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**The Impact of a Cardiac Rehabilitation Programme
(CRP) on the Quality of Life (QOL) of Older Cardiac
Patients**

by

Vincent Finn

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

University of Huddersfield

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ABSTRACT

The aims of this mixed methods research study were twofold: (1) To explore the impact(s) of a cardiac rehabilitation programme (CRP) on the quality of life (QOL) of older cardiac patients who experienced either a myocardial infarction (MI) and/or a coronary artery bypass graft (CABG) and/or a percutaneous coronary intervention (PCI), otherwise known as a coronary angioplasty; and (2), To construct a QOL conceptual model based on the quantitative and qualitative aspects of the patient's bio-psycho-social-spiritual aspects of QOL on a CRP.

The research sought to answer four research questions devised around the physiological, psychological, and sociological domains of QOL. A mixed methods design was used, under the rubric of a critical realist theoretical approach.

The physical domains of QOL focused on the cardiac patients specific physiological measurements using a pre-test-post-test design in order to develop a deeper understanding, of the structures, mechanisms, contexts and outcomes of the CRP. Qualitative components focused on the subjective domains of QOL taken from the eclectic perspectives of cardiac health care professionals and cardiac patients using semi-structured interviews to develop an in-depth understanding of the bio-psycho-social-spiritual and health impacts of the programme. Thirty-five cardiac patients (n = 35) formed a non-random purposive sample for the quantitative component of the study. Using the same type of sampling method for the qualitative component, ten cardiac health care professionals (n = 10) and seven cardiac patients (n = 7) were interviewed to determine the various impact(s) that the programme had on the patients different domains of QOL.

The results, derived from dual perspectives, indicated that the CRP had strong positive impacts on the patient's QOL across the bio-psycho-social-spiritual domains of QOL. The newly created QOL conceptual model, entitled '*The Ripple Impact Model (TRIM) of QOL for Older Patients with Coronary Heart Disease (CHD)*' reflects the dynamic nature of an older cardiac patient's QOL on a CRP in view of how they define the concept globally from both medical and non-medical perspectives.

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BRIEF INTRODUCTIONS TO EACH CHAPTER OF THE THESIS

CHAPTER 1: Introduction, background and rationale

The purpose of this introductory chapter is to discuss the personal, professional and academic rationale for the production of an in-depth study on the '*impact of a cardiac rehabilitation programme (CRP) on the quality of life (QOL) of older cardiac patients*'. The scope, extent and size of the coronary heart disease (CHD) problem will be outlined and discussed in relation to current health policy that drives the national and local framework for NHS coronary care in England. The broad aims of the study are outlined with the formulation of objectives with concomitant operational definitions. This is set against the background of the specific contextual, structural and definitional aspects of a CRP based at a hospital trust within the West Yorkshire region of the UK.

CHAPTER 2: Literature review (part I)

This first section of this chapter provides details of the procedural aspects of the search strategy associated with the comprehensive and critical review of the literature. Subsequently, the clinical aspects of CHD are discussed which takes into account the pathogenesis, definitions and diagnosis of CHD. The discussion will then turn towards an examination of the 'epidemiological picture' of coronary heart disease (CHD) from national, regional and local perspectives. The latter two perspectives, respectively, involve the Northern and Yorkshire region and the Calderdale and Kirklees area, which will help clarify the extent and scope of the CHD problem more locally. Towards the end of this section, management and prevention of CHD will receive attention. Finally, a critique of cardiac rehabilitation, particularly its physical impact in 'middle-aged' or 'younger patients,' will receive attention in order to contextualise the impact(s) of this practice in an effort to enhance the QOL for older patients with CHD (MI/CABG/PCI).

CHAPTER 3: Literature review (part II): Quality of life (QOL)

The clinical perspective of CHD and the use of CRPs as a treatment option are closely linked to the cardiac patient's QOL and health status in view of how they interplay and influence each other. The purpose of the final chapter in this literature review is to critically examine conceptual and methodological issues attached to the concept of QOL and QOL measurement tools used in adult age groups. This discussion will be followed by a critique of selected QOL tools, (generic, disease-specific and patient generated outcome measures), and their applications to older

cardiac patients with CHD. Firstly, an outline of the concept of QOL will be located within its philosophical and historical roots.

CHAPTER 4: Design, methodology and theoretical framework

The purpose of this chapter is to justify, apply and critically evaluate the concept of critical realism as a philosophical/theoretical framework that underpins the methodology, methods of enquiry and the overall research process in relation to this empirical research study on cardiac rehabilitation and QOL. A critical analysis of the qualitative–quantitative approach will occur. The critical review will include the use of mixed methods as a form of social enquiry, the process of triangulation and their applications to the research study. A discussion of sampling and ethical issues will receive attention and, finally, the chapter will conclude with reflection on the preliminary pilot test and what learning took place as a consequence of this work.

CHAPTER 5: Data analysis: Quantitative approach

The main purpose of this chapter is to address and answer the first research question (RQ1) of the study from a quantitative critical realist perspective which addresses causal processes in relation to actions, mechanisms, contexts and outcomes:

(RQ 1): What is the physical impact of a cardiac rehabilitation programme (CRP) on older patient's quality of life (QOL) who suffers from a cardiac event (MI/CABG/PCI)?

In order to achieve this purpose, the researcher will utilise a Statistical Package for Social Scientists' (SPSS 15) mainly using descriptive statistics designed to organise, describe, and summarise the characteristics of the physiological data across a range of nominated physiological measures.

CHAPTER 6: Qualitative data analysis – research questions two, three and four.

The main purpose of Section A of this chapter is to address the qualitative analysis of the second research question (RQ 2) of the study – '*What are Cardiac Health Care Professional's (CHCPs) perceptions of the impact of the CRP on the older patient's QOL who suffers from a cardiac event (MI/CABG/PCI)*'. The concept of thematic analysis (TA) will be used as a mechanism to undertake qualitative data analysis for all three remaining research questions, including RQ 2 above. Adaptations of both Morse and Field's (2002) over-arching conceptual framework for TA, within Burnard's (1991) and Braun and Clarke's (2006) narrower practical guidelines for TA, will

be utilised to organise, manage, interpret, summarise and to report on the data. These frameworks will be applied to TA as an analytical tool for the analysis of all the qualitative material in relation to RQ's (2, 3 and 4) of this study: that is, in relation to the ten qualitative CHCPs interviews and the seven cardiac patient interviews. Firstly, the researcher will analyse the concept of TA, followed by Morse and Field's framework and, finally, the application of Burnard's (1991) and Braun and Clarke's (2006) narrower practical guidelines to TA.

Section B: RQ 3: Cardiac patients: Thematic analysis ('TA'): Findings/results

The main purpose of Section B this chapter is to address the qualitative analysis of the third research question (RQ 3) of the study using the frameworks mentioned above: "*How does an older cardiac patient, enrolled on a CRP, define QOL in relation to their cardiac event (MI/CABG/PCI)?*"

Section C: RQ 4: Cardiac patients: Thematic analysis ('TA'): Findings/results

The purpose of Section C of this chapter is to address the qualitative analysis of the final research question (RQ 4) using the frameworks previously mentioned: *RQ 4: "What are older cardiac patient's perceptions, meanings and experiences of the bio-psycho-social-spiritual impact of the CRP on their QOL?"* The qualitative analysis of RQ 4 is an extension or a continuation of research question (RQ 3) on definition, meanings and elements of QOL. It should be pointed out that the focus and emphasis now turns towards the bio-psycho-social-spiritual impact of the programme on the patient's QOL. The qualitative analysis of the research questions (RQ 3 and RQ 4) in the two overlapping sections B and C of this chapter completely addresses all the remaining questions on the 23 item semi-structured patient questionnaire.

Section D: Discussion of the research findings (all four research questions): Contributions to new knowledge

The purpose of Section D of this chapter is to introduce the last two phases of Morse and Field's (2002) framework for thematic analysis by way of *theorizing* and *re-contextualizing* the empirical data. The first two phases (*comprehending and synthesizing data*) of their framework has been addressed in the above chapter (*see p.158*). The process of theorizing the empirical data included the use of methodological triangulation. This process resulted in the construction of a new conceptual model which entitled "*The Ripple Impact Model of QOL for older cardiac patients with CHD' (MI/CABG/PCI)*". This work has contributed to the generation of new knowledge within the theoretical field of cardiac rehabilitation practice.

CHAPTER 7 – Conclusions, reflections, and recommendations

This final chapter of the thesis will discuss the quality assurance criteria of credibility, dependability, and transferability associated with this research study. This involves the process of “*re-contextualization*” - the fourth and final phase of Morse and Field’s (2002) framework. The process of researcher reflexivity will be considered and the limitations of the study will be addressed. A summary of the research work will receive attention together with the study’s conclusions. Finally, appropriate recommendations for further research work in the future will be declared.

CHAPTER 1: THE IMPACT OF A CARDIAC REHABILITATION PROGRAMME (CRP) ON THE QUALITY OF LIFE (QOL) OF OLDER CARDIAC PATIENTS

Introduction

The purpose of this introductory chapter is to discuss the personal, professional and academic rationale for the production of an in-depth study on the *'impact of a cardiac rehabilitation programme (CRP) on the quality of life (QOL) of older cardiac patients'*. The scope, extent and size of the coronary heart disease (CHD) problem will be outlined and discussed in relation to current health policy that drives the national and local framework for NHS coronary care in England. The broad aims and objectives of the study are outlined in conjunction with relevant operational definitions. The study is set against the background of the specific contextual, structural and definitional aspects of a CRP based at a hospital trust within the West Yorkshire region of the UK.

Rationale, context and background: CHD: government policy, age, ageism and cost

Over a period of time, the researcher involved in this study has developed a keen interest in the area of cardiac rehabilitation and how this health care intervention impacts on the quality of life of older cardiac patients. Older people are recognized as a disadvantaged group in society at large and, at times, specifically within the NHS health care system (Orme 2000; Rees et al., 2005; Bowling 2007). This interest has derived from the researcher's past academic study within the field of cardiac rehabilitation, which involved being 'immersed' in clinical practice to help develop a deeper understanding of the cardiac rehabilitation context, particularly for older people.

The context of this current study has occurred against the background of personal involvement in the research process within a local clinical cardiac environment on a regular basis (one day per week for five years), in partnership with a multi-disciplinary cardiac rehabilitation team. Examination of the cardiology literature, in conjunction with past and current clinical experiences through participation, personal involvement, conversations, meetings, clinics and experiences with both clinical staff and patients throughout the cardiac rehabilitation service, helped to generate this empirical study.

The latest governmental white paper acknowledges the centrality of patients' needs and ways of empowering individuals to make healthy choices about their lifestyles and involvement of the patient's *'voice'* in their own care and treatment within their local communities (Healthy Lives, Healthy People 2010). In harmony with these notions, the researcher wished to hear directly from

the requisite patients in person (and, latterly, from the cardiac health professionals) about their experiences of CHD and how cardiac rehabilitation impacted upon these experiences in relation to their QOL.

Cardiovascular disease (CVD) is a major health problem in the UK. CVD, with its two main forms of coronary heart disease (CHD) and stroke, accounted for nearly 191,000 deaths each year – one in three of all deaths (CHD Statistics 2010). Close to half (46%) of all deaths from CVD are due to CHD and almost a quarter (23%) are due to Stroke. On its own, CHD is the most common cause of death in the UK and was responsible for killing an estimated 88,000 people in 2008. In the same year, Stroke was responsible for over 43,000 deaths in the UK, with a further 60,000 deaths resulting from other circulatory disorders (CHD Statistics 2010).

In the Yorkshire and Humber region and the local areas of Calderdale and Kirklees, where the study is situated, CHD has a higher incidence than the national average (Eaton 2005). The CHD problem, both nationally and locally, is related to a complex interplay of factors, such as socio-economic and social class differences, unhealthy lifestyle factors e.g. lack of exercise, unhealthy diet, obesity, high blood pressure, smoking and high blood cholesterol levels (Eaton 2005; Colledge et al., 2010).

From a demographic perspective, the UK has a rising ageing population and this diverse older group has the greatest demand for health care resources, social care, and expenditure (NSF Older People 2001). In 1961, just under 12% of the population were aged 65 years or over. By 1991, nearly 16% were in this age group and this proportion is projected to rise to just over 22% in the year 2031. In tune with these figures, it is estimated that there will be 16 million people over pensionable age by 2031 (Johnson et al. 2005). The NSF for Older People (2001, p.1) paints a similar demographic picture of an ageing population in England:

“Since the early 1930’s those people over 65 years has more than doubled and today a fifth of the population is over 60. Between 1995 and 2025 the number of people aged 80 years and over is estimated to increase by almost a half and the number of people over 90 will double.”

CHD is a major cause of mortality and morbidity among adults over 65 years of age; indeed, the risk of mortality from cardiovascular diseases and other co-morbid conditions rises dramatically in both men and women with increasing age (Kumar and Clarke 2009). In relation to the clinical presentation of CHD, particularly manifested by a myocardial infarction (MI) in older patients, Brieger et al., (2004) performed a multi-national prospective observational study entitled ‘*Acute Coronary Syndromes without Chest Pain*’, which involved a total sample of 20,881 older patients from 14 countries from around the world. Atypical presentation of an MI (defined in this study by

those patients who did *not* complain of symptoms of chest pain) was regarded, in this study, as more common in older women (than men) with an age range of 63 – 81 years old (mean age 72.9 years) (Brieger et al., 2004). The women in this 'atypical presentation of an MI' sample (n = 736) (out of a total sample of n = 1,763 older patients) were more likely to have a history of hypertension, diabetes or heart failure. However, they were less likely to have a history of smoking, hyperlipidaemia or percutaneous coronary intervention (PCI) than the sample (n = 19,118) with a 'typical presentation of an MI' with chest pain) (Brieger et al., 2004).

This type of atypical clinical presentation is complex with an uncertain aetiology but may be associated, *inter alia*, with age-related physiological changes in the cardiovascular afferent nervous system (Hung et al., 2010). One mechanism involves the stimulation of visceral pain fibers arising from the heart and blood vessels which consequently make it difficult for older patients to localise and describe their chest pain (Hung et al., 2010). Age, per se, with its concomitant advancing atherosclerosis, is the most important risk factor for cardiovascular diseases (Ramrakha et al., 2010). Rates of chronic heart disease in older people, for example, angina, heart failure and other forms of cardiovascular diseases, have all shown a steady increase in older patients and the number of coronary revascularization procedures has grown steadily since the 1990s (Marmot and Elliott 2006; Hung et al. 2010). In view of this large and continually developing burden of CHD amongst older patients, which, in turn, is related to the growth of the older population in western societies, it is necessary, therefore, to prevent, reduce or alleviate CHD prevalence within this age group. This situation will help to improve the older person's quantity and quality of life through participation, for example, in effective secondary prevention programmes such as cardiac rehabilitation (Thow 2009).

Throughout a person's life course, ageing is regarded as a time for positive personal growth, whilst simultaneously tainted by 'loss' related to his/her physical and psycho-social domains of life. Our society tends to focus on the negative aspects of ageing as regards '*failing to recognize the importance of older people in the fabric of our everyday lives*' (O' Neill 2009, p.922). Consequently, with such a focus on negativity, unfortunately, ageist attitudes and age discrimination become rooted in the wider social order and, more specifically, within the health care system (O' Neill 2009). This ranges from years of discrimination against older people to second-rate treatment as a disadvantaged group within the population (Bowling 1999; Orme 2000; Davies and Jheeta 2001; Kmietowicz 2009). In particular, Bowling (2007, p.347) provides evidence to suggest that ageism, defined as a '*negative bias or prejudice based on age*', exists for older people in the US, Europe and the UK for a range of medical treatments. She points out heart disease as an example in the UK where:

“Age discrimination occurs across the clinical field of Cardiology from prevention to investigation and intervention. Receipt of cardiac interventions (medical, surgical and pharmacological) has been reported to vary with patients’ age, ethnicity and socioeconomic status.”
(Bowling 2007, p.347)

Ageism extends into secondary prevention programmes for CHD. For example, older people, women and the socially deprived are under-represented population groups who participate in cardiac rehabilitation programmes (CRPs) (Clark et al., 2002). This practice is related to a number of factors which include less aggressive referrals by physicians; health professional negative perceptions of a patient’s advancing age per se; presence of co-morbidity; lower initial exercise tolerance; and limited access to public and private transport (Clarke et al. 2002). Unjustly, some older people are excluded from research studies on the grounds of age, frailty and co-morbidity (Rees et al. 2005).

