. These tests would commonly be used by physiotherapists, and are straightforward activities such as short timed walks, counting how many steps it takes an individual to turn in a full circle and 'wobble board' tests. All activities will be fully explained prior to starting and your safety and wellbeing will be considered at all times.

If you wish to participate in this study, you will be asked to complete a simple questionnaire before starting the study, which will contain basic details about your age, height, weight and any health problems you currently have or any medications you are taking and your ballroom dancing activities. Answering these questions will check your suitability to participate in the study. Should any health issues be identified during the course of the study, you will be advised to seek further medical assistance from your general practitioner (GP).

At the start of the study, you will be invited to come to the university to complete the set of tests and questionnaires, you will then be invited back again to complete the same set of tests and wellbeing questionnaires again 3 months later, 6 months later, 9 months later and

at the end of the study 12 months later. It is very important that people are able to participate in this trial at these 5 different stages so that we can collect the information over the period of one year and see how your balance or health has changed alongside your ballroom dancing activities.

At the start of the study, 6 months into the study and in month 12, you will be interviewed about your dancing stories and experiences. These interviews could take place at your convenience at the university, or if more convenient on another day at your home address.

The 'balance' sessions at the university can take place at your convenience within the first, third, sixth, ninth and twelfth months of participating in this study, so a total of 5 visits.

What should I wear?

You should wear comfortable clothing and comfortable, flat footwear. No special clothing or equipment is necessary for participation in this study.

Results of the study

If you are interested in the findings of this study, please do not hesitate to contact me via email or phone as advised below and I will be happy to provide you with a summary once the research has been completed. It is hoped this will be complete by the end of July 2014.

Consent

It must be stressed that you are under *no obligation* to participate in this study. Any participation in this study and information you are willing to provide is done so on a voluntary basis and this information will remain anonymous, secured in a locked cabinet and only accessed by Sarah Chipperfield and on occasion, her research supervisors once the information has been made anonymous.

A consent form must be signed to confirm if you are happy to participate in this study and that you have had the opportunity to ask any further questions. This form will also confirm you are willing for your information to be used in any future publications, so long as you cannot be identified individually and that a pseudonym will be used.

You are also free to withdraw your participation in the study at any time, without having to provide any reason and without any repercussions. If you have any further questions about this research, please do not hesitate to contact me and I will be happy to answer your queries.

Thank you for your time and consideration of participation in this study,

A handwritten signature in blue ink that reads "S. Chipperfield".

Sarah Chipperfield

Senior Lecturer in Physiotherapy, The University of Huddersfield, Queensgate Campus,
Huddersfield, HD1 3DH e-mail: s.r.chipperfield@hud.ac.uk Tel: 01484 473292

Appendix 5 Consent Form

UNIVERSITY OF HUDDERSFIELD

BALLROOM DANCING:

A mixed methods investigation into the effect of ballroom dancing on physical and mental wellbeing outcome measures in community dwelling older adults

Sarah Chipperfield

Study consent form

I have been fully informed of the nature and aims of this research and consent to taking part in it.

I understand that I have the right to withdraw from the study at any time without giving any reason, and a right to withdraw my data if I wish.

I give my permission/do not give my permission for my interview to be tape recorded.

I give my permission/ do not give my permission for my tests to be video recorded.

I give permission to be quoted (by use of pseudonym).

I understand that the research data will be kept in secure conditions at the University of Huddersfield and I agree to the use of my anonymised data being archived once the research study has ended.

I understand that no persons other than the interviewer and transcriber will have access to the interview recording.

I understand that my identity will be protected by the use of pseudonym in the research report and that no information that could lead to my being identified will be included in any report or publication resulting from this research.

Name of participant

Signature

Date

Name of researcher Sarah Chipperfield

Signature

Date

Two copies of this consent form should be completed: One copy to be retained by the participant and one copy to be retained by the researcher

Appendix 6 Baseline Questionnaire

A mixed methods investigation into the effect of ballroom dancing on physical and mental wellbeing outcome measures in community dwelling older adults.

Researcher: Sarah Chipperfield

Baseline Participant Information Sheet

Please note: this information will remain confidential.

Name:

Address:

Telephone contact:

Email:

Date of Birth:

Height:

Weight:

Do you have any known medical problems? If yes, please list them:

Have you been diagnosed with dementia or any other dementia related illness? If yes, please provide details:

Have you ever suffered a fall? If yes, please state when this was:

Please list any medications you currently take:

Can you please give an indication of how often you participate in ballroom dancing activities, for example, do you dance once a week, twice a week, once a month?