The burden of the CHD epidemic is expensive to the NHS in terms of financial resources. In the UK in 2006, cardiovascular disease (CVD) cost an estimated £14.4 billion per annum. Coronary heart disease (CHD), as a component part of the CVD spectrum of disorders in the UK, cost around £3.2 billion in the same year. CHD hospital care costs accounted for over 70% of these costs (BHF 2010). Human costs related to human production losses in the UK in 2006 cost over £3.9 billion; 65% of this cost was related to mortality and 35% due to morbidity rates associated with CHD. Informal care for people with CHD in the UK was estimated to be in the region of £1.8 billion in 2006. All in all, the total costs linked to the CHD burden of disease that affected the UK economy was estimated to be close to £9 billion a year (BHF 2010). Therefore, it is plausible to suggest based on cost-effectiveness alone, notwithstanding the extent of human suffering that ensues from CHD, to prevent the occurrence of the condition from individual to population level (Kucia and Quinn 2010).

In summary, personal and specific interest in the plight of older cardiac patients with CHD, in combination with the researcher’s interest in the field of Cardiology from professional and academic perspectives, have provided him with a strong rationale for the performance of this research study.

Research study: operational definitions

One ponders as to how ‘old is old’? Suffice it to say that ‘age, ageing, old age, and older’ are difficult concepts to define (Van Norman 2010). There is no general consensus as to what age a person becomes old (WHO 2011). In the developed western world, the older person is often defined chronologically by the calendar method as equal to or greater than 65 years old (WHO

2011). However, chronological age is not necessarily synonymous with biological or functional age, regarded by some as an indicator of the physical fitness of the person (Clarke et al. 2002). Some people might propose that 45 –50 years is ‘old’, whilst others might say that 75 – 80 year olds are relatively ‘young’. This definition leans more so on people’s attitudes/perceptions of ageing in terms of ‘old age as an attitude of mind’ based on the person’s outlook and philosophy of life (Johnson et al. 2004).

Older people are not a homogenous group but more heterogeneous in nature as they have a wide range of diverse needs and expectations. Generally, they may be categorized into three groups (National Service Framework (NSF) Older People 2001). Firstly, they might be defined as those active and independent people ‘entering old age’ (‘young-old’) and includes people as young as 50 or those from the traditional retirement ages of 60 – 65 years of age for women and men, respectively. Secondly, they consist of older people in the ‘transitional group’ (‘mid-old’). These people are in transition, loosely in the seventh or eighth decade of life, between health, active life and frailty. The final group comprises of ‘frail older people’ (‘old-old’) in late old age. This is a vulnerable group consisting of people with health problems, such as stroke or dementia, and with social care needs (NSF Older People 2001).

Older patients in this study cut across the ‘NSF’s *three group definition*’ but remained relatively ‘healthy’ with/without co-morbid illness (NSF Older People 2001). If co-morbidity was present, it was under medically controlled treatment(s) whereby patients displayed little or no symptoms whilst participating in cardiac rehabilitation. In this study, older cardiac patients were operationally defined as both sexes aged 60 years and over (age range = 60 – 88 years old, mean age = 69 years) who have suffered from a ‘heart attack’ or myocardial infarction (MI), and/or those patients who have undergone cardiac surgery (coronary artery bypass graft – CABG) and /or percutaneous coronary intervention (PCI or coronary angioplasty) as a result of CHD. Within the same CRP, these three patient groups were treated alike and underwent the same rehabilitation regime. They were relatively independent, mobile, living at home, generally retired and free from serious functional or organic mental illnesses such as acute schizophrenia, manic-depression or dementia. Older patients with unstable angina, serious cardiac arrhythmias, acute heart failure, or other acute serious medical problems were excluded from the study. Moreover, all the older cardiac patients were deemed medically fit by their responsible physician to participate in the CRP.

Within the broad theoretical or philosophical framework of critical realism that embraces subjective and objective realities or world views, a mixed-method empirical study (mixed quantitative and qualitative methods) was utilised to understand the depth and complexity of the

phenomena under scrutiny. In the context of this study, older people of mixed gender (mean age = 69 years) participated in a six-week CRP with an aerobic exercise component, which was based at an NHS hospital trust situated in the West Yorkshire region of the UK.

Aims and objectives of the study

The two overarching aims of the study were:

- (1) To explore the impact(s) of a CRP on the QOL of older cardiac patients who experienced either a myocardial infarction (MI) and/or a coronary artery bypass graft (CABG) and/or a percutaneous coronary intervention (PCI), otherwise known as a coronary angioplasty, and
- (2) To construct a QOL conceptual model based on the quantitative and qualitative aspects of the patient's bio-psycho-social-spiritual aspects of QOL on a CRP. This incorporated the qualitative perceptions of the cardiac health care professionals (CHCPs) and the cardiac patients of the meaning of QOL and how this programme influenced the bio-psycho-social-spiritual domains of the patient's lives.

In order to meet the aims of study, four key objectives were devised:

1. To determine the impact (s) that a CRP has on the cardiac patient's physiological health that are based at a hospital and within community settings.
2. To explore the perceptions and views of the multi-disciplinary cardiac team of the impact (s) that a CRP has on older cardiac patient's QOL.
3. To identify meanings and definitions that older cardiac patients attach to their QOL on a CRP.
4. To explore the older cardiac patient's perceptions and experiences of the holistic impact (bio-psycho-social-spiritual) that a CRP has on their QOL.

In summary, the researcher has developed a professional and personal rationale for examining the topic area of the impact that a CRP has on the QOL of older cardiac patients. This rationale is set against a brief overview of the current NHS health policies, which is regarded as one of the drivers for the study. The main research aims and objectives have been formulated to guide the direction of the study. In the next section of chapter one, it is useful to examine the local characteristics of the population and geographical area in which the study is based to understand

the underlying contextual reality of the practice of CRP. It is also useful to analyse how the CRP is structured to meet the needs of cardiac patients at the hospital trust and community settings (Thow 2009).

The local cardiac rehabilitation programme (CRP): definitions and structure

Two useful definitions in relation to the role of the CRP exist in the literature. Firstly, the rehabilitation of cardiac patients is:

“The sum of multi-disciplinary health care activities required to influence favourably the underlying cause of the disease, as well as the best possible physical, mental and social conditions, so that they may, by their own efforts preserve or resume when lost, as normal a place as possible in the community. Rehabilitation cannot be regarded as an isolated form of therapy but must be integrated with the whole treatment of which it forms only one facet.”
(Thow 2006, p.7)

Secondly, the purpose and role of the local multi-disciplinary CRP (consisting of a physician, senior cardiology nurses (hospital and community) and a physiotherapist) is to restore optimal physiological, psychological and leisure/vocational status (Bethel et al. 2009). It is designed to attain a training effect that improves functional capacity while increasing efficiency of the heart and peripheral muscles and to modify risk factors for coronary heart disease, utilizing an educational supportive framework provided by the cardiac rehabilitation team (Bethel et al. 2009).

The structure of the CRP at the hospital in the West Yorkshire region, consisted of four phases which reflected the British Association for Cardiac Rehabilitation (BACR) guidelines on the structure of cardiac rehabilitation services (Coates et al. 2003; Bethel et al. 2009):

- Phase I consisted of acute in-patient cardiac care in the coronary care unit (CCU) /cardiac ward, which lasts for about three to four days.
- Phase II occurred when the patient was discharged home from the CCU unit/cardiac ward for recuperation where he/she was followed up by the community cardiology district nurse for detailed individual cardiac health assessment.
- Phase III occurred at approximately five weeks post cardiac event when the patient returned to a six-week aerobic exercise group and relaxation class in either a hospital or a community setting to improve both cardiac and overall physical fitness and to manage stress effectively. This process occurred alongside a structured health education programme to assist the patient to improve his or her lifestyle.

- Phase IV occurred when the patient was discharged from the hospital environment to a long-term health maintenance programme in the community, which consists of various activities, including walking, swimming, exercise and continuing health improvement and lifestyle change (Coates et al. 2003; Bethel et al. 2009).

This study has focused in detail on Phase III of the CRP for older patients with CHD (MI/CABG/PCI) which occurred in the out-patient department of a hospital trust and within local community areas. It should be emphasised that Phase III in both locations, was not specifically designed to meet the needs of older people with CHD, on the grounds of a lack of financial and human resources, but rather, it catered for the needs of middle-aged to older people as a homogenous group. However, despite this scenario of service provision, older people (age range 60 – 88 years old) were amalgamated together into one specific rehabilitation group in order to best meet their needs and a similar situation applied to the middle-aged group (age range 46 – 59 years old).

The geographical region in which the study was located was generally considered to be a non-affluent area with pockets of social deprivation, combined with areas of relatively high unemployment rates, in comparison to the national profile (Calderdale and Kirklees Public Health Report 2002). This locality also contained a sub population of South Asian people (Pakistanis, Bangladeshis and Indians) who live alongside the white English indigenous population (Calderdale and Kirklees Public Health Report 2002). The characteristics of the population are important to note, as poor health is linked to socio-economic deprivation (health inequalities) and, in particular, CHD is much more prevalent in the South Asian population in the UK relative to Caucasians (Kuppuswamy and Gupta 2005; BHF 2008). It is important to address the health needs of the whole cardiac patient population at local level especially from the perspective of an exercise-based CRP.

The CRP exercise schedule, supervised by a senior physiotherapist, consisted of two full circuits of 15 exercise stations where each individual exercise lasted two minutes. This meant that the patient achieved one hour of active aerobic exercise. The exercise schedule was designed to increase the patient's resting heart rate to a target rate of 220 beats per minute (bpm) – the patient's maximal heart rate minus the patient's age. Target heart rate is a common method of prescribing and monitoring exercise intensity (Van Norman 2010).

The exercise schedule at the local trust was graduated in a hierarchical manner of difficulty in terms of energy expenditure, ranging from introductory level exercises to level six activities which are regarded as the most difficult. The exercises were evidence-based as they originated from

the latest version of the British Association of Cardiac Rehabilitation's (BACR's) / British Heart Foundation (BHF) 2006 recommendations (BACR/BHF 2006). All patients began at the introductory level and graduated upwards according to their levels of ability, personal wishes, health professional advice and freedom from cardiac signs and symptoms which were closely monitored by a cardiac rehabilitation nurse.

The cardiac rehabilitation exercise programme, as a whole, lasted six weeks, where patients took part in exercise regimes twice weekly; accordingly, patients received a total of twelve exercise sessions. Once completed, they were referred to the local Patient Activity Leisure Schedule (PALS), usually based at the local gymnasium or community centre, where they were strongly advised by the health care professionals to continue their exercise regime under the mentorship of sports and fitness instructors (Phase IV).

The senior cardiac rehabilitation nurse at the local trust/community location monitored and documented the patient's cardiac physiological parameters. This included assessment and documentation of heart rate, systolic and diastolic blood pressure, self-reported smoking status, Hospital Anxiety and Depression (HAD) scale and Body Mass Index (BMI) before the exercises began at resting phase and again after the exercise schedule. It was important to assess these parameters to ensure maximum patient safety in terms of cardio-respiratory homeostasis and as a method of monitoring or identification of cardiac signs and symptoms at pre and post exercise level (Van Norman 2010). Not least, their assessment was a useful evaluative mechanism to monitor the impact of the programme on the patient's physical and psychological status (Thow 2009). Prescribed medication status, especially for the older patient's cardiac event (age range 60 – 88 years), was also assessed and noted as they frequently sought health professional help and advice in terms of mode of action, dosage and potential side effects of various cardiac and other drugs (Thow 2009).

Once the exercise schedule had been completed, the patient was requested to rate their perceived exertion (RPE) on the Borg scale, which is a recognized valid and reliable measurement scale to determine the appropriate exercise intensity for older adults (Taylor and Johnson 2008, see appendix I). This category-ratio scale is deemed reliable for different modes of exercise e.g. cycling, walking, running, stepping, swimming and rowing (Jones and Rose 2005). The scale is widely used with cardiac patients, especially those taking beta-blockade medication generally used to reduce workload of the heart by reducing the heart rate after an MI and/or as anti-hypertensive therapy (BNF 2010). The scale has strong positive correlations or demonstrates a linear relationship with physiological variables, such as heart rate (HR), oxygen uptake (O₂) uptake, and blood lactate concentrations in continuous incremental exercise (Jones

and Rose 2005). In relation to the research study in question, the clinical parameters of oxygen (O₂) uptake and blood lactate levels were not assessed by the cardiologists in relation to the cardiac care of their patients and, thus, were deemed inappropriate to assess as they require specialized training, equipment and assessment techniques (Jones and Rose 2005). Borg is a behavioural index scale which requires standardization instructions for users to correctly assess rate of perceived exertion. It is a 15-point graded scale arranged in an ascending hierarchical manner ranging from 6 – 20, where 6 means ‘very very light’ to 20 which means ‘very very hard’ in relation to the most difficult exertion experienced with the exercise schedule (Center for Disease Control and Prevention (CDCP 2010) - see appendix I).

Before the exercise schedule began, the patients were requested to perform a two- minute ‘warm up’ in order to heat up various bodily muscle groups and joints and once the exercises are complete, there is a ‘cooling down’ period to help restore bodily activity to its resting phase (BACR/BHF 2006). The exercise programme was followed by a 20- minute relaxation phase (stress management regime) performed to soothing music and quiet standardized instructions from a health professional on how to systematically relax from a physical and psychological perspective (Coates et al. 2003).

Finally, all cardiac patients are followed up by multi-disciplinary cardiac health professionals composed of nurses, physiotherapists and physicians in out-patient clinics. Patients were also referred back to their General Practitioners (GPs) for ongoing cardiac care beyond discharge from the hospital/community setting. Wherever the patient may be on the care pathway, he/she is provided with the best evidence health care advice and education focusing on their individual cardiac risk factors and secondary prevention regimes, medication, lifestyle changes, continuing exercise and healthy dietary habits, and stress management techniques to prevent a re-occurrence of their cardiac event (Bath et al. 2009).

In summary, the context, structure, membership and the general activities of the local CRP based at a hospital trust in West Yorkshire in the UK has been described. Thus, the scene has been set for the contextual aspects of the study. The following chapters (two and three) will critically examine the state of current knowledge and practice in relation to a comprehensive literature review on the clinical aspects of CHD. These chapters will hold discussions on the process of cardiac rehabilitation as an important secondary preventative strategy, with an emphasis on older cardiac patients. Finally, these discussions will acknowledge the impact of these phenomena on the patient’s perceptions and experiences as regards their QOL from physical, psychological, social and spiritual perspectives.

CHAPTER 2: LITERATURE REVIEW

The literature review search strategy

Overall, the critical review of the literature associated with this research study (chapters two and three) is unashamedly non-exhaustive in nature, yet it identifies the salient, empirical, theoretical, methodological and practical work attached to the impact of cardiac rehabilitation practice on the quality of life (QOL) of older patients with CHD (MI/CABG/PCI).

In this chapter, a comprehensive critical review of the literature, ranging from an approximate 30-year span from 1980 to 2011 AD, occurred. Here, the review addressed the clinical aspects of CHD and the treatment process of cardiac rehabilitation in middle-aged adults (40 – 59 years) and in older people (60 years and older). The literature review performed in this chapter on the clinical aspects of cardiology is continued in chapter three on the subject matter of QOL. Both literature searches involved the use of the university library search engine entitled ‘Summon’ (previously known as ‘Metalib’ until 2009). This provided an integrated search of scholarly material in a huge range of different academic journals at the local university (The PDF list of journal titles in ‘Summon’ is over 4,000 pages long). The concept of ‘integrated’, narrowed to the relevant context of the ‘*School of Human and Health Sciences*’ at the university, was defined as a search for relevant subject material on health, QOL and cardiac rehabilitation in older patients with CHD. By entering in the appropriate search terms (see summary table – appendix II). ‘Summon’ searched the full library catalogue, including E-journals and print journals, E-books and relevant research material (e.g. PhD theses) in the university repository. ‘Summon’ limits the search results to just the journals that the university library subscribes to. However, it is possible to widen the search if one clicks on the ‘*tick box*’ ‘*Add results beyond your library’s collection*’. ‘Summon’ can be used by anyone in the world, although interested people, academics and researchers will eventually hit the barrier of having to log on to view the actual full text (unless it’s on open access).

‘Summon’ may be best thought of as a mechanism for searching journal articles (plus books and government reports), rather than as a search engine that reviews a collection of databases such as Cinahl and Medline. ‘Summon’ does not search Cinahl directly, but many of the journals that comprise the Cinahl collection are indexed in ‘Summon’. Because of this restriction, the researcher, using relevant search terms or items (see summary table – appendix II) interrogated individual databases such as Medline, Cinahl, PsycINFO, Cochrane library, Web of knowledge and Science Direct and the NHS evidence databases. In addition, a literature search on the subject matter (cardiac rehabilitation, QOL and older cardiac patients) was performed manually

by the researcher using the library's subject index, author and classification catalogues, indexes, abstract and bibliographies (Cormack 2000). Published academic journals which were peer reviewed were also searched electronically on an individual basis. In addition, relevant referred articles on the subject area in a range of different journals were searched, read and critically analysed on a monthly basis throughout the duration of the study.

Examples of these journals included: Quality of Life Research; Health and Quality of Life Outcomes; Social Indicators; Journal of Advanced Nursing; The Lancet; British Medical Journal; Nursing Philosophy; and Physiotherapy Theory and Practice, and so forth (see summary table – appendix II). Various academically respected internet websites were also searched for relevant subject material on a frequent basis e.g. Department of Health, UK; British Heart Foundation (BHF); British Heart Foundation Statistics Database and the Association for Public Health Observatories (APHO), and so forth (see summary table – appendix II).

In the process of learning how to strategically manage the large volume of literature retrieved by the researcher, a range of methodological, theoretical and research literature was searched under the guidance of the hierarchy of multi-disciplinary evidence-based research applicable to all health professions (SIGN 2008). This is a graded approach to evidence-based research, ranging from the higher conceptual levels of high quality meta-analysis and systematic reviews of randomized controlled trials (RCTs) to the 'lower' conceptual levels of non-analytic studies (e.g. case reports) and expert opinion (SIGN 2008). In this context, evidence-based health care is defined as the process of systematic reviewing, appraising and using the best available evidence from clinical research findings to maximize the delivery of optimum patient care in hospital and community settings (Sackett et al. 2000).

The use of the evidence-based strategy meant that some of the substantive literature used in this study focused on the higher graded conceptual levels of evidence-based research. These examples include meta-analysis, systematic reviews and RCTs and experimental physiological studies (animal models) in relation to the effectiveness of CRPs with exercise and QOL studies in older people with a range of cardiological problems (SIGN 2008). Other significant literature material reviewed, located approximately in the middle of the evidence hierarchy, included prospective follow-up studies and observational studies on the effects of exercise and CRP on the QOL of older people with cardiac problems (Polit and Beck 2008). Finally, a relatively large body of important subjective qualitative studies (located approximately from the mid to the lower bottom of the evidence hierarchy), and mixed-method studies (not graded in the evidence hierarchy) were studied and critically analysed by the researcher (Polit and Beck 2008). The researcher's critical analysis of these studies was designed to develop a comprehensive, rich, in-

depth understanding of the experiences, emotions and insights of older people's QOL undergoing rehabilitation for CHD.

The following brief account is an exemplar, equally applicable to any of the search terms used, of how the literature search was refined using one example of the key search term entitled '*quality of life*' from the 'Summon' search engine, ranging from 31st April 1980 – 31st April 2011 (see summary table, appendix II). This approximate 30-year search was selected on the basis of yielding comprehensive literature on the relevant topic or subject matter under study in this research work. This search revealed a total of 445,192 articles on '*quality of life*' which is a voluminous amount of literature on the concept written in 'all' languages. Inclusion criteria for refining the search took account of articles written in the English language only and the following items:

- Limit to articles from scholarly publications, including peer review
- Add results beyond your library's collection
- Journal article
- Book chapter
- Conference proceeding
- Book review

In the 'Summon' search engine, the 'subject terms' in the designated 'Summon' 'tick boxes' (no 'subject term' existed here for the Cardiology discipline) using the search term '*quality of life*' included:

- Medicine and public health (198 articles) (i.e. the total number of articles retrieved using the inclusion and exclusion criteria stated below).

Taking the above 198 articles into account, the search (by subject terms) was broken down into the following number of articles using the general search term '*quality of life*' in descending order:

- Surgery (73 articles)
- Cancer (36 articles)
- Analysis (18 articles)
- Quality of life (15 articles)
- Quality-of-life (13 articles)
- Health aspects (11 articles)
- Management (11 articles)

- Care and treatment (10 articles)
- Therapy (5 articles) / treatment outcome (2 articles)
- Randomised trial (2 articles)
- Middle aged (2 articles)
- Aged (0 article)
- Women (0 article)

The main examples of the exclusion criteria for this search ('*quality of life*') on the grounds of irrelevance to the Cardiology field were:

- Articles written in non-English languages
- Newspaper articles
- Aetiology/biopsy/diagnosis/survival
- Stomach neoplasms and related concepts
- Rectal cancer/neoplasm/surgery/faecal incontinence/colon cancer
- Breast cancer and related concepts
- Carcinoma/adenocarcinoma
- Radiotherapy/chemotherapy
- Mastectomy
- Ulcerative colitis
- Pathology/lymph node pathology
- And, finally, gastroenterology and hepatology.

Subsequently, the researcher read the appropriate relevant abstracts to determine relevance and suitability to the topic area under scrutiny. This process was followed by a critical appraisal of the full research paper related to QOL, middle-aged people, and older people, as the process was aimed at a 'general' search on '*quality of life*'. More specific data bases, as mentioned above e.g. Medline, Cinahl, Cochrane, and so forth, were searched to find relevant articles that made specific conceptual links between QOL, CRPs and middle-aged/older people with cardiac problems. The researcher critically reviewed the relevant articles using a systematic approach provided by Cormack's critical analytical framework or scheme of analysis associated with a literature review (Cormack 2000). The researcher has provided a detailed example in appendix III of the critical review of a seminal article used in this study to demonstrate how the critical appraisal process was undertaken using Cormack's (2000) scheme.

In summary, this '*general-to-the-specific-approach*' to the literature search provided the researcher with a wide array of articles that offered critical insights from theoretical,

methodological, empirical and practical perspectives. This depth of information yielded across the evidence-based hierarchy was designed to assist the researcher to develop a rich, broad and specific understanding of the impact that a CRP has on the QOL of older people with CHD.

Introduction

This section of the chapter involves a discussion of the pathogenesis, definitions and diagnosis of CHD. The discussion will then turn towards an examination of the 'epidemiological picture' of CHD from national, regional and local perspectives. The latter two perspectives, respectively, involve the Northern and Yorkshire region and the Calderdale and Kirklees area, which will help clarify the extent and scope of the CHD problem more locally. Towards the end of this section, management and prevention of CHD will receive attention. Finally, cardiac rehabilitation programmes (CRPs) and the application of the process to older cardiac patients will be analysed from a critical perspective.

Pathogenesis of CHD

The prominent abnormal feature which underpins CHD is the process of atherosclerosis (Colledge et al. 2010). This pathological concept is characterized by a progressive inflammatory disorder of the arterial wall characterized by gradual sedimentation of cholesterol laden deposits, macrophages and smooth muscle cells on the intimal and sub-endothelial walls of the coronary arteries (Kumar and Clark 2009). These deposits are particularly hazardous in these arterial networks, which are the anatomical lacy network of blood vessels that supply both nutrient- and oxygen-rich blood to the heart's muscle – the myocardium (Tortora and Derrickson 2009).

Ulceration or disruption of the plaque lesion(s) in the coronary arterial tree can result in thrombotic occlusion which maybe partial or total in nature (Kumar and Clark 2009). This obstruction will lead to a deficiency of blood supply to the myocardium which is termed ischaemic heart disease (IHD) or coronary heart disease (CHD). *As a result of this*, the myocardium is deprived of both oxygen and nutrients, which are necessary ingredients for the heart to function as an efficient pump (Tortora and Derrickson 2009). Two important disease entities, categorized under the broader nomenclature of CHD, include angina pectoris (defined as acute severe cardiac pain usually induced by exercise due to transient myocardial ischaemia) and the even more dramatic 'heart attack' which is medically known as myocardial infarction (MI). This is a striking clinical event which is invariably sudden and unpredictable and is usually due to coronary thrombosis and/or rupture of an unstable cholesterol plaque which either partially or totally blocks the coronary arteries, causing infarction, insult and injury to the local myocardial tissue. If

myocardial damage is sufficiently large, the patient may suffer from sudden death (Walsh and Crumbie 2007).

Because MI and unstable angina pectoris ((UAP) (rest angina greater than 20-minute duration) share common underlying pathological features e.g. (plaque rupture, thrombosis and inflammation), they have recently been classified under the broad umbrella term of 'Acute Coronary Syndromes' (ACS) (Kucia and Quinn 2010). Under the ACS nomenclature, MI has been classified as both ST wave elevation MI (STEMI) or (Q wave MI) – commonly known as 'the acute MI' and a non-ST wave elevation MI (NSTEMI) or (non Q wave MI) (Longmore et al. 2010).

The different types of MI are diagnosed by the patient's clinical history and typical manifestations may include prolonged ischaemic chest pain, dyspnoea, nausea and vomiting, anxiety, diaphoresis, and high or low blood pressure and/or heart rate and the use of the electrocardiograph (ECG). It is important to remember from a diagnostic perspective that some older people (63 – 81 years old), especially with an ageing and declining cardiovascular physiology, may present atypically with ACS. These patients do not complain of typical chest pain ('*silent ischaemia*') which may obscure an accurate diagnosis if health professionals are not vigilant (Kane et al. 2008). In relation to the diagnostic ECG, NSTEMI may manifest itself as ST depression, T wave inversion, non-specific changes or be normal. Diagnosis of ACS is also aided with an examination of the patient's blood profile, which demonstrates raised cardiac enzymes, specifically, the troponins – T and I. Measuring these enzymes are the bio-chemical assays of choice to demonstrate evidence of ACS (Longmore et al. 2010).

The atherogenic process underlining CHD is complex and the precise nature of the pathogenesis of atheroma is unclear (Marieb 2010). It may start in early adolescence, particularly in those who smoke or have familial hyperlipidaemia, and then may lie dormant for many years without any clinical manifestations until the advent of angina or MI in the fourth or fifth decade of life and sometimes much later (Colledge et al. 2010).

In atherogenesis, a cascade of pathological events occur, commencing with endothelial injury, platelet aggregation and the release of platelet-derived growth factors (PDGF), which is a protein known to have mitogenic properties for arterial smooth muscle cells. Subsequently, a local increase occurs in vessel wall permeability to plasma low density lipoproteins (LDL's), followed by smooth muscle hyperplasia (Marieb 2010). These events, in conjunction with activated inflammatory cells such as cytokine, lymphocyte, monocyte and macrophage accrument at the site, gradually and synergistically leads to the formation of both lipid-laden foam cells (LDL and macrophage endothelial cell infiltration) and the atheromatous plaque (Kucia and Quinn 2010).

These, in turn, can promote fibrosis, ulceration and calcification. The final event that occludes diseased arteries is thrombus formation of an ulcerated plaque promoted by simultaneous or parallel local activation of the blood coagulation cascade system (Zipes et al. 2005).

There are a number of coronary risk factors, alone or in combination, which are implicated in the complex aetiology of CHD. According to the ongoing longitudinal Framingham study on heart disease in the US, three major independent risk factors involved in the pathogenesis of CHD include smoking tobacco/cigarettes, hypertension and hyperlipidaemia (Colledge 2010). The latter phenomenon is associated with high saturated animal fat intake, high cholesterol levels, especially the low-density lipoprotein (LDL) type, and obesity. Other factors include Diabetes Mellitus, advancing age, lack of exercise, familial history, the male sex, and increased plasma homocysteine levels (Brunner and Suddarth 2010).

In summary, the formation of a thrombus and the atheromatous plaque (or the converse) in the arterial vessel wall is the result of complex interactions known as Virchow's triad occurring between:

- Damage to endothelial cell walls associated with cigarette smoke (free radicals), inflammatory cells or the presence of microbe infiltration within the plaque (e.g. *Chlamydia pneumonia*, *Helicobacter pylori* and/or cytomegalovirus) (Colledge et al. 2010).
- Abnormal blood stasis or turbulence as a result of physical inactivity, shear, stress, hypertension (particularly at the sites of arterial bifurcations), and bio-chemical abnormalities (elevated plasma homocysteine and/or LDLs) (Kumar and Clarke 2009).
- And, finally, blood hypercoagulability (abnormal haemostasis, the ageing process associated with increased platelet aggregation, smoking (increased fibrinogen levels) and the use of the contraceptive pill) (Watson 2009).

Epidemiological trends in CHD

Infectious diseases in the late 19th and the early 20th century had a major impact on the mortality rates of the UK population. Changing social conditions in terms of better sanitation and housing combined with the rise of the scientific, medical and technological revolution has virtually seen the demise of major infectious epidemics e.g. cholera (Opie and Yellon 2001; Zipes et al. 2005). This trend has had the additional effect of making people live longer in terms of increasing their life

expectancy (Marmot and Elliott 2005; Colledge 2010). However, the historical 'infectious landscape' has now been replaced by the rising prevalence of chronic degenerative 'lifestyle' diseases such as coronary heart disease (CHD) (Ramrakha et al. 2010). This shift from past infectious diseases to modern chronic health problems has been referred to as the 'epidemiological transition' (Wellens 1999; Opie and Yellon 2001). Carnes encapsulates the process of human ingenuity in enhancing longevity and the increase in modern human life expectancy as he states:

"Human ingenuity (science, medicine and public health) has produced interventions that manufacture survival time by delaying death, and in so doing, has created a phenomenon never before seen in the history of life – population ageing (and all the societal and health consequences that go with it)."
(Carnes 2007, p.14)

It is anticipated that CHD will continue to be an important cause of mortality, morbidity and rising health care costs far into the 21st century (BHF 2010). Three important trends underpin this phenomenon. Firstly, more patients are kept alive in the acute phases of CHD, for example, the proverbial 'heart attack' or acute MI, due to the advent of medical therapeutic options such as thrombolytic therapy and early revascularization interventions such as primary angioplasty for acute MIs (Colledge et al. 2010). This latter has the effect of changing patients into 'chronic cases' who, later on, may develop heart failure. Secondly, from a demographic perspective, there is an increase of aged people in the population. Ageing, in turn, is linked to an increase in the prevalence of CHD due to the increasing deposition of fatty atheromatous plaques within the coronary arteries (Kumar, Cottrons and Robbins 2003). Lastly, in contemporary society, there are increasing levels of obesity amongst the younger population, which, in turn, is associated with an increase in CHD, particularly as this population begins to age (Skidmore and Yarnell 2004; Kumar and Clarke 2010).

Cardiovascular diseases (CVD) (coronary heart disease (CHD), circulatory diseases and stroke) represent one of the leading causes of mortality and morbidity in the world with the exception, perhaps, of global infectious and parasitic diseases (Thow 2009). In the UK, CHD alone is a major health problem. About one in five men and one in seven women die from CHD. This translates into a total mortality of about 94,000 deaths in the UK each year (BHF 2008). It is estimated that 2.6 million people have CHD, with 660,000 people living with heart failure – a particular complication of heart disease (BHF 2004). CHD accounted for 31,000 premature deaths, defined as death before the age of 75 years, in the UK in 2006 (BHF 2008). Furthermore, CVD is an expensive disorder. It is estimated the total cost of CVD in the European Union vis-à-vis health care expenditure and lost productivity to be close to £170 billion per annum (Leal et al. 2006).

However, relatively recent trends illustrate that death rates from CHD have been falling in the UK since the '70s. For people under 65 years, mortality rates from CHD have fallen by 45% in the last ten years (BHF 2008). To a greater or lesser extent, these falling trends are associated with health promotion policies, government initiatives, an 'all out attack' on reducing major cardiac risk factors, especially smoking, and are linked to shifts in thinking in terms of public health measures to prevent CHD disease (Weissberg 2008).

However, despite these improvements, major concerns remain with regard to contemporary trends in CHD (Weissberg 2008). These demonstrate that the decline of CHD in people under 45 years, especially women, has slowed or 'plateaued', which may be due to younger people continuing to smoke cigarettes, being physically inactive, eating unhealthy diets, with resultant obesity. CHD preventative strategies should not only be directed towards middle-aged and older people but also should be vigorously targeted at relevant CHD risk factors in this younger population (Weissberg 2008).

From an international perspective, CHD mortality rates in the UK remain relatively high in comparison to other countries (BHF 2008). The death rates from CHD in developing countries in Eastern and Central Europe e.g. Ukraine, which has seen a recent rapid rise, are still higher than the UK. Developed European countries such as Finland and Ireland are the only two countries that have a higher CHD mortality rate than the UK (BHF 2006; BHF 2008). Thus, it can be seen that this puts the countries within the UK near the top of the coronary league table (CHD mortality) amongst the developed countries of Europe (BHF 2008).

CHD health inequalities, social class, ethnic minority groups and the North-South divide

Inequalities in CHD exist across the social class spectrum, particularly between professional social class one and social class five, the unskilled/working class in both sexes (Marmot and Elliott 2005). Death rates from CHD in working class men are more than three times greater than those among professional men (BHF 2010). This social class gradient has widened in the last twenty years which is related to people from working class backgrounds who have a tendency to smoke more cigarette tobacco, take excessive alcohol and eat unhealthy diets in comparison to the better educated and wealthier middle to upper classes (Marmot and Elliott 2005).