Do you take part in any other regular form of physical exercise? If yes, please specify:

Appendix 7 Follow-Up Questionnaire

A mixed methods investigation into the effect of ballroom dancing on physical and mental wellbeing outcome measures in community dwelling older adults.

Researcher: Sarah Chipperfield

Follow-up Questionnaire

Please note: this information will remain confidential.

Study Identification: _____

Since the last meeting 3 months ago, have you been diagnosed with any medical problems?
If yes, please list:

Since the last meeting, have you suffered a fall? If yes, please state when this was:

Please list any medications you have started to take in the last 3 months:

Thinking about your levels of dancing activity over the last 3 months, can you please give an indication of how often you have participated in ballroom dancing:

Do you usually dance...

Once a week:

Twice a week:


More than twice a week: (please specify)

How long would you estimate each dancing session you go to lasts (please tick):

30 minutes 1 hour Other (please specify time)_____

Have you started any new form of regular physical activity over the last 3 months? If yes, please specify:

Appendix 8 CORE-GP



CORE - GP
(14 Item)

ID Number

Age

Date form completed / /

Male

Female

IMPORTANT - PLEASE READ THIS FIRST

This form has 14 statements about how you have been
OVER THE LAST WEEK.

Please read each statement and think how often you felt that way last week.
Then tick the box which is closest to this.

Please use a dark pen (not pencil) and tick clearly within the boxes.

		Not at all	Only Occasionally	Sometimes	Often	Most or all the time
1 I have felt tense, anxious or nervous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 I have felt I have someone to turn to for support when needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 I have felt O.K. about myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 I have felt able to cope when things go wrong	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 I have been troubled by aches, pains or other physical problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 I have been happy with the things I have done.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 I have had difficulty getting to sleep or staying asleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8 I have felt warmth or affection for someone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9 I have been able to do most things I needed to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10 I have felt criticised by other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11 I have felt unhappy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12 I have been irritable when with other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13 I have felt optimistic about my future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14 I have achieved the things I wanted to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

THANK YOU FOR YOUR TIME IN COMPLETING THIS QUESTIONNAIRE

Survey : 355
Copyright MHF and CORE System Group.
Page : 1

Appendix 9 Falls Efficacy Scale- International

Falls Efficacy Scale- I

Participant Identification _____

Date _____

On a scale from 1 to 10, with *1 being very confident and 10 being not confident at all*, how confident are you that you do the following activities without falling?

Activity	Score 1 very confident to 10 not very confident at all
Take a bath or shower	
Reach into cabinets or closets	
Walk around the house	
Prepare meals not requiring heavy or hot objects	
Get in and out of bed	
Answer the door or telephone	
Get in and out of a chair	
Getting dressed and undressed	
Personal grooming (i.e. washing your face)	
Getting on and off the toilet	
Total Score:	

Tinetti, M., Richman, D. and Powell, L. (1990) Falls Efficacy as a Measure of Fear of Falling. *Journal of Gerontology*. 45: 239

Appendix 10 Tinetti's Test/ POAM

Tinetti's Test Balance Section:

TINETTI BALANCE ASSESSMENT TOOL

Tinetti ME, Williams TF, Mayewski R, Fall Risk Index for elderly patients based on number of chronic disabilities. Am J Med 1986;80:429-434

PATIENTS NAME _____ D.o.b. _____ Ward _____

BALANCE SECTION

Patient is seated in hard, armless chair;

		Date	
Sitting Balance	Leans or slides in chair	= 0	
	Steady, safe	= 1	
Rises from chair	Unable to without help	= 0	
	Able, uses arms to help	= 1	
	Able without use of arms	= 2	
Attempts to rise	Unable to without help	= 0	
	Able, requires > 1 attempt	= 1	
	Able to rise, 1 attempt	= 2	
Immediate standing Balance (first 5 seconds)	Unsteady (staggers, moves feet, trunk sway)	= 0	
	Steady but uses walker or other support	= 1	
	Steady without walker or other support	= 2	
Standing balance	Unsteady	= 0	
	Steady but wide stance and uses support	= 1	
	Narrow stance without support	= 2	
Nudged	Begins to fall	= 0	
	Staggers, grabs, catches self	= 1	
	Steady	= 2	
Eyes closed	Unsteady	= 0	
	Steady	= 1	
Turning 360 degrees	Discontinuous steps	= 0	
	Continuous	= 1	
	Unsteady (grabs, staggers)	= 0	
	Steady	= 1	
Sitting down	Unsafe (misjudged distance, falls into chair)	= 0	
	Uses arms or not a smooth motion	= 1	
	Safe, smooth motion	= 2	
	Balance score	/16	/16

P.T.O.