In addition to social class disparity evident for the prevalence of CHD, ethnic variations of CHD distribution exist in the UK. South Asian people living in the UK (Pakistanis, Bangladeshis, Indians and Sri Lankans) have higher premature death rate from heart disease than the indigenous population (BHF 2008). Kuppaswamy and Gupta (2005, p.1224) point out that that,

'South Asians are not all the same. Bangladeshis fare the worst from CHD deaths, followed by Pakistanis and lastly Indians.' Overall, statistical evidence demonstrates premature death rates were 46% higher for South Asian men and 51% higher for South Asian women than the general population (BHF 2008). These high mortality rates from CHD amongst this ethnic group living in the UK are incompletely understood but are associated with a complex interplay between genetic and environmental factors (Kuppuswamy and Gupta 2005).

From a biological perspective, multi-factorial genetic inheritance or the complex interaction of multiple genes with their environment has been implicated in the increased South Asian susceptibility to developing CHD, as opposed to other populations (BHF 2004; Tonkin and Rafi 2008). However, these specific genes with their chromosomal loci, and how they interact with their environment in the aetiology of CHD, have not yet been clearly identified in both population sets. However, the Human Genome Project, with its focus on the mapping, analysis and understanding of genes and their role in the production of CHD, may change this present lack of knowledge in the future (Tonkin and Rafi 2008). Present medical knowledge suggests that familial history of CHD remains an important influence in the disease process in both Caucasian and ethnic minority populations (Tonkin and Rafi 2008).

Another possible explanation offered is that the South Asian population is viewed as a disadvantaged socio-economic group with lower incomes, which is linked to higher rates of CHD, in comparison to professional groups who are economically better off (BHF 2004). Conversely, this professional class of South Asians demonstrates lower rates of CHD. In addition, the South Asian population, overall, has higher coronary risk factors with less healthy lifestyle behaviours than the general population (BHF 2004). These include high levels of smoking/chewing tobacco, especially amongst Bangladeshi men, low levels of exercise across all South Asian communities, high blood pressure and those who have a high intake of saturated fat (BHF 2008). This increases total plasma cholesterol levels and the prevalence of hyperlipidaemia, which are important risk factors for developing CHD (Kumar and Clarke 2009). Lastly, two other convincing factors include the higher South Asian prevalence of Diabetes Mellitus and the Metabolic Syndrome (Kuppuswamy and Gupta 2005). The latter disorder includes an accumulation of problems, such as insulin resistance, hypertension, central obesity and hyperlipidaemia. Both Diabetes and the Metabolic Syndrome are known independent risk factors for CHD, both of which demonstrate an increased prevalence in this ethnic group than in the general population (Kuppuswamy and Gupta 2005; BHF 2008).

From a treatment perspective, South Asians are less likely to be prescribed lipid-lowering medication for unclear reasons and are more likely to drop out of CRPs (Ward et al. 2005). This

latter situation is related to language, communication (e.g. lack of interpreters) and cultural barriers that exist between health professionals and patients; lack of information provision regarding the availability of cardiac services by hospital/community staff, particularly on patient discharge and practical difficulties for Asian patients with accessing CRP, for example, lack of transport (Tod et al. 2001). Moreover, South Asian patients are more likely to present with atypical symptoms after an MI, which may delay accurate diagnosis and rapid appropriate treatment (Feder et al. 2002; Shaikh et al. 2005). These health inequalities may be linked to an attitude of not taking full advantage of health service care provision, lack of awareness of CHD and its implications, and the linguistic and cultural barriers seen in this population (Feder et al. 2002; Shaikh et al. 2005).

Mortality rates for CHD show a clear geographical pattern, with generally higher rates in the North of England and in Scotland, intermediate in Northern Ireland and Wales and lowest in the South of England (BHF 2008). This pattern of CHD distribution has been 'dubbed' the north-south divide (BHF 2008). For instance, death rates from heart disease in people under 65 years are almost three times higher in the less affluent areas of Yorkshire than the more affluent areas of East Anglia (JSNAK 2009). Whitehead and Doran (2011) provide more recent evidence of the persistence of the north-south divide in health and wealth in England over the past forty years under five successive governments. There was almost an average of 14% increase in percentage excess deaths (all cause mortality) in the north compared to the south, which has been referred to as the 'northern excess mortality'. Mortality rates were significantly larger for males than for females (14.9% v 12.7%).

Whitehead and Doran (*op. cit.*) suggest that the present coalition government spending cuts and the NHS reforms, organization of care and funding arrangements (the move from primary care trusts to general practice consortiums) may only serve to accentuate the divide. This may occur as GPs, in their new commissioning roles, '*will be hampered by the loss of ability to plan for whole populations in defined geographical areas as a result of the switch from primary care trust to consortia based on registered patients*' (Whitehead and Doran 2011, p.584). Reasons for the 'northern malady' are difficult to fully explain but are related to a complex set of factors, including the interplay between genetics, lifestyle, migration and unemployment patterns. Combine these with social and economic reasons where the north of England is recognized to be less affluent than the south and thus more economically and socially disadvantaged (JSNAK 2009; Whitehead and Doran 2011).

The CHD problem in the Yorkshire & Humber region of the UK

The health profile 'spotlight' now focuses on the Yorkshire and Humber (Y&H) region of the UK. This region consists of West Yorkshire, South Yorkshire, North and East Yorkshire and Northern Lincolnshire. Of particular interest to this study is the county of West Yorkshire, where the local area of Calderdale and Kirklees Primary Care Trusts (C&K-PCTs) are geographically situated.

The population of the Yorkshire and Humber region is over 5 million people (Yorkshire and Humber Health Profile (Y&H Health Profile 2009). Large numbers of people live in big cities and towns (e.g. Leeds, Sheffield, Bradford, York, Hull, Huddersfield, and Halifax etc.) where there are considerable areas of socio-economic deprivation, with smaller numbers of people living in more affluent areas scattered throughout the region. It's important to note that there are a significant number of deprived socio-economic areas situated in rural counties of North Yorkshire, East Riding of Yorkshire and Northern Lincolnshire (Y&H Health Profile 2009).

According to the Y&H Health Profile (2009), the general health of the people in the Y&H region has improved testimony to a decline in All Age All Cause Mortality Rate. Yet, it is unwise to be complacent with this statistic as this mortality trend is above the England average. Interpretations of the Health Profile of the region (*op.cit.*) yields the following points:

- There are social class inequalities that exist within the region between the professional and manual working classes which is associated with socio-economic deprivation. For instance, people's health is better than the national average in the more affluent areas of North Yorkshire, York and East Riding than the worse health experienced by the people living in Hull, Barnsley or Doncaster.
- West Yorkshire (locations such as Bradford, Leeds, Sheffield and Kirklees) possesses the highest proportions of Black and Multi-Ethnic populations (BME) within the Y&H region in terms of Asian or Asian British people – an ethnic group that have an increased susceptibility to CHD.
- Deaths from smoking (reduced from 28% in 2004 to 22% in 2007) and premature mortality rates from CHD and stroke has improved within the Y&H region but still remains worse than the average in England. In other words from 2005 – 2007, the region had the highest proportion of CHD as part of all cardiovascular disease (CVD) deaths of all the Strategic Health Authorities (SHAs) in England.

- Health priorities, *inter alia*, for the Y&H region include tackling obesity by promoting the uptake of physical activity amongst all age groups, especially the young; tackling modifiable CHD risk factors (e.g. unhealthy high cholesterol diets, smoking and hypertension); and the promotion of healthy lifestyle behaviours for all concerned.

Local CHD problem in the Calderdale and Kirklees area

The SF 36 was used as an indicator of general health status in one of the few large locally performed surveys (entitled '*The Current Living In Calderdale and Kirklees*' (CLICK) Survey (2002)), with 9,615 respondents from a large sample of 25,000 adults aged 18 years and over. This general health measure consists of seven items, including role functioning, social functioning, mental health, physical functioning, bodily pain, vitality and general health (McDowell 2006).

The purpose of the survey at that time, with its strength of flexible use and breadth of application, was to provide local data about health and social inequalities for the planning of services to help meet local population needs (CLICK 2002; Polit and Beck 2008). However, the overall response rate (39%) for the postal questionnaire used as a data collection tool (designed around the seven items mentioned in the above SF 36 tool) was regarded as low (CLICK 2002). This may, to a certain extent, have biased the validity of the results. This is a recognized methodological weakness of the use of a postal questionnaire for research purposes (Polit and Beck 2008). Despite this limitation, however, some interesting results were revealed about the health of women and older people (60 years and older) in the local Calderdale and Kirklees population (CLICK 2002):

- Women had worse health than men, which is similar to the national picture.
- Local women under 65 years significantly had worse health than men for role and social functioning, vitality, mental health and pain.
- Older people had worse health than young people in all aspects, but women were significantly worse than men, especially for physical activity, pain, social functioning, vitality and mental health.

The local Kirklees area, with a population of 400,000 people, reflects the national picture in terms of obesity trends in children and adolescents. This is related to over-eating, lack of exercise and a sedentary lifestyle, for example, a youth culture with a propensity of playing computer games

instead of participating in active sport (JSNAK 2009). Promoting physical activity amongst this population is one method to reduce the level of obesity in the local area. On a positive note, physical activity levels seem to be increasing, but still children and young people are not taking sufficient exercise to benefit their health. The least likely group to be active is teenage girls, overweight and obese children and those originating from lower socio-economic backgrounds (JSNAK 2009). Particularly as people get older, lack of physical activity has adverse effects on health vis-à-vis their links with increased prevalence of CHD, stroke and high blood pressure (Ramrakha et al. 2010).

Smoking is a recognized important risk factor for heart disease (Brunner and Suddarth 2010). In the CLICK survey, 18% respondents smoked at least 1 cigarette per day, compared to 27% nationally. Highest rates of smoking behaviour occurred in the 18 – 34 year old group (22% men and 20% women (C&K-PHR 2002)). The lowest rates of smoking were seen in older persons (men 9% and women 12% compared to 16% and 13% nationally). More low-income people aged less than 65 years smoked (30% compared to 32% nationally). The national trend of higher smoking rates is reflected in low-income households found locally (C&K-PHR 2002). A similar picture to the 2002 survey above is painted by a recent health report published from the Kirklees area (JSNAK 2009). This suggests that smoking tobacco is still too high, with 1 in 8 smoking weekly and, at home, close to half of children and young people are exposed to secondary tobacco smoke. In comparative terms, the incidence of smoking is higher in the lower socio-economic groups than the middle income and professional groups (JSNAK 2009).

Similar to the national demographic trend, there is a growing population of older people living within the Kirklees area. In the next decade, it is expected that a significant rise in the over 65s will occur, matched by an even bigger increase in the number of octogenarians (JSNAK 2009). This scenario may invoke potential health problems both at local and national levels in terms of the advent of major long-term chronic conditions such as CHD and Diabetes Mellitus. The latter disease has risen locally by 30% and is a well-known risk factor for the development of atherosclerosis and, consequently, CHD (Longmore et al. 2010). Accordingly, it is imperative to effectively manage, treat and prevent CHD in vulnerable groups across the local geographical area (JSNAK 2009).

Strategies for the management and prevention of CHD

The medical management of the Acute Coronary Syndrome (ACS), especially the 'classical acute MI' (STEMI) and NSTEMI, constitutes a medical emergency where saving time to protect the myocardium from necrotic damage is vital (Longmore et al. 2010). Early and prompt recognition,

diagnosis and treatment of the problem is imperative to re-perfuse the damaged myocardium from the ruptured occlusive thrombo-atherosclerotic lesion. The patient must be admitted to hospital as quickly as possible, where thrombolytic therapy and/or percutaneous transluminal coronary angioplasty (PTCA) (otherwise known as percutaneous coronary intervention (PCI) and/or coronary angioplasty) can begin (Brunner and Suddarth 2010).

Thrombolytic therapy such as intra-venous infusion of Alteplase, a 'clot busting drug', must begin immediately, which is designed to open up occluded vessel(s) to allow oxygenated blood to re-perfuse the damaged myocardium (Longmore et al. 2010). PCI can be used as an alternative to thrombolysis for acute MI and, in this context, it's termed primary angioplasty. This PCI or coronary angioplasty procedure dilates occluded regions in the affected diseased areas of the coronary circulatory system by use of an intra-arterial balloon and the use of a stent defined as an inert mechanical device to keep the artery or arteries patent to blood flow (Kumar and Clarke 2009).

Providing coronary angioplasty is performed quickly after an MI (preferably within the first hour of the 'attack'), the evidence suggests that it surpasses early thrombolysis as a form of treatment (DOH 2008). Thus, current feasibility studies (human and material resources, medical training and costs, availability of specialist centres) are underway by the Department of Health/British Cardiovascular Society to examine the possibilities of rolling out the procedure across the UK (DOH 2008). It should be recognized that about 2 – 3% of patients undergoing coronary angioplasty may require a subsequent coronary artery by-pass graft (CABG). CABG is also used for selected patients with unstable angina pectoris (UAP) due to complications such as 'acute coronary occlusion' (artery closes during the procedure). Therefore, angioplasties are only carried out in highly specialized cardio-thoracic surgical centres. Due to this status quo, primary angioplasty is not yet a treatment option for all patients with an acute MI, but this process may change in the future (Walsh and Crumbie 2007; DOH 2008).

Other important intervention tasks in the medical management of acute MI include symptom control such as opioid analgesia for severe chest pain; oxygen therapy to improve myocardial oxygenation; and anti-emetics for potential nausea and vomiting (Walsh and Crumbie 2007). Further interventions include identification and treatment of potential complications such as potential left ventricular failure (LVF), congestive cardiac failure (CCF) and cardiac arrhythmias by cardiac monitoring (Colledge 2010). It is also necessary to reduce the workload of the heart and the potential formation of thrombi and excess cholesterol formation by appropriate use of drug treatments, often lifelong (Longmore et al. 2010). Preventing the formation of thrombi is performed by long-term administration of drugs such as Aspirin if the patient tolerates it (BNF

2010). This works by the inhibition of platelet aggregation, thus preventing thrombus formation. 'Statin' drug therapy is used for total cholesterol reduction so that blood plasma level is maintained between 4 - 5 mmol/l (BNF 2010), whereas lowering cardiac workload is performed by the use of beta-blockers, which lowers cardiac output, blood pressure and myocardial contractility. Finally, angiotensin-converting enzyme (ACE) inhibitors are used for the prevention and treatment of LVF (BNF 2010).

The National Service Framework for Coronary Heart Disease (NSF for CHD 2000) was published a decade ago with specific objectives to set national standards and define service models in all aspects of the management of CHD. It sets out national standards of care for preventing and treating CHD, it recommends service models enabling efficient delivery of those standards. The NSF identifies early priorities such as the secondary prevention and management of MIs, and, finally, it suggests indicators and clinical audit criteria that can be used to assess the quality of prevention programmes (NSF for CHD 2000). The purpose of the NSF for CHD is to reduce undesirable variations and inconsistencies in service delivery and access at national and local level. It is designed to improve the overall quality of care for CHD, and thereby improve the overall health of the population; this, in effect, contributes to targets set out in Our Healthier Nation. Not only would NSF reduce the burden of CHD, but it was anticipated that it would benefit patients with stroke and other diseases (NSF for CHD 2000).

Overall, the advent of the NSF for CHD was welcomed by the health professions in the UK to help reduce the CHD problem (NSF for CHD 2000; Dalal and Evans 2003). However, from a critical perspective, specific concerns were expressed by some health professionals in primary and secondary care in terms of the large workload schedules associated with the NSF (Weirzbicki and Reynolds 2000; Hippisley-Cox and Pringle 2001). These included the burdens of human, material and financial resources associated with its implementation at national and local level (Weirzbicki and Reynolds 2000; Hippisley-Cox and Pringle 2001). These authors pointed out that the problems and difficulties associated with the NSF for CHD included:

- Increased workload schedules for health professionals, with resource ramifications, included performing more detailed and specific medical/nursing patient assessments (e.g. regular blood pressure monitoring and cholesterol/ lipid profile assays) for patients cardiology problems.
- Difficulties in the design, agreement and implementation of protocols for treatment purposes for CHD (e.g. smoking cessation clinics in primary care, cardiac drug regimes, treatment algorithms in primary and secondary care and adhering to drug budgets).

- Meeting of tight targets dictated by the demands of NSF standards (e.g. one-hour 'door-to-needle-time' (i.e. from the emergency call to receiving professional help) for thrombolysis for the treatment of 'heart attacks'. This has been termed the 'golden hour' treatment to maximize the re-perfusion of blood supply to preserve the heart's myocardium in order to limit physiological damage.
- The time consuming efforts for staff in the construction and carrying out of audit documentation trails to determine whether standards have been met or not.
- And, finally, the call for more widespread coherent CRPs across the UK to promote active rehabilitation and secondary prevention of CHD for coronary patients (Dalal and Evans 2003).

Despite these difficulties and problems above linked to the implementation of the NSF for CHD, the NSF Progress Report (2009) has demonstrated continuing positive coronary care benefits for the UK population. This included meeting the overall target (five years earlier than originally designated by 2010) of reducing mortality rates from CVD for under 75-year-olds by 40%. The CHD mortality rate declined by 44% compared with the 1995 – 97 (NSF Progress Report 2008). According to the report (*op. cit.*), this was achieved by a number of measures and service improvements for the treatment of a 'heart attack', including:

- Earlier delivery of thrombolysis, within a 60-minute emergency call-out, than previous years (2000 AD – 24% of MI patients versus 2008 AD – 70% of MI patients).
- A rise in the prescription of cholesterol-lowering and anti-hypertensive drugs, thus reducing CHD mortality and the yearly incidence of a myocardial infarction (MI).
- Improvements in the waiting times for patients receiving coronary artery bypass graft (CABG) surgery – patients waited no more than three months in 2008 AD v over one year in 2000 AD.
- A decline of smoking prevalence rates among adults from 28% in 1998 to 21% in 2007. Although there is more work to be done in this area, this drop has been achieved by the interplay between health promotion activities in hospital and community with the help of smoking cessation clinics in primary care.

- And, finally, provision of better facilities in terms of refurbished buildings and new cardio-thoracic centres, better services, equipment and technology and more cardiologists (increased by 61% since 2000) for treating patients with CHD (NSF Progress Report 2009).

However, Walker (2005) and Darzi (2008) argue that there is little room for complacency, despite progress being made in reducing CHD. They warn that there are still large social class inequalities in CHD prevalence and disparate regional variations in heart care provision throughout the UK. Moreover, there is a widening gap evident in CHD mortality rates between the rich and poor and among ethnic minority groups at national and local level (Marmot and Elliott 2005). It goes without saying that there is large amount of continuing work to be done in the future to alleviate the CHD problem in the UK. Cardiac rehabilitation is one mechanism in which to do so, particularly as a significant secondary prevention strategy (Bath et al. 2009).

A critique of cardiac rehabilitation: the physical impact of cardiac rehabilitation in 'middle-aged' or 'younger' patients with CHD

The evolution of cardiac rehabilitation services in the UK has been relatively slow and piecemeal up to the 1970s. Indeed, from about the 1930s to mid-1970, the standard treatment for an MI in the UK and US was enforced bed rest from three to six weeks with almost complete physical inactivity. This continued for up to a year where the patient was not medically allowed to perform even mild exercise such as climbing stairs. Cardiac patients received little to no health education regarding cardiac risk factors, no stress management strategies nor dietary advice and no advice on disease management. Basically, the patient became a 'cardiac cripple', becoming non-productive with no return to their workplace or occupational activity (Certo 1985; Thow 2006).

However, innovative researchers in the US, for instance, Levine and Lawn in the late '50s challenged this practice of prolonged enforced inactivity, the 'armchair treatment' of an MI, through pioneering research trials. They pointed out that this '*kind of treatment decreases the patient's functional capacity, saps morale and provokes complications*' (Certo 1985, p.1794). Thus began, slowly at first, a concerted body of scientific knowledge that continues right up to this day about the benefits of comprehensive cardiac rehabilitation and exercise programmes as a valuable, worthwhile and cost-effective strategy for the secondary prevention of CHD (Certo 1985; Thow 2006). Cardiac rehabilitation services are now seen as a rapidly expanding clinical intervention whereby a host of health professionals amalgamate in a bid to make an impact on CHD. In contemporary times, cardiac rehabilitation is endorsed by government and professional health bodies alike and is recognized internationally as a discrete health service body which

improves the patient's health-related outcomes and reduces the risk of cardiovascular events (Bethel et al. 2009; Davidson et al. 2010). Appropriately adapted multi-disciplinary cardiac rehabilitation programmes (CRPs) are particularly well suited to the provision of secondary prevention services for older cardiac patients (Thompson 2009).

It is recognized that CHD may adversely affect all aspects of quality of life (QOL), which include functional incapacity (loss of independence and inability to perform activities of living), physical (pain, dyspnoea, oedema, and fatigue), psychological (depression, anxiety and fear), and social and occupational roles (loss of breadwinner role, unable to return to work and adverse effects on income) (Chan et al. 2004). The overarching purpose of CRP for the post MI/CABG/PCI patient is to enhance a patient's QOL from an holistic perspective (Bethel 2009).

A considerable research base of evidence exists (epidemiological, randomized controlled trials (RCTs) and qualitative methodologies), suggesting that comprehensive cardiac rehabilitation programmes (CRPs) confers a range of physical, psycho-social, and benefits to QOL for 'younger' patients with CHD, namely, middle-aged men, aged roughly between 40 – 55 years (Paffenbarger 1984; Oldridge et al. 1988; O'Connor et al. 1989; Effective Health Care Review 1998; Pasquali et al. 2001; Thow 2006; Wenger 2008; Bethel 2009; Bath et al. 2009).

For instance, a seminal epidemiological study, performed in the mid-80's, suggested that habitual aerobic exercise predicted low CHD risk in a relatively large sample of males in the US context (Paffenbarger et al. 1984). At that time, this publication was one of the first studies to produce relatively robust evidence of the efficacy of aerobic exercise in people with CHD. The findings were obtained from the analysis of 572 'first attacks' of CHD (defined as Angina pectoris and Myocardial Infarction) among almost 17,000 Harvard Alumni students (1962 – 1972) and 1,413 total deaths (1962 to 1978) (Paffenbarger et al. 1984). The sample consisted of men only aged between *'35 – 74 years free from a diagnosis of CHD in 1962 or 1966 who were followed up until 85 years for occurrence of CHD, death from any cause or end of study phase (1972 -1978)'* (Paffenbarger et al. 1984, p.491). They suggested, in this study sample, that physical exercise was beneficial to health and well-being. Exercise reduced the men's desire to smoke cigarette tobacco, reduced obesity levels, controlled blood pressure, and reduced stress and anxiety in this male sample (Paffenbarger et al. 1984). Nevertheless, they stipulated that the frequency and amount of aerobic physical exercise to maximise cardiovascular health in this sample was unclear. These authors observed, among Alumni, that CHD was substantially reduced in those who utilised 2000+ kcal/wk whether walking, climbing, or playing sport. They commented that *'regular sustained exercise for approximately 9 months of the year may be necessary to maintain cardio-vascular health'* (Paffenbarger et al. 1984, p.494). A limitation to this study, acknowledged

by the authors, included the notion that Harvard alumni students were not typical of the US population and thus the results may not be generalisable to them (Paffenbarger et al 1984). Another problematic area of their study (not acknowledged by the authors nor was a rationale provided by them for the exclusion of women) was that these results may not be generalisable to the female population of either the Harvard alumni or to the general population on account of gender bias (Cormack 2000; Polit and Beck 2008)

Subsequently, Paffenbarger et al's (1984) research findings were supported and substantiated by Blair et al. (1989). These authors demonstrated, in a large prospective study {(n = 10,224 healthy men and 3120 healthy women, both groups had no history of CHD at baseline measurements) (age ranged from 20 – 60 or more years, average follow up > 8 yrs)}, that regular high levels of physical exercise 'appeared' to delay all-cause mortality caused by cardiovascular disease and cancer. Conversely, Blair and colleagues (*op. cit.*) suggested that a low level of physical fitness or a sedentary lifestyle was an important risk factor for CHD in both men and women in this study (Blair et al. 1989). However, some limitations exist with this study in the light that it may be difficult to generalize these findings to the wider population due to sampling bias related to non-representativeness (Blair et al. 1989; Polit and Beck 2008). The majority of the people in the sample (70%) derived from '*middle to upper class socio-economic background who had attended university (college) and worked in professional, executive or white-collar positions*' (Blair et al. 1989, p.2395). Not mentioned by Blair et al. (1989), *de facto*, was the problem that 99% of the sample was Caucasian in origin which may have limited the findings of the study to ethnic minority groups (Polit and Beck 2008).

Research work (meta-analyses that examined over 4000 patients from 22 randomized control trials (RCTs) performed in the 1980s indicated that there was a 20 – 25% reduction in all-cause mortality at 3-year follow-ups among patients with an MI who were enrolled on a CRP (Oldridge et al. 1988; O'Connor et al. 1989). Briefly, it is worthwhile casting a 'critical eye' on O'Connor et al.'s (1989) research work as it is regarded as a seminal article frequently quoted in the literature on the effectiveness of cardiac rehabilitation in 'younger' patients (Effective Health Care Review 1998; NSF for CHD 2000; Coats et al. 2003; Thow 2006; Bath 2009; Heran et al. 2011). An overview of 22 trials of rehabilitation with exercise after an MI, involving 4,554 patients, demonstrated a 20% reduction in overall mortality (odds ratio [OR] = 0.80 [0.66, 0.96]) (O'Connor et al. 1989). Most of these trials included men and only four of them included women who constituted only 3% of the randomized subjects. The authors' rationale for the obvious gender bias towards the inclusion of men, an acknowledged limitation of the study due to a lack of generalization of findings to women, was related to a lack of detailed outcome information being available for women in the study, as opposed to for men where detailed information was available

(O'Connor et al. 1989). The trials excluded older people aged from 65 – 70 years, as the focus of the study tended to be 'younger patients'. In the Goteborg trial, 'younger' was defined as patients who were less than 55 years of age, in comparison to the Amsterdam trial where the age ranged from 40 – 55 years. The authors acknowledge that this is another limitation of the study as the analysis is heavily weighted towards men in their fifth and sixth decades of life; thus, the research findings may not be generalisable to older patients beyond 65 years (O'Connor et al. 1989).

O' Connor et al. (1989) stressed in their research work that neither the six 'exercise only' (0.81 [0.60, 1.10]) nor the 15 'exercise plus other interventions' (0.79 [0.62, 1.01]) reached statistical significant levels. The study also reflected a decreased risk of cardiovascular and fatal re-infarction mortality rates which persisted over a 3 - year period post infarction (O'Connor et al. 1989). There was also evidence of a reduction in sudden death during the first year after infarction in the 'exercise plus other interventions' trials. No evidence exists for the reduction of risks of non fatal re-infarctions within this particular study (O'Connor et al. 1989). However, caution needs to be exercised when interpreting the results of this study in view of the relatively small number of 'exercise only' trails. This situation is combined with the possibility that the patients may have had a formal or informal non-exercise component (e.g. health advice or education related to diet and cigarette smoking), which resulted in inconclusive evidence about the independent effects of the physical exercise component of cardiac rehabilitation (O'Connor et al. 1989).

A recent systematic review on the effectiveness of comprehensive cardiac rehabilitation (CCR) conferred a similar mortality benefit to cardiac patients comparable to some of the older research studies mentioned above. Heran et al. (2011) performed a systematic review of 47 studies which randomized 10,794 patients to exercise-based cardiac rehabilitation or usual care. The sample included males and females of all ages who had a diagnosis of MI, CABG, coronary angioplasty or percutaneous coronary intervention (PCI), Angina Pectoris and CHD diagnosed by angiography (Heran et al. 2011). Their findings illustrate the effectiveness of CCR in terms of a reduction in total cardiovascular mortality {RR 0.87 (95% CI 0.75, 0.99)} in medium- to long-term studies. However, CCR did not reduce the risk of total MI, CABG or PCI in the sample studied. In addition, CRR had a positive beneficial effect on the patients' QOL, assessed by existing valid and reliable tools, as there was moderate evidence to indicate an improvement in this health outcome but mainly in middle aged male patients in 7 out of 10 trials reporting QOL outcomes (Heran et al. 2011). The authors acknowledge the review's limitations vis- a-vis their attempts to include more recent trials involving women; the review indicated that the population studied were mainly male, middle-aged (aged 40 – 55 yrs) with low risk of CHD (Heran et al. 2011). Further trials are advocated that addresses QOL outcomes using QOL validated tools in a wider range of

patients, including women that are more representative of the clinical cardiac population who participate in and experience the benefits of cardiac rehabilitation interventions (Heran et al. 2011).

Furthermore, there is strong, consistent and sufficient RCT evidence to demonstrate that comprehensive cardiac rehabilitation (CCR) (with psycho-social support and health education) for 'younger' patients improves functional capacity, psychological well-being, overall quality of life, and improves cardiac risk factors, such as total high cholesterol serum levels and other lipid profiles (Wenger 1995; Ades and Coella 2000; Joliffe et al. 2000; Thow 2006; Wenger 2008; Bath et al. 2009). CCR, with health advice on dietary change (less saturated animal fat, more intake of fruit, vegetables and fish), modified raised blood lipid levels by reducing low density lipoprotein (LDL) cholesterol and serum triglyceride concentrations. These blood lipids, when raised above normal concentrations, are recognized to be potentially harmful in exaggerating atheroma formation (Yoshida et al. 1999; Thow 2006). Simultaneously, CCR tends to raise high density lipoprotein (HDL) cholesterol, which is referred to as 'beneficial' cholesterol as it tends to reduce atheroma formation for the maintenance of health (Yoshida et al. 1999; Thow 2006).

From a physical or physiological perspective, CCR with exercise is known to improve cardio-respiratory fitness levels in 'younger' patients in terms of moderate reductions in blood pressure (BP) and heart rate (HR) with continued exercise and modifications in cardiac risk factors in the longer term (Bath et al. 2009; Colledge et al. 2010; Marieb and Hoehn 2010). This response is linked to reductions in cardiac output and, to some extent, total peripheral resistance which concomitantly reduces BP (Bath et al. 2009; Colledge et al. 2010; Marieb and Hoehn 2010). CCR with exercise assists the improvement of the collateral coronary circulation to the myocardium, thus enhancing myocardial perfusion. It tends to reduce the heart rate (HR) thought to be due to direct effect on the heart's pacemaker (Sino-Atrial Node – SAN) and a reduction in stroke volume (SV) (Colledge et al. 2010; Marieb and Hoehn 2010).

In summary, the practice of cardiac rehabilitation as an important health intervention is advocated at international, national and local levels as an essential form of secondary prevention in order to prevent, delay or alleviate CHD in the population (Ryan et al. 1999; NSF for CHD 2000; Graham 2007; NICE 2007). The continued practice of cardiac rehabilitation is justified by the range of bio-psycho-social benefits that it bestows to patients of all ages, despite the present weight of evidence from clinical trials of its benefits and effectiveness in 'younger middle-aged' males with CHD (Pasquali et al. 2001; Heran et al. 2011).

A critique of cardiac rehabilitation: effects of the intervention on older people with CHD

The benefits of taking regular aerobic exercise, recognized as a key component of a comprehensive CRP, are well established for optimum health and well-being amongst all age groups (Pasquali et al. 2001; Thow 2009; Smeltzer et al. 2010; Van Norman 2010; Heran et al. 2011). Aerobic exercise is defined as moderate activities greater than 30 minutes five times per week, for example, walking, dancing, running or vigorous activities long enough to work up 'a sweat' and to maintain a raised heart rate (JSNAK 2009). Regular aerobic exercise confers a reduction in heart rate and blood pressure and circulating catecholamines (adrenaline-like hormones) (Taylor and Johnson 2008). It reduces weight, increases lean body mass, lowers serum triglycerides, increases HDL to LDL ratio and reduces platelet adhesiveness. A 10% reduction in weight is linked to a reduction in blood pressure and to a 10% fall in total cholesterol and, finally, to a 20 to 25% fall in overall mortality (Thow 2009; Bath 2009; Smeltzer et al. 2010). Exercise improves mental health, helps to prevent osteoporosis, improves balance and so prevents falls and fractures, which is particularly important for older people (Jones and Rose 2005).

Existing literature on older cardiac patients suggests that the benefits of an comprehensive aerobic CRP includes increased muscle strength and mobility, beneficial training effects to the cardio-vascular system (lower cardiac output, blood pressure and heart rate) (Ades et al. 1993; Bondestam et al. 1995; Lavie and Milani 1996; McConnell et al. 2000; Pasquali et al. 2001; Jones and Rose 2005; Thow 2009). Other beneficial effects include improvements in cardiac risk factors, a lower incidence of re-hospitalisation in patients, improved psycho-social wellbeing and overall quality of life as defined by the affected patient (Rydwick et al. 2004; Taylor and Johnson 2008; Bethel 2009). In summary, these findings, with some emanating from observational studies in the North American context, demonstrate clinical value and beneficial outcomes for older patients undertaking a CRP.

However, some methodological limitations exist with the observational studies carried out in older people with CHD (Ades et al. 1993; Bondestam et al. 1995; McConnell and Laubach 1996; Rydwick et al. 2004). The CRP findings in these studies may have been biased, to some extent, by the use of mixed samples comparing outcomes in older and younger patients (*vis-a-vis* not comparing *'like with like'*) and the lack of randomization used in the sampling techniques (Ades et al. 1993; Bondestam et al. 1995; McConnell and Laubach 1996; Pasquali et al. 2001; Rydwick et al. 2004). Lack of randomization, *per se*, tends to invoke potential bias which may influence research results (Cormack 2000).