Tinetti's Test Gait Section:

TINETTI BALANCE ASSESSMENT TOOL

GAIT SECTION

Patient stands with therapist, walks across room (+/- aids), first at usual pace, then at rapid pace.

		Date	
Indication of gait (Immediately after told to 'go')	Any hesitancy or multiple attempts	= 0	
	No hesitancy	= 1	
Step length and height	Step to	= 0	
	Step through R	= 1	
	Step through L	= 1	
Foot clearance	Foot drop	= 0	
	L foot clears floor	= 1	
	R foot clears floor	= 1	
Step symmetry	Right and left step length not equal	= 0	
	Right and left step length appear equal	= 1	
Step continuity	Stopping or discontinuity between steps	= 0	
	Steps appear continuous	= 1	
Path	Marked deviation	= 0	
	Mild/moderate deviation or uses w. aid	= 1	
	Straight without w. aid	= 2	
Trunk	Marked sway or uses w. aid	= 0	
	No sway but flex. knees or back or uses arms for stability	= 1	
	No sway, flex., use of arms or w. aid	= 2	
Walking time	Heels apart	= 0	
	Heels almost touching while walking	= 1	
	Gait score		/12 /12
	Balance score carried forward		/16 /16
	Total Score = Balance + Gait score		/28 /28

Risk Indicators:

Tinetti Tool Score	Risk of Falls
≤18	High
19-23	Moderate
≥24	Low

Appendix 11 Interview Guide

Interview Schedule

Sarah Chipperfield

Title of study: A mixed methods investigation into the effect of ballroom dancing on physical and mental wellbeing outcome measures in community dwelling older adults.

Themes for consideration during semi-structured interviews:

- Why do you dance? (trying to see if health benefits were an instigator in participating in ballroom as a leisure activity)
- Have you previously / always/ never danced?
- What exactly do people think about whilst they are dancing? (E.g. Are they thinking about getting the steps correct? Their appearance? Their health? How they look?)
- Can you think of a time that a dancing session went really well/ really badly? When you enjoyed it or didn't? What was it about those sessions that made you feel that way?
- What benefits do you think there are from dancing?
- What are people doing (thinking, conceptualising (Williams, 2004, p.13)) when they dance?
- How does recreational ballroom dancing shape or shift one's lifestyles or relationships with dance partners, other dancers, friends and family? (adapted from Marion, 2008, p.151)
- Do individuals consider their body and health as an aspect of their dance-life? What problems do or have people had with their body and health?
- What do individuals think it was that made them devote their spare time to dancing? How does dancing fit into the rest of their day/ week?
- Follow up at 6 and 12 months by exploring changes to dancing routine, injuries, illness, progression of skills, health, social aspects, other classes attended.

Appendix 12 Example Transcript and coding process

Figure A1 Excerpt from interview 1 with participants 1 and 2, page 1.

Page 1: Pencil markings denote initial line by line coding, purple pen open coding and numbers alongside denote coding categories.