Moreover, it is difficult to compare results of the effects of cardiac rehabilitation interventions between younger and older cardiac patients on the basis of these observational studies (Ades et al. 1993; Bondestam et al. 1995; McConnell and Laubach 1996; Pasquali et al. 2001; Rydwik et al. 2004). Some of the reasons for this *status quo* are related to both the different definitions used by the authors of what it meant to be 'old, older, or aged' and to the higher prevalence of co-morbidity in older people due to age-related physiological changes compared to younger patients (Ades et al. 1993; Bondestam et al. 1995; McConnell and Laubach 1996; Pasquali et al. 2001; Rydwik et al. 2004). Study findings of the beneficial effects of cardiac rehabilitation have been extrapolated (derived mainly from randomized controlled trials (RCTs) in middle-aged male populations with an MI) to older people with CHD (Pasquali et al. 2001; Rydwik et al. 2004). This situation is linked to a lack of a controlled clinical trial evidence-base of the efficacy of cardiac rehabilitation in older people whereas, in contrast, this kind of evidence is plentiful in younger patients, especially men, with CHD (Pasquali et al. 2001; Rydwik et al. 2004). Even though there are some definitional and methodological difficulties associated with the evaluative benefits of cardiac rehabilitation (CR) interventions in older people with CHD, it is still plausible to suggest that CR benefits (evident in younger patient populations with CHD) might generally transfer across to older patient populations with heart disease (Pasquali et al. 2001; Rydwik et al. 2004).

The NSF for CHD (2000, p.2 and p.14) stipulated that one of the national standards (standard twelve) for the secondary prevention of an MI was that '*NHS Trusts should possess a structured programme of cardiac rehabilitation offered to 85% of patients with an MI/CABG which included an exercise regime and which consisted of appropriately qualified multi-disciplinary cardiac health care professionals*'. The goal of this strategy, where possible, was to arrest, alleviate or reduce subsequent re-occurrences of CHD, tackle the individual patient's cardiac risk factors and promote his/her return to a full, active and normal life. However, there is a lack of detailed attention given to the process of cardiac rehabilitation in the NSF for CHD Progress Report in 2008 AD, nor did they comment on the findings in a similar report produced by the Healthcare Commission in 2004. The latter report acknowledged the limitations of heart care provision for patients with CHD with gaps in discharge follow up care. The commission discovered, from a postal questionnaire (75% response rate) from a large sample of over 2,000 patients originating from a third of acute trusts in England (n = 4000) who had had a heart attack or angioplasty, that they had not taken part in any formal cardiac rehabilitation programme. Over one third of the same sample were not on a regular programme for a heart check-up or follow up care by their GP or hospital physician (Kmietowicz 2005). These circumstances do not appear to fully comply with the national standard of the offer of cardiac rehabilitation for all those patients with an MI/CABG initially set out by the NSF for CHD in 2000.

Another limitation associated with CRPs has been the health care personnel's tendency to exclude under-represented groups, such as the older, women and minority ethnic groups (Thompson 2009; Davidson et al. 2010). Older cardiac patients, in contrast to younger patients, are not always actively encouraged by health professionals to participate in CRPs, despite evidence of their beneficial effects. These include enhanced subjective well-being, psychological status, lowered anxiety and better QOL outcomes. These are useful clinical outcomes beneficial to older cardiac patients (Marchionni et al. 2003; Joliffe et al. 2009). It is acknowledged that limited exercise capacity is linked to impaired cardiac function and disorders of the musculoskeletal system (e.g. lack of mobility due to osteoarthritis) compounded by other co-morbid disorders (e.g. hypertension) associated with age-related physiological decline (Van Norman 2010). Some older patients are not referred by GPs or cardiologists to CRPs on the grounds of perceived frailty related to 'being old' (Rees et al. 2005). Perhaps, lack of referral of older patients to CRPs is related, in some way, as to whom the CRPs were aimed at in the past. Historically, they were constructed to meet the needs of white Caucasian middle aged men who suffered an MI based on the premise that they had a higher prevalence of CHD than other groups (Thow 2009). However, this higher prevalence rate for CHD in men does not apply so easily to older cardiac patients as a group as CHD tends to increase exponentially with advancing age (Thow 2009).

Cardiac surgery (CABG) is a recognized treatment to eliminate and/or alleviate patient symptoms such as chest pain. It prolongs life expectancy, enhances well-being and QOL and promotes independence in activities of living (Wilson et al. 2005). Older surgical patients of 65 years and beyond tended to be excluded from rehabilitation, possibly based on the clinical belief of the perceived non-beneficial aspects of rehabilitation and exercise regimes (Wilson et al. 2005). As a result, minority groups who also required cardiac rehabilitation were wittingly or unwittingly ignored, despite further evidence from systematic reviews that exercised-based CRPs conferred benefits to women, older, ethnic minority groups and surgical patients (SIGN 2002; Joliffe et al. 2009).

In addition to the predicament of the under-represented groups in cardiac rehabilitation (CR), the National Audit of Cardiac Rehabilitation (NACR) (2007) points out that uptake of cardiac rehabilitation by patients generally is less than satisfactory at national level. From a large national sample of cardiac patients with an MI/CABG/PCI (n = 19,369), reasons provided by patients for non-attendance were: not interested (33%), physical incapacity (15%), too ill and ongoing investigation (11%), too far to travel and return to work (6%) (Thompson and Clarke 2009). In addition, people who continue to smoke tobacco post cardiac event, (a self-selected group who tend not to perform well in terms of beneficial outcomes on CRP's vs. non-smokers) and CRPs

that are poorly structured or administered, especially if they consist of high intensity exercise regimes, are associated with poor attendance (Jolly et al. 2003). The latter is linked to socio-economic factors, such as a deprived background with low income, poor educational attainment, lack of spouse/partner involvement and perceived lack of control over their cardiac condition (Thompson and Clarke 2009). Lastly, other factors which contribute to non-adherence at CRPs include transportation and travel problems, lack of belief in the effectiveness of CRP, lack of motivation to exercise – especially amongst women – and the higher prevalence of depression in women vs. men after a coronary event (Thompson and Clarke 2009; Beckie et al. 2011).

Depressive symptoms interfere with behavioural drive and motivation, which are important qualities to maximize lifestyle change at CRPs (Beckie et al. 2011). Although the psychosomatic mechanisms for the links between depression and CHD are not always clear, Whooley et al. (2008) argued {(study sample (n = 1017, male sex, No % with depression 152 (76))} that depression in younger women (mean age 63 years) was associated with physical inactivity, smoking, non-compliance with medication regimes and a higher mean body mass index. In addition, women were more inclined to suffer from more co-morbid conditions than men, which included history of an MI, heart failure and diabetes mellitus (Whooley et al. 2008).

Health professionals and policy-makers need to be aware of these potential problems in relation to CRP and attempt to provide solutions and strategies. This could take the form of tackling patient de-motivation and co-morbidities, educating patients about the value and benefits of CRPs (Bethel et al. 2009). CRPs need to be a routine part of the cardiac patient's pathway or journey through the NHS and require endorsement by health professionals, such as GP's/hospital physicians, as an evidence-based effective ongoing treatment process (Bethel et al. 2009). Cardiac health professionals need to develop innovative referral systems to help maximize patient attendance at CRPs (Thow 2009). In the researcher's local hospital, patient enrolment on to a programme is not optional and is seen as a necessary part of the treatment protocol prescribed by the cardiologist. Patient choice of dropping out early from the programme is optional but is combined with an informal exit interview by staff to establish reason(s) for early departure from this important part of the treatment process.

Flexible home based rehabilitation programmes should be constructed and tailored to meet individual patient needs to enhance patient participation (Bethel et al. 2009). On the other hand, in a bid to avoid painting a rather 'jaundiced view' of patient attendance at CRP's, the majority of patients participated fully in the programme at the researcher's local hospital. Here, they learnt about changing their lifestyles for the better, learnt about the importance of sustained exercise regimes and about tackling their individual cardiac risk factors. These cardiac patients became

more physically fit with concomitant cardio-vascular advantages (e.g. lowered blood pressure). As a whole, the cardiac patients 'voiced' that the local CRP enhanced their subjective well-being, health status and improved their QOL.

In summary, this chapter has examined the overall clinical aspects of CHD, including pathogenesis, cardiac risk factors, and the prevalence of the disorder at national and local level in the UK. A critical examination of cardiac rehabilitation took place with its usage amongst younger and older patients with CHD and, finally, the management and prevention of CHD was addressed. The next chapter continues with the literature review and critically examines the important concept of quality of life (QOL). It will also analyse how it is perceived, defined and measured by health care professionals, on the one hand, and, most importantly, how the concept is also perceived by those cardiac patients who 'own, define and live with their quality of life'.

CHAPTER 3: QUALITY OF LIFE (QOL)

The literature review search strategy and introduction

Using a similar strategy to the previous chapter, the literature review search (1980 to 2011 AD with the one exception of Foucault's classical work on *'The Birth of the Clinic'*, first published in the English language in 1973) continued into the following chapter to address the notion of QOL from a comprehensive critical perspective. Search items entered into the 'Summon' search engine included the use of a wide range of key concepts, for instance: quality of life; quality-of-life; health-related quality of life (HR-QOL); quality of life in older patients; health measurement scales and health outcomes measurement. Apart from the above, other search terms used included: health, healing and religion; functional status; empowerment: health promotion and ageing and ageing, and so forth (see summary table, appendix II). Refining the search on QOL, with relevant inclusion and exclusion criteria, was addressed in chapter two (see p. 25 - 27).

The clinical perspective of CHD and the use of CRPs as a treatment option, as previously discussed in chapter two, are closely linked to the cardiac patient's QOL and health status in view of how they interplay and influence each other. QOL is an important patient outcome measure to consider in CHD in order to determine how both the disease process and cardiac health care interventions (e.g. CRPs) impact on the older patient's overall QOL. Improving this outcome hastens patient recovery from illness and maximizes their rehabilitation from their cardiac event (MI/CABG/PCI). In view of this context, the purpose of the final chapter in this literature review is to critically examine conceptual and methodological issues attached to the concept of QOL and QOL measurement tools from a general perspective. This discussion will be followed by a critique of selected QOL tools (Generic, Disease Specific and Patient Generated Outcome Measures), and their applications to older cardiac patients with CHD. Firstly, an outline of the concept of QOL will be located within its philosophical and historical roots.

Quality of life (QOL): outline of the historical context

In the classical philosophy text of *'Nicomachean Ethics'*, Aristotle equated the 'nature of happiness' or the modern term 'quality of life' with the pursuit of the 'good life'. Good life activities, and /or possession of virtuous dispositions, were ultimately concerned with upholding ethical principles and performing moral acts of rectitude throughout life's journey:

“Our task is to become good ‘men’ or to achieve the highest human good. That good is happiness whereby happiness is an activity of the soul in accordance with virtues such as the pursuit of courage, morality, generosity and justice and intellectual virtues such as knowledge and wisdom.”
(Barnes 2004 cites Aristotle (384 - 322 BC): p. xviii)

Aristotle introduces the Greek concept of ‘*eudaimonia*’, which essentially means ‘happiness’. He conceives that there is no consensus on the definition of happiness and the concept and its method of achievement means different things to different people:

“But when it comes to speaking of what happiness consists of, opinions differ..... Some (people) associate it with the pursuit of pleasure or money or eminence Others say when he/she falls ill that it is his/her health that matters; and, finally, when a person is ‘hard up’ that it is money that brings him/her happiness.”
(Barnes 2004 cites Aristotle (384 - 322 BC): p.7)

Aristotle’s own conception is that the ‘*eudaimonist*’ finds happiness in the pursuit of the doctrine of the greatest moral good in life. Happiness, in this context, is not equated to pleasure, because constant succession of the latter would constitute what Aristotle views as a ‘bovine existence’. He links happiness with contemplation (‘*theoria*’), which he doesn’t clearly define, but it seems to be associated with lifelong physical and intellectual activity, possession of wisdom, virtuous conduct and philosophical reflection. For Aristotle, happiness is more than a general state of mind. It says something about how a man/woman lives and what he/she does. The notion is also connected to self-fulfilment and success, and the realisation of one’s aims and ambitions (Barnes et al. 2004).

A contrasting view of Aristotle’s ‘good life’ emerged in the US in the 60’s and 70’s where the concept took on the broader mantle of interpretation in terms of the related idea – ‘quality of life’ (QOL). Here, it was associated with macro-societal indicators in terms of the economic well being of whole populations (Rapley 2003). QOL involved use of level of education, type of housing and neighbourhood, quality of living standards and, to a wider extent, quality of life in different geographical regions of the same country or that which exists between different countries or continents (Rapley 2003).

Finn and Sarangi assert that at this macro-level perspective, QOL was becoming politicised in western cultures in terms of developments of social and health programmes and as an ‘abstract’ indicator of social progress, health policy and modernisation of people’s lives: they emphasised that the concept of QOL had arrived and was here to stay:

“QOL and the attempted objectification of life itself lay at the heart of a political refashioning of life circumstances, lifestyles, and conduct that were seen best reflect the socially oriented image of the advanced, prosperous civilisation.”
(Finn and Sarangi 2008, p.1570)

From roughly the 1970's to current times, QOL has grown to ubiquitous and global proportions and has switched emphasis from the macro-socio-political perspective to the 'micro-individualist-psychological' approach (Haas 1999; Finn and Sarangi 2008). This individualistic approach involves subjective reaction to life's experiences, including well-being, happiness and satisfaction and the application of quality of life to health and well-being (health-related quality of life) (Rapley 2003). This author points out that the notion of QOL is widespread within health, medical and social science literature, which invokes controversies, contradictions, fragmentation of opinions and ambiguities. These concepts are attached to QOL's definitions, understanding, conceptual frameworks and its different methods of measurement. In medical and health care literature, there seems to be as many QOL measurement tools as there are medical specialities for different diseases (Rapley 2003).

Quality of life (QOL): rationale and origins in health care

Sustained growth in the measurement of health outcomes (e.g. the linkage between health and QOL) is testimony to the increasing demands by society, government and the health care professions to quantify clinical outcomes and to evaluate the effectiveness of health services and health care interventions (Rapley 2003; Garster et al. 2009). Over the last two decades, in western societies, the growth in the health outcomes movement has been driven by the socio-economic and political pressure of finite health care resources, the quest for cost-effective care and the rise of the evidence-based medicine (McDuff 2000; Bowling 2005; Garster et al. 2009).

Advances in medical treatments and technological developments, combined with better nutrition, healthier environments, reductions in communicable diseases and peri-natal mortality rates, have served to increase life expectancy in the population (Marmot and Elliott 2005; McDowell 2006; Osmond 2010). It has been asserted by McDowell (*op. cit.*) that these advances in technological and social phenomena have come with a mixed blessing, which implicitly seems to beg a rhetorical question: '*what about the quality of that life?*' People want to 'live' and not just merely 'survive'. This controversial subject of QOL in relation to 'survival' is hotly debated in such health circles as artificial life support, cardio-pulmonary resuscitation decisions, cancer care and euthanasia (McDowell 2006). In essence, this continuing debate about QOL and survival in these circumstances can be summarised by the aphorism attributed to Abraham Lincoln (in his presidential role in America (1861–1865) related to the emancipation of the slaves in the American Civil war): '*it is not just about adding years to life but also adding life to years*' (Brody 1998, p.8).

A compelling need exists within the medical profession, especially the modern healthcare regime, to look beyond the narrower boundary of the 'biology of disease, the bio-medical model' in terms

of the profession's focus on pathological processes, mortality and morbidity outcomes (Armstrong et al. 2007). In this respect, Foucault (1973) launches a scathing 'attack' on the growth of medicine as a professional discipline in his seminal work *'The Birth of the Clinic'*. He sees the historical developments of the medical profession as being rooted in discourses of the 'clinical gaze'. This reflects not only their strong emphasis on closely scrutinizing the physical body and pathological processes but also extends to the wider meaning of the social construction of their power knowledge (*'pouvoir-saviour'*) ideology base, with its inherent vested self interests, prestige and privileges (Foucault 1973).

From the clinical perspective, Foucault (1973, pp.2 -10) argues that the *'patient becomes objectified in terms of the localization of disease, its signs and symptoms as it occupies space within the human body and undergoes metamorphosis and metastases'*. Foucault alludes to medicine's narrow perspective of the 'personification' of the 'patho-physiological lesion' to the exclusion of the 'patient's personhood' ('whole person'). In the researcher's opinion, this might be described as the 'lesion becoming the patient'. In such circumstances, the goal of medicine now preoccupies itself with the 'gaze' (ways of seeing, knowing and analysing) in terms of diagnosis, meticulous physical examination of the patient, pathology tests, causation of disease, treatment and curative processes. With such 'medical tunnel vision' focused on the patient's 'physicality' through the subordinating power of the gaze as it successfully inculcates patient docility, medicine tends to ignore the patient's subjectivity in terms of personality and psychology, culture and social context, belief and value systems. Additionally, and most importantly, the patient's perception and experience of illness/sickness and requisite treatment processes are overlooked (Peerson 1995).

For Foucault, power and knowledge is inextricably intertwined where power is needed for the production of knowledge while knowledge is required for the exercise of power (Cheek and Porter 1997). Unlike a Marxist conception of power operating between the bourgeoisie and the proletariat, Foucault rejects the notion that it is hierarchical being driven from a top down approach where those with power oppress those without power. For him, it operates within all social networks and within all levels of society. Here, medicine, as an organised professional discipline, is a good exemplar of a social network or institution that holds a strong power-knowledge base (Cheek and Porter 1997).

However, in terms of balancing the Foucauldian ideology of power and knowledge, it could be argued that the modern health care movement is attempting to shift it away from medicine towards the patient (Healthy Ambitions 2008). At least, current health policy attempts to share the power-knowledge base more equally between the modern patient and the modern doctor (Darzi Report 2008). These changes are implicitly evident in the current social, political, economic and

physical environment. Under these circumstances, the patient is invited to change their lifestyle, to take self responsibility for their own health status, QOL and to usher in the concepts of expert patient and self empowerment (Petersen 1994; NSF for CHD 2001; NSF Older Patient 2002; Darzi Report 2008). However, it has been contested that over-emphasis and focus on a person's responsibility for their own health and lifestyle tends to absolve, to a greater or lesser extent, government responsibility for the health of the nation in terms of costly state and welfare service interventions (Finn and Sarangi 2008). Moreover, it can be argued that this individualistic approach tends to ignore the wider socio-economic determinants of health and health inequalities that exists in the UK population which arguably exists beyond the individual person's power and control (Bilton et al. 2002).

The movement towards the broader horizons of QOL represents another example of a change of direction away from the medical model of disease or disentanglement from the shackles of the medical model (Armstrong et al. 2007). This relatively new and wider view locates health, illness and QOL within the holistic social world of the patient. This falls within the realms of social and personal meanings in contrast to the traditional location of health and illness within biological realms (Armstrong et al. 2007). He states that:

*"QOL measurement increasingly detaches patient symptoms from their pathological anchor and locates them in the social world of the patient...
.....thus, QOL measurement has given symptoms a new and extended meaning and has consolidated the patient's self report as central component in the definition of health and illness."
(Armstrong et al 2007, p.581)*

Quality of Life (QOL): definitions

In health care environments, QOL is a familiar concept which is often discussed by professional staff and patients in relation to serious disease, terminal illnesses and various types of other physical or psychological disabilities affecting patients. Most people seem to intuitively know the general meaning of QOL but, in reality, attention to specific definitional aspects has been neglected, ignored or simply taken for granted (Philips 2006).

McDowell (2006) and Philips (2006) point out that QOL is mentioned as part of everyday language and is widely used in different contexts and for different purposes. This familiarity of the term may have unwittingly diverted people away from a close definition, as everyone knows what it means to be 'better off or worse off'. These definitions of 'well-off' more often reflected the preferential definitions of academic researchers rather than an objective attempt to define the nature of QOL (Carr and Higginson 2001; McDowell 2006). This led to a huge growth in what may

be termed 'imaginary' QOL measures which reflected a striking resemblance to functional disability measures, measures of general health status, emotional well-being and life satisfaction scales (Carr and Higginson 2001; McDowell 2006). Moreover, there seems to be no clear definitional distinction between concepts related to QOL, such as well-being, happiness, morale or life satisfaction. It is useful to point out that QOL is seen as a broad ranging subjective concept that incorporates aspects of the above notions and whose definitions may shift with changing personal psycho-social or material circumstances (McDowell 2006; Finn and Sarangi 2008).

QOL is a difficult concept to define, which is similar to Aristotle's notion of the 'good life' and the related concept of 'happiness'. According to Rapley (2003), three broad theoretical and often contentious debates of QOL are hypothesized in relation to the 'good life'. Firstly, hedonist theory puts forward the idea that human beings are motivated by the pursuit of happiness, enjoyment, desires and pleasure. Secondly, preference satisfaction models advocate the pursuit of satisfaction and preferences in life as people generally getting what they want with a minimum number of unsatisfied wants. Finally, ideal theory calls for neither enjoyment nor personal preferences but the satisfaction of normative ideals. There is considerable overlap between this triad of theories and, consequently, they are not mutually exclusive (Rapley 2003).

As a concept, QOL is subjective, elusive, value laden, amorphous and abstract (Rapley 2003). It means different things to different people. It could best be defined by 'what the individual says it is', depending on their own unique social, psychological, socioeconomic, demographic and cultural factors underlined by their own expectations and experiences (Campbell and Whyte 1999). This is compatible to the individualist approach to definitions and measurement of QOL as described by Joyce in 1999. In a similar fashion, but with a different application, this 'individualist definitional approach' reflects the difficulty that pain researchers have when defining the intangible concept of pain. In this respect, they consistently use McCaffery's (1983, p.59) classical attempt when he suggests that '*pain is what the experiencing person says it is, existing when it does*'.

Despite the difficulty in defining the concept of QOL, one 'loosely' accepted general definition is that it refers to the gap between our expectations of QOL and our experiences of it (Carr et al. 2001). In other words, there is a discrepancy between our expectations and our experiences. A similar definition is that QOL is the extent to which hopes and ambitions are matched by experience. This general definition of the concept exists in medical, behavioural and the social science literature (Carr et al. 2001). This type of definition corresponds to the gap theory of QOL developed in the 1980s where it is regarded as the difference between one's present life circumstances and a standard to which one compared oneself. However, this definition of QOL is

problematic, as comparison referents are innumerable in terms of 'what one has versus the ideal' (Haas 1998).

Carr et al. (2001, p.1358) provide an interesting 'wide-angled' definition of QOL, ranging from the macro to the micro-perspective. They suggest that the concept rests on an '*individual's perception of their context, culture and the societal value systems in which they live and how these constructs are interpreted in relation to the individuals goals, expectations, standards and concerns*'. Lastly, the World Health Organization (WHO) (1993) considers that the 'broad umbrella' concept of QOL is influenced by a person's physical health, emotional state, social relationships, level of independence, and available facilities and facilities within the environment.

Quality of life (QOL), health and patient empowerment

QOL is a complex multi-faceted concept which is closely linked to health (Ahmed and Khalek 2010). QOL is recognized by some researchers to consist of a number of broad domains, which includes the bio-psycho-social aspects of health and other 'non-medical' aspects of life (Bowling 2001; Garratt et al. 2002; Rapley 2003; Ahmed and Khalek 2010). The latter includes income, material well being, housing, family relations, religion and quality of the environment (Bowling 2001; Garratt et al. 2002; Ahmed and Khalek 2010). The inclusion here of 'non-medical aspects of life' usefully broadens the definition of QOL in contrast to limiting it to the narrower concept of health or health-related quality of life (HR-QOL). In contrast, other researchers view health as the most significant part of QOL where physical function, psychological well-being, subjective symptoms and social and cognitive function occupy the major components of health-related QOL instruments (Nemeth 2006). This link between health and QOL raises another problematic definition and this is in reference to health (Morall 2009). In other words, what is this notion of 'health'? It is plausible to purport that if a person suffers from physical or psychological sickness/illness and/or social upheaval (e.g. loss of employment), either minor or major in nature, it can have a negative impact, transiently or permanently, on that person's 'health' and overall QOL.

Similar to QOL, health is not an easy concept to define as it is 'slippery' in nature with a variety of meanings (Morall 2009). Bowling (2001) and Garratt et al. (2002) perceive that health and QOL are not synonymous concepts, but rather, the two notions are inextricably linked. In the widest sense, both health and QOL are associated with physical, psychological, social and spiritual dimensions of life (Kuhn 1999; Morall 2009; Hawton 2011). Medicine, with its mechanistic preoccupation with physicality, disease and illness, defines health as the '*absence of physical or biochemical abnormality in the body's organs and systems or where they exist in a state of*

“normality or homeostatic equilibrium” (Blaxter 2010 p.4 - 7). From the bio-medical perspective, any disturbance in ‘normal health’ is identified by a sophisticated array of physiological tests based on the functioning of biological systems (Blaxter 2010). These include biochemical assays of bodily fluids, a host of investigative tests and other medical diagnostic technologies, such as CT / MRI scans. Thus, the bio-medical approach paves the way for more attention being paid to the disease process than to health (Blaxter 2010). It is interesting to note that, generally, lay definitions of health similarly reflect medicine’s conception when the public define health in surveys as ‘*health is not being ill, health is having no disease*’ (Morrall 2009, Blaxter 2010, p.4). This general lay ideology and definition of health may be related to medicine’s dominant discourse and power differential above other social groups and their subsequent ‘medicalisation of health’ in society (Bilton et al. 2002).

However, Blaxter (*op.cit.*) and Morrall (*op.cit.*) point out that this bio-medical definition of health is problematic when one asks what is ‘normal’ (with a great range of variability), for whom and for what, and in what context? Is it based on the mean or average value for the individual or population (ethnic or Caucasian or both)? (Blaxter 2010). Medical science needs to completely understand what is ‘normal’ before it can hope to understand abnormality and disease (Morrall 2009). Here, he seems to implicitly allude to a rhetorical question: is there yet a sufficient body of medical knowledge about *all* the physiological (*normal*) factors that control cell growth in the hope that, one day, medicine might cure malignant forms of cancer? The basic tenets of Morrall’s (2009, p.49) argument is to denote that there are ‘*considerable uncertainties about what is ‘normal’ and therefore what is ‘abnormal’ in medical practice*’.

Briefly, it is worth comparing psychological and physical health/ill-health in the light of the bio-medical model. It might be argued that this definitional problem of ‘health/normality’ applies, in particular, to the difficulties of what is defined as ‘normal’ in relation to the medical diagnosis of psychiatric/psychological illnesses e.g. Schizophrenia. Blaxter (2010) argues that this disorder is an example of ‘mental ill-health’ which is characterized by a lack of clear measurable physiological phenomena, yet is still diagnosed ‘loosely’ on bio-medical criteria. It is worth contrasting this scenario to the presence of a ‘relatively clear’ physical disorder such as the proverbial ‘heart attack’ (MI). This disease process is more easily definable and measurable by the use of objective physiological parameters as a good example of ‘physical ill-health’ comparative to ‘psychological ill-health’ such as Schizophrenia or other mental illnesses.

Health is not just associated with physical and psychological dimensions but has also social determinants. Morrall (2009) contests, that it has long been recognized, that health and the social environment are linked. He argues that historically, filth, squalor, bad sanitation, contaminated

water/food and dark/damp environments were associated with poor health, disease illness and infection. Socio-economic deprivation, in relation to people who live and work in socially deprived areas, is still associated with ill health in contemporary times (Marmot 2005; Morrall 2009). Conversely, people who live and work in affluent areas are associated with better health outcomes in terms of lower mortality rates than the socially disadvantaged. For example, people who derive from the professional classes live, on average, 5 – 7 years longer than those from the working class (Marmot 2005; Morrall 2009).

Moreover, health has a subjective dimension which is not solely based on objective measurable clinical signs of ill health or disease. Subjectively, it is based on the premise of the patient's '*perception of the experience of symptoms or feelings of illness*' (Blaxter 2010, p.6). An incongruity may exist between the objective signs of health/illness and the subjective descriptions of it from the person's perspective (Morrall 2009). For example, if a person is wheelchair-bound, is that person objectively ill or suffers from poor health? This same person generally might subjectively say when asked, 'I am not ill, even though I am permanently wheelchair-bound; I am mobile, I am able to perform my activities of living, I enjoy my hobbies and I have a good overall QOL.'

Blaxter (2010) embraces the notion of the relatively ubiquitous World Health Organization's (WHO 1946) definition of health, which reflects an holistic or social model approach to the concept. In light of this, health is defined as a '*complete physical, mental and social well-being, and not merely the absence of disease or infirmity*'. The definition has been criticized on the grounds of what is meant by 'complete physical, mental and social well-being? How are these concepts measured or achieved? Does it reflect a utopian idea of health embracing the whole of human existence rather than the practical reality of the way people experience health and illness in their daily lives? (Blaxter 2010). This author contends that this definition is an attempt to move away from the reductionist disease oriented bio-medical model of health and disease. It tilts towards a broader definition of health that takes into account the bio-psycho-social and spiritual needs of the whole person (Blaxter 2010). This approach to health echoes the rise of complementary therapies and current approaches to the public health movement in the UK (Blaxter 2010). Though conceivably difficult tasks to achieve, the aims of these approaches are to attempt to alter people's environment (healthier places to live in) and/or their behaviors (via education and health promotion strategies) so that people are empowered to learn about healthier lifestyles (Blaxter 2010).

Empowerment is an active, dynamic and enabling concept (Hage 2005). The concept has diverse usages in so far that it tends to denote a great deal of human activity from consumer power,

military power, girl power, political power, and professional power (Nytanga and Dann 2002). Literally, the concept of empowerment is defined as: the prefix 'em' means 'to provide with' and the Latin verb 'potere' means 'to be able' (Nytanga and Dann 2002). According to these authors, empowerment may be defined as a:

“Process and an outcome involving the individuals’ or groups’ ability to pull from within themselves, the power to influence or control significant events in their lives. The ultimate goal of empowerment is well-being” (Nytanga and Dann 2002, p.235).

From an historical perspective, empowerment is viewed as an individual or group reaction towards inequality, social injustice and oppression in society which was prevalent in the US civil rights movement in the 60's and the women's liberation movement (Hage 2005). This group of people decided to empower themselves to protest strongly against oppressive or unjust social regimes who made a deliberate and conscious decision to enable themselves to stand up and 'fight' for their rights politically, socially, economically and morally (Hage 2005). Empowerment portrays the person as striving for control over the important aspects of their lives where, in this instance, the concept of health is crucial (Hage 2005). It invites democratic participation, growth and development, and personal responsibility and competence for health (Hage 2005). It involves a person's dealings and interactions with the health care system, including active decision-making processes and the formation of healthy choices in terms of managing 'chronicity', of which coronary heart disease is a typical example. In the NHS health care system, empowerment, in the guise of expert patient programmes, patient forums and patient and public involvement groups, represents patient involvement in health and disease management. Hage (2005) suggests that patient empowerment mechanisms and contexts symbolize a shift of power relations away from the 'era of the professionals' towards the 'era of the patient', which is a cardinal notion in government health policy documents over the past decade. This is exemplified in Winterton's statement in a recent White Paper from the Department of Health, as she aptly states:

“To create a truly patient-led service centred around the needs of both individuals and communities, it is essential that we create a stronger national voice and offer more choice for patients, service users and citizens at all levels of the health and social care system we are committed to empowering citizens to give them more confidence and more opportunities to influence public services in meaningful and relevant ways.”
(Winterton 2006, p.3)

From a contentious perspective, one poses the following question, given the scenario of a lay professional relationship with the existence a power differential between them in terms of professional dominance and lay subservience (Paterson 2001), 'can patients be "truly" regarded as equal partners as health professionals in decision making and participation in health or chronic

disease management under the empowerment model?' The evidence points in the direction of a negative answer in Paterson's (2001) work, entitled '*The Myth of Empowerment in Chronic Illness*'. This Canadian qualitative study was performed on small sample of 22 patients with chronic diabetes using data collection tools of participant audio-taped recordings of their own decision making processes followed by practitioner interviews to clarify meanings of patient empowerment. The results suggested that when health professionals attempted to promote equal partnership and decision-making amongst this patient group in the management of this chronic condition "*the outcome can be a delegitimization of a patient's ability to participate as an active partner in decisions about care*" (Paterson 2001, p.574).

The majority of patient participants in this study felt that the notion of a shift of empowerment from practitioner to patient in the guise of equal partnerships was essentially a myth:

"A good buzz word, where it is really hard to do, where practitioners discounted the experiential knowledge of patients who lived with the disease and they did not provide the resources (information, time and money) necessary for someone with chronic illness to make informed decisions."
(Paterson 2001, p.577)

However, it may be difficult to generalize or extrapolate Paterson's (*op. cit.*) findings to other patients with different chronic illnesses, for example, CHD. This is related to the study's small sample size, the subjective nature of the study, the biases inherent in the convenience sample used and the possible different population characteristics and health care systems that may exist between Canadian and UK societies (Polit and Beck 2008).

In summary, the holistic model of health represents an attempt, by the interactions of professional groups, government agencies and society, to locate health, QOL and patient empowerment within a social context or, as Armstrong et al. (2007, p.581) put it: '*to locate them within the social world of the patient*'. Within the holistic context of health and QOL, it is worthwhile to briefly discuss the links between QOL, health and spirituality/religion in the subsequent section.