<p>1 S- So thank you very much for coming in.</p> <p>2 1(F)- That's OK</p> <p>3 2-(M)- No, no, that's alright.</p> <p>4 S- What I want to find out about is your dancing history,</p> <p>5 so I know that you do ballroom dancing at the moment,</p> <p>6 so do you want to just tell me a bit about how that</p> <p>7 started? When it started?</p> <p>8 1- erm, well, when, so we're talking 40 odd years ago</p> <p>9 really, when we belonged to a church youth club, youth</p> <p>10 group, and we used to dance on a Saturday night in one of</p> <p>11 the church halls erm, but when we got married, well</p> <p>12 when we had the children, well probably when we got</p> <p>13 married actually, we haven't done any for years and years</p> <p>14 and years</p> <p>15 2- No</p> <p>16 1- friends of ours suggested, they were retiring, that we</p> <p>17 went ballroom dancing so we started again 8 years ago,</p> <p>18 we worked out it was 8 didn't we?</p> <p>19 2- but we used to go to different dances through either</p> <p>20 the rugby side, and we could get round,</p> <p>21 1- oh yes</p> <p>22 2- you know, even at school we probably did a barn</p> <p>23 dance, probably a volita (??) a quickstep and a waltz, erm,</p> <p>24 because it was very much, when we were growing up,</p> <p>25 they were the dances that you did sort of thing</p> <p>26 1- that's right</p> <p>27 2- but erm, as far as going for lessons, I think I had a</p> <p>28 couple of, er foxes up new north road, they used to have</p> <p>29 a dance there there were 3 or 4 lads used to go and I think</p> <p>30 if I went 3 times, or 4 times, that was as much...did you go</p> <p>31 to any lessons?</p> <p>32 1- no, no</p> <p>33 2- so it's what we really picked up either at the youth</p> <p>34 centre or the church and just general dancing really</p> <p>35 1- yes</p> <p>36 S-Did you do dancing at school?</p> <p>37 1- yes, we're both local and I went to a local girls school,</p> <p>38 but because I'm tall I was always the man! And had a bit</p> <p>39 of a hang up about that! So yes, I did learn at school.</p>	<p>4.8 PERSONAL HISTORY OF DANCE</p> <ul style="list-style-type: none"> - Long history of dance - 40 years ago - church youth group - weekend dances - church halls - married - children - haven't done any for years <p>4.3 DANCING THROUGH THE LIFE COURSE</p> <p>4.6 INFLUENCE OF OTHER</p> <p>RE-INTRODUCED BY FRIENDS</p> <ul style="list-style-type: none"> - friend suggestion - retiring - start dancing again - 8 years ago - social dances - 'could get round' - 'GET AROUND' <p>4.8 SCHOOL DANCING</p> <p>LESSONS DANCING AT SCHOOL</p> <ul style="list-style-type: none"> - quickstep + waltz - 'dances that you did' - DANCES THAT YOU DID. - lessons when younger - social dance with friends - 3 or 4 times <p>4.8 DANCING LESSONS IN YOUTH.</p> <p>4.8 DANCING AS A SOCIAL ACTIVITY - YOUTH</p> <p>4.8 LEADER/FOLLOWER</p> <p>SCHOOL LEADER/FOLLOWER.</p> <ul style="list-style-type: none"> - tall always the man. - hang up - learn at school. <p>DANCING LESSONS AT SCHOOL.</p> <p>4.8</p>
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Figure A2 Interview 1 with participants 1 and 2, page 2.

1 S- OK, I know other people I've spoken to said very early
 2 on they were learning dance at school and....

3 2- I didn't, we didn't do any dancing at school

4 1- I don't think boys' schools did

5 2- I was at the secondary mod, (1) was at grammar school
 6 so that could be something to do with it, I don't know...

7 1- was yours mixed?

8 2- yes but we never did dance, not that I can remember

9 S- So when you went with your friends, erm, what kind of
 10 age were you when you were?

11 2- Erm...(thinks) let's see, it were about 13, 12, 13, 14, er
 12 13! But it, I don't know, it just wasn't right! There were
 13 loads of other things you could go and do, erm,

14 1- You've always been very sporty though

15 2- yes, there would probably be football on or some rugby

16 S- So it's just quite interesting talking about both your
 17 experiences prior to meeting as well, erm, did you go to
 18 those dancing lessons when you were younger because it
 19 was one of the things you could do?

20 2- One of the things we could do, yes. There was a small,
 21 there was a cost of course and it wasn't a lot, but erm,
 22 erm I think if we went half a dozen times it was as much
 23 as er, there were a lot of other things that you could do
 24 which were more appealing to us all really.

25 S- Why do you think other things were more appealing?

26 2- Erm, I think really because, I've always been hands on
 27 sports wise, you know team sports, I've enjoyed that in
 28 my erm younger life and erm, it's not until later life that
 29 you know...

30 1- I think also, it was a bit, a bit cissy to dance really

31 2- Probably, probably, there was a bit of a stigma yes, well
 32 you know, 'yes, dancing?!' could have been, yeah

33 S- Do you think that's changing now?

34 1- I think it is and I think it's because of the programmes
 35 on the TV

36 2- When you look at the amount of allied, well dancing,
 37 whatever, that there's certainly a lot more and there

Handwritten notes:

- 4.8 DANCING LESSONS AT SCHOOL. - boys school didn't dance.
- 4.10 - state & grammar school - social class. something to do with it. SOCIAL CLASS
- 4.10 - mixed schools
- SOCIAL INCLUSION - boys never did dance. GENDER AND DANCE.
- 4.10 DANCING AS A SOCIAL ACTIVITY - YOUTH
- teenage dancing
- 'just wasn't right' at that age. GENDER AND DANCE
- loads of other things you could go and do. ALTERNATIVE ACTIVITY
- very sporty
- football, rugby
- 4.8 DANCING AS A SOCIAL ACTIVITY - YOUTH
- one of the things we could do.
- 2.4 FINANCIAL COST OF DANCING
- small cost - cheap
- GENDER AND DANCE 2.4
- other things more appealing than dance for young men.
- 2.1 ALTERNATIVE ACTIVITY
- younger men
- hands on sports
- team sports.
- not until later life.
- 4.3 DANCING AS A SOCIAL ACTIVITY - OLDER ADULT
- a bit cissy to dance
- 2.4 GENDER AND DANCE
- stigma
- 2.4 GENDER AND DANCE
- changing opinions
- strictly etc.
- GENDER AND DANCE
- a lot more dancing
- ACCESS TO DANCING CLASSES

Page 2 of 19

Appendix 13 Example Framework with verbatim quotes

Table A5 Example of the 'framework' chart layout for verbatim quotes

Parts/ int/page/line	Participant	Active ageing 1.1/ 3.1 PREVENTING INACTIVITY AND APATHY	
		1. VERBATIM TEXT ACTIVE AGEING	
		1.1	Active Ageing
1&2/1/5/4	1	Friends, it was 2 friends 8 years ago came down and said hey we're getting older, we've got to do more things, there's a dance studio in the village	
1&2/1/19/31	1	We certainly enjoy being busy. We do have a moan about it but I think I'd rather be like that than just sitting wondering what I'm going to read or whatever, I mean it keeps us busy doesn't it!	
1&2/1/11/6	2	And I've always been active, I've always trained from my teens up to you know, we now, I still go to the gym and I enjoy it. And I'm very fortunate that I can go with a colleague. I played rugby with a colleague and he's kept it up and he's 73 and he's still going and he's as fit as anything you know a 30 year old!	
1&2/2/3/86	1	It's just so nice to do something that keeps you fit, that allows you to socialise and you're doing with your partner. I mean O2 loves his golf, I could never play golf in a million years, but this is doing it together isn't it.	
1&2/3/8/230	1	I think whatever you do has to contribute and you often say I don't fancy going, because if he plays a round of golf on a Wednesday afternoon, he'll say oh I don't know if I feel, but then you feel better when you've done it, so it must be doing something good.	

I then went through each set of quotes by hand and wrote notes alongside in the right-hand columns to refine the themes as can be seen in the two photographs below. Some sub-themes were amalgamated in this process or quotes were considered to be relevant to other themes and transferred by theme/ sub-theme number to form the final 4 key themes and their sub-themes, for example where I have written 1.4 + 1.6 + 1.10 to be amalgamated into one sub-theme. The figures below show an example of the coding process for the theme 1.1 Preventing inactivity and apathy.

Figure A3 Examples of coding notes for 'preventing inactivity and apathy'

1.1 + 1.6 "Health Conscious" Health Conscious.

~~Active Ageing~~ 1.4 + 1.6 + 1.10

Parts/ int/page/line	Participant	Active ageing 1.1/3.1	Active Ageing	Conscious.
1. VERBATIM TEXT ACTIVE AGEING				
1.1				
			Active Ageing	
1&2/1/5/4	X	1 Friends, it was 2 friends 8 years ago came down and said hey we're getting older, we've got to do more things, there's a dance studio in the village	Introduction by friends	Increasing activity as ageing ✓
1&2/1/19/31		1 We certainly enjoy being busy. We do have a moan about it but I think I'd rather be like that than just sitting wondering what I'm going to read or whatever, I mean it keeps us busy doesn't it!	Keep maintaining an active lifestyle.	
1&2/1/11/6		2 And I've always been active, I've always trained from my teens up to you know, we now, I still go to the gym and I enjoy it. And I'm very fortunate that I can go with a colleague. I played rugby with a colleague and he's kept it up and he's 73 and he's still going and he's as fit as anything you know a 30 year	Always had an active lifestyle.	
1&2/2/3/86	X	1 It's just so nice to do something that keeps you fit, that allows you to socialise and you're doing with your partner. I mean O2 loves his golf, I could never play golf in a million years, but this is doing it together isn't it.	Maintaining an active lifestyle A social activity to do together.	*
1&2/3/8/230	X	1 I think whatever you do has to contribute and you often say I don't fancy going, because if he plays a round of golf on a Wednesday afternoon, he'll say oh I don't know if I feel, but then you feel better when you've done it, so it must be doing something good.	Making activity contribute to overall activity levels Feeling better for having exercised.	

1.1. Preventing Inactivity + Apathy

5/3/2/38	X	5 Yes and it gets you out because its very easy to get up and sit down and think I'll do that in ten minutes and, err, its good to have something to get up and go, to be there at a certain time, I think work up a bit of a sweat, yes, doesn't do any harm and meet people, move about, a cup of coffee after, you know, what can be bad about that.	Importance of keeping a schedule of activities after retirement and good to include physical and social activity.	✓ *
6&7/1/17/30	X	7 7- oh yes, I mean one of my daughters said it's great because I joined a choir a couple of years ago as well and er she came to see me and she said you know it's great that you started a challenge at your age and it's the same thing isn't it dancing? A challenge. So it does keep my mind active.	Starting new challenges and learning new skills in later life.	* Challenge.
6&7/1/21/16	X	6 6- yes, I think it's better than just going on a treadmill day after day. I mean yes you could probably get better at that but I'd rather dance! I do not like going on a machine! I much prefer to...or go for a walk in the countryside rather than	Dancing as an activity deemed to be more preferable than gym-based activity	
6&7/3/7/159		7 Oh yes, its got to, its got to, erm, I mean I do, as you know, I keep my body active, on the dance and that, do a circuit class and I do try to keep my mind active as well, you know, I do crosswords and I do puzzles and things, so I do try to keep my mind active as well, err, and although I've got a bad memory, my logic is pretty good.	Trying to maintain the capabilities of the ageing body and mind through activities	* The ageing *
8&9/1/6/155	X	9 But I'm conscious that as you get, since retirement, if you're not careful, you can become too sedentary can't you really and erm, so erm, you know, I think its, I think it's a good thing, I think its really good, err, and I do think, you know, its gentle exercise and I think its beneficial.	Importance of keeping a schedule of activities after retirement with physical benefits	*
10/1/13/391		10 Well I just think I'll keep going to the lessons and maybe should I ever find myself on my own again, it will stand me in good stead, but I can't see at the present time, I can't see me going anywhere to dance, no because again, it comes back to the phoney question of who do you go with.	Difficulty with going to venues to dance alone.	→ 4.2 ✓
10/3/12/307	X	10 No, a lot of it I started when he was still working you see. Now he's retired, you know, he realises just how much I'm out (laughter). But, erm, at least he accepts it,	Leading an active lifestyle after retirement.	

Appendix 14 Post-graduate training courses and timeline

Table A6 Postgraduate training course and timeline

Title	Course Start
PhD Submission	30/04/2018
Document Structure in Word	05/12/2017
Supervision Fundamentals For New Supervisors of Research Degrees (Part 2)	23/10/2017
Supervision Fundamentals For New Supervisors of Research Degrees (Part 1)	16/10/2017
Research Supervisor Regulations Refresher 2017/18	21/09/2017
Suspension of Studies	2016
Teaching and Learning Conference 2014	23/06/2014
Writing Your PhD Thesis	12/06/2014
Suspension of Studies Maternity Leave	2013
DATA COLLECTION	Sept 11 – April 13
Shall We Essentially Dance Training Day 3	27/05/11
Generation Dance An Interdisciplinary Dance Forum- Queen's University Belfast. Presented 'Ballroom Balance'.	20/04/11
Shall We Essentially Dance Training Day 2	18/03/11
PG Certificate University of East London 'Narrative Force'	Feb- June 2011
Shall We Essentially Dance Training Day 1	21/01/11
The Listening Guide, Narrative Training. Natasha Mauthner.	2011
Critical Thinking Skills	28/06/2010
Qualitative Data Analysis	24/06/2010
Qualitative Data Collection	11/06/2010
Organising Your References with EndNote.... and More	28/05/2010
MetaLib is Dead. Long Live Summon!	21/05/2010
Qualitative Data Analysis and the use of NVivo Software for Analysis	26/04/2010
Started PhD: PhD student Induction	April 2010

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