An outline: quality of life (QOL), health and spirituality/religion

For some individuals, groups and populations, the notions of spirituality and/or religion are important components to their physical, psychological and social health and to their overall QOL in states of health, illness or disease (Hassed 2008). In terms of definition and meaning, the two concepts overlap but they are not necessarily synonymous (Hassed 2008). Spirituality is regarded as a broader concept than religion on the grounds that religious beliefs and practices

can be expressions of spirituality but spirituality can exist apart from religion (Koenig 2004). Spirituality is an abstract concept and difficult to define, but is recognized to be multi-dimensional in nature (Coyle 2002). It is defined in a way in which people seek and search for meaning and purpose in their lives where they pursue a sense of connectedness beyond the self, perhaps with the use of a moral compass or righteousness to guide them on life's path (Coyle 2002; Hassed 2008). This may or may not involve a belief in 'God', another supernatural being, a deity or a higher power (Koenig 2004; Dobratz 2005). Religion, on the other hand, has been defined as participation in practices, beliefs, attitudes or sentiments that are associated with an organized community of faith or an accepted formalized system of belief and practices (Matthews et al. 1998). This usually involves a belief in 'God' or some other supernatural being and attendance at a religious public gathering and/ or at a recognized religious institution e.g. a mosque or a church (Dobratz 2005).

How useful is the notion of religion/spirituality to people? It tends to offer practical comfort/ help to people and becomes a means of soothing them in times of personal or professional 'trouble', problems or inner turmoil (Hassed 2008). Some people seek emotional solace in religion/spirituality to help them cope when their bio-psycho-social health and overall QOL when threatened by illness or disease (Curlin et al. 2007). For other people, religion/spirituality provides emotional comfort at any time in their lives and this includes their experiences of joy and sadness alongside their experiences of good health, well-being and sickness/disease as they journey through life.

Possessing a spirituality/religious dimension to one's life positively influences people's mental, emotional and social health (Matthews 1998). Though the underlying psycho-physiological mechanisms are unclear, practice of spirituality/religion is associated with a reduced incidence of clinical depression and a faster recovery from this emotional disorder after major surgery (Matthews 1998). Such benefit may lay in the notion that 'prayer' (a personal communication between an individual and 'their God') is perceived as a coping mechanism (Saudi et al. 1991; Walton and Sullivan 2004). This practice offers a person hope, re-assurance, resilience and inner strength in times of need and great uncertainty. This applies particularly to those people who are seriously ill and face adversity in Intensive Care Units (ICUs) in hospitals e.g. those facing open heart surgeries, survivors of mechanical ventilation and serious forms of cancer (Camp 1996; Arslanin-Engoren and Scott 2003; Walton and Sullivan 2004). Moreover, religion/spirituality practice is associated with greater social support through increased professional, patient and family interactions (Matthews 1998). The interplay of the psychosomatic beneficial influences cited above with the practice (personal or public) of religion/spirituality goes some way to explaining some of the subsequent physical benefits for these people. For instance, a nine year

population study in the US testified to a reduction in all cause mortality with an increase in life expectancy (from 75 – 82 years) for those who regularly attended church. When lifestyle and social variables of the sample were taken into account, it could not fully explain these findings (Hummer et al. 1999; Clark et al. 1999).

A problematic area in relation to spirituality/religion is how to meet the diverse needs of patients, by whom and with what resources (Grant et al. 2010). Does this responsibility belong to the role of the hospital chaplain/multi-faith members solely or a member of the health care team – nurses, doctors or physiotherapists, and so forth? Alternatively, should the issue be left to the individual patient and family and not involve any of the multidisciplinary team, or should meeting these needs be a shared role and responsibility? What human, material or geographical resources (provision of place and space) are needed to meet the patient's needs in this arena? Lastly, what guidelines exist and what education and training are required to assist the multi-disciplinary health care team to meet the patient's spiritual/religion needs? (Grant et al. 2010). Many of these questions have not been fully answered, either with a lack of professional consensus or under continuing debate. However, these authors point out that a patientcentred approach is necessary by members of the health care team where awareness, caring and sensitivity around spiritual/religion issues (together with effective communication and/or referral systems (e.g. keen professional listening skills), often assists the older patient and family towards a better QOL in this domain of healthcare (Grant et al. 2010).

An outline: QOL and ageing

Ageing is related to physiological, genetic, biochemical, and cellular changes of the body's cells, organs and systems (Taylor and Johnson 2008). Over time, the ageing process is responsible for interrupting, disturbing or interfering with homeostasis {(i.e. the delicate stability of the 'internal environment' (extra-cellular fluid (ECF))}, that is normally responsible for the maintenance of people's physical health (Marieb 2010). However, ageing is recognized to be more than just a physiological process (Taylor and Johnson 2008). Ageing is a complex-interactive phenomenon and multi-factorial in nature. It is manifested by a combination of physical/genetic, environmental and lifestyle factors and subjective and psycho-social factors (Taylor and Johnson 2008; Gross 2010).

'Age, ageing and old age' are nebulous concepts and thus difficult to define (Taylor and Johnson 2008). At what point does a person become old: is it a maturational or developmental process throughout life's course? Or is it chronologically related to the later years in a person's life, or is it associated with decline or a process of positive growth? (Gross 2010). Depending on one's

perspective and definitions of age, aging and old age, it has implications for how QOL is perceived and defined with this group – either a negative or positive perception. Negative stereotypes of ageing are associated with the decrement model, which views the concept as a process of decay and decline, with a loss of physical and psychological capacity, intellectual decline and loss of professional roles and social relationships (Gross 2010). In contrast, the lifespan approach views ageing as a time of positive change, personal growth and adaptation to the later phase of a person's life (Gross 2010). This is associated with increased leisure time due to retirement, self-fulfillment, time for grand-parenting roles, and other significant areas of life based on that person's choice and priority (Gross 2010). This view of the older person's QOL is, therefore, positive, where choice, autonomy and independence are emphasized.

Quality of life (QOL) of older people

Bond and Corner (2004) and Borglin (2005) suggest, within the existing literature on QOL of older people, that there seems to be a lack of information as regards the meaning of the concept from their own perspective. Others support this view in so far that, generally, measurement tools stem from the perceptions and aspirations of the researcher rather than the older person's lay view (Carr and Higginson 2001). Alternatively, the majority of QOL tools, which are quantitative in origin, are devised mainly for younger adults and thus may not capture key themes that are important to older people (Farquahar 1995; Haywood 2005). Puts et al. (2007) suggest that the older person's QOL is a much broader concept than the narrow inclusion of both health status and functional capacity. It also consists of social functioning, future expectation and well-being, feelings of safety and living conditions, grand-parenting and family and social relationships (Puts et al. 2007). In order to increase the validity of research findings in the field of gerontology, it is important to include the older person's perceptions of QOL, as its meaning varies according to the individual's expectations and experiences (Borglin 2005).

From the perspectives of social gerontology, sociology, and social policy, QOL of older people have been examined in the following study, where the researchers incorporated older people's views, perceptions and meanings that they attached to the quality of their lives (Walker and Hennessy 2004). In 2004, a national-based quantitative survey was carried out on a relatively large sample of healthy older people (999 people aged 65 – 80 years), consisting of men and women living at home in Britain. The survey asked older people about the quality of their lives and how that quality could be improved. Out of the same sample of 80 patients, divided equally amongst the sexes, follow-up in-depth interviews about their perceptions of their quality of lives were also performed. The results of this mixed methods study, based on this lay model view of QOL, yielded the following results (Walker and Hennessy 2004, p.17-18):

- *“Good social support and resources is important to older people in terms of maintaining and building relationships with family, friends and neighbours. Caring for grand-children is a particularly important notion to them which added meaning to their lives.*
- *Good psychological and physical health was important to enable them to perform their activities of living. A positive psychological outlook or attitude with realistic goals and aspirations together with relative independence, autonomy and control over one’s life was considered important.*
- *A safe respectable neighbourhood with a good home, good facilities and a good transport system was deemed valuable to a relatively good quality of life.*
- *Adequate income and financial circumstances was considered important ‘not just to survive but to live’.*
- *Performing activities or hobbies e.g. going on holidays or partaking in voluntary work or engaged in some other meaningful social role prevented loneliness and isolation.”*
(Walker and Hennessy 2004, p.17-18)

From this study, Walker and Hennessey (2004) demonstrated that definitions of QOL for older people are a dynamic interaction between the older person and the environment in relation to sound personal, social and financial balance. It includes their good physical and psychological health and the maintenance of close ties and relationships with their family, friends and significant others (Walker and Hennessy 2004). They raise an interesting point, that in order to deepen an understanding of the QOL of older people, that we need to move beyond a QOL model that is not just limited to health and functional status alone (Walker and Hennessy 2004). A possible limitation of their research work is that the findings of the study may not be transferable to the understanding of QOL of black and ethnic minority groups, as the vast majority of the sample consisted of Caucasians (98%) (Polit and Beck 2008). However, their results are compatible with other research studies, where avoidance of disease and disability, effective medical care and preservation of cognitive and physical functioning were important facets of health ageing (Westerhof et al. 2001). This included the older person’s engagement in social activities and healthy family relations, income and possessing a car ('gives a person freedom') were all dimensions of successful adaptation to the ageing process (Westerhof et al. 2001). Walker and Hennessy’s (2004) research findings have largely been supported by Gabriel and Bowling’s (2004) research work entitled ‘*Quality of Life from the Perspectives of Older People*’.

This study reported on the results from a British National Survey (England and Scotland) that examined the concept of QOL of 999 people aged 65 years or more living in private households. Out of this relatively large sample, qualitative in-depth interviews were performed on 80 older people (40 males and 40 females) to explore their subjective views and perspectives, meanings and understandings that they attached to their QOL. Common themes seemed to congregate broadly around the physical, psychological, social and financial domains of QOL. These were couched in Gabriel and Bowling's words, which included the following eight themes:

“Social relationships with family, friends and neighbours, home and neighbourhood, psychological well-being and outlook, social activities and hobbies (communal and solo), health, financial circumstances and independence.”

(Gabriel and Bowling's 2004, p.679 - 689)

The author's inferences concerning the physical domain of QOL included:

- A good physical QOL was associated with maintaining independence by being physically active and busy; possessing good physical health and mobility e.g. walking; carrying out everyday chores and tasks e.g. shopping; carrying out activities of living; being able to function to help themselves and others (Gabriel and Bowling 2004). Conversely, declining physical health with poor mobility and loss of independence adversely affected the older person's QOL. All in all, possession of good (*physical, psychological and social*) health was perceived as one's wealth. Conversely, poor (*physical*) health was closely linked to a poor quality of life (Gabriel and Bowling 2004).
- 'Keeping busy and active' was also perceived to enhance the psychological domain of the older person's QOL in embracing a variety of experiences and avoidance of boredom. Here, older people referred to the individualistic nature of QOL, which was evident in the following words from some of the respondents in the study: 'QOL is *what you make it, you can't buy it, or inherit it, or anything like that.*' (Gabriel and Bowling 2004, p.684) Other important notions included: a positive mental attitude and philosophy to life; having some control and autonomy over life events in so far as possible; receiving emotional support from family, friends and significant others in times of need prevented loneliness; good coping strategies e.g. not worrying unnecessarily about the future; accepting one's lot to face the adverse effects of ageing e.g. loss of health, mobility, or bereavement and 'taking each day as it comes and getting on' with the business of living (Gabriel and Bowling 2004). Conversely, negative psychological feelings and emotions impacted negatively on older people's QOL e.g. fear of loss of good health, fear of losing close family and friends, fear of ageing and dependency and,

finally, loss of independence with depression and unhappiness (Gabriel and Bowling 2004).

- From a social perspective, possession of good personal, family and social relationships were perceived to be important for maintaining a good QOL. Spending good quality time with their spouse/partner, adult children and grand-children was seen as important notions (Gabriel and Bowling 2004). Pursuing social activities (communal or solo), whether taking holidays, engaging with individual hobbies, or carrying out voluntary work (e.g. church activities) was perceived as participating in society and possessing social worth and value beyond retirement (Gabriel and Bowling 2004). This was exemplified when some of the respondents referred to '*Involvement in some form of social activity, especially voluntary work where you can help others, gives you value and self-worth where you are able to give something good back to society*' (Gabriel and Bowling, p. 685). Obtaining pleasure from their own homes was also perceived to be important to older people. Living in a safe neighbourhood with good resources, facilities and private or public transport was deemed important to a good QOL. This was enhanced by having good neighbours who offered support and practical help when required (Gabriel and Bowling 2004). Conversely, negative aspects of QOL were experienced when older people felt responsible for a family member's poor health and when their adult children encountered relationship problems. Examples included marital disharmony and broken relationships, loss of family and friends through disease and death and/or when they migrated from the locality, which could lead to the experience of loneliness and social isolation on behalf of the older person (Gabriel and Bowling 2004).
- From an economic perspective, having sufficient money to meet basic needs and to pay for holidays, running a car, and paying household utility bills was deemed important to a good QOL for older people (Gabriel and Bowling 2004). For some older people, possessing sufficient money empowered and enabled them to be independent 'to do the things they wanted to do' without worrying excessively about the consequences (Gabriel and Bowling 2004). Conversely, not having sufficient money curtailed their QOL; for example, those people who relied solely on the state pension found it difficult to make ends meet. Some older people were upset when they could not afford to decorate the home or to buy in resources to enable them to be more independent when they experienced a decline in health e.g. domestic help, adaptations to the home to facilitate independence (adjustable bed, bathing facilities) (Gabriel and Bowling 2004).

The main findings emphasised the multi-dimensional nature of QOL and the different definitions and meanings that older people possess about the concept (Gabriel and Bowling 2004).The

authors acknowledge the dynamic and the interactive nature of QOL between people, their environment and social structures. Older people's perspectives of the domains of QOL living in their own homes are perceived as overlapping notions (Gabriel and Bowling 2004). In this context, they create and shape their own unique subjective definitions and meanings of the concept at wider levels other than the narrower domains of health and functional status (Gabriel and Bowling 2004). These findings are important for public policy, social policy-makers and gerontologists outside the field of nursing and the health care arena in order to more deeply understand the complex nature of QOL from older people's perspectives. Moreover, the study underlines the importance of the older people's inclusion in the definition, construction and interpretation of what QOL means to them (Gabriel and Bowling 2004).

The authors acknowledged some of the limitations of the study as they implicitly caution readers about the representativeness of the sample (Gabriel and Bowling 2004). Their findings provide insight and understanding into older people's perspectives of QOL who live in their own private homes in England and Scotland. Their results may not be transferable to QOL of older people who live in nursing homes, who are hospital-based, or who live in residential care as they were excluded from the study. The authors point out that under these circumstances, QOL may differ amongst this group of people (Gabriel and Bowling 2004). Moreover, no information was given by the authors as to the inclusion of black and ethnic minority groups living in their own homes. If the reader assumes that this population was excluded, then the results of their study may not transfer to this group of people (Gabriel and Bowling 2004; Polit and Beck 2008). Finally, it is interesting to note that the concepts of religion and/or spirituality, perceived by some people as an important domain associated with a good QOL, was not addressed in this study (Matthews 1998; Curlin et al. 2007; Hassed 2008).

Bond and Corner's (2004)'s work on *'Quality of life and Older People'* derives from their particular perspective of social gerontological research and research in health and social care. Their work focuses on the influences that continuous personal and social change has on the lives, experiences and expectations of older people. They offer a critical approach to the *'conceptualisation and measurement of QOL in social gerontology and how the concept is used by social science researchers in studying ageing'* (Bond and Corner 2004, p.2). Their critical approach examines QOL in the context of later life from a range of theoretical perspectives, including social, behavioural, health and social gerontology e.g. socio-psychological theories, political economic perspectives, feminist theory, social constructionist and post-modernist theoretical frameworks (Bond and Corner 2004).

Bond and Corner (2004, p.2) argue that the usage of QOL from a social science perspective tends to have a relatively wide application in terms of the *'built, physical and socio-economic*

environments including the subjective meanings and experiences of QOL for the individual person'. In particular, Bond and Corner (2004) are interested in the way older people conceive, define and talk about their QOL and how these perspectives of the concept may or may not differ from younger people and from 'experts', for instance, policymakers, professionals, researchers and social scientists.

Bond and Corner (2004) largely agree with many other researchers, academics and relevant scholars in the field of QOL research in the light that QOL is an abstract concept notoriously difficult to define (Rapley 2003; Walker and Hennessy 2004; Borglin 2005; Philips 2006). They speculate like others, that there is little consensus or agreement amongst researchers as to how to define and measure the concept which is evident from their following statement: *'Different studies have used widely different definitions and methods of assessing QOL'* (Bond and Corner 2004, p.4).

Because of the difficulties associated with the definitional aspects of the elusive concept of QOL in any age of the life course, including later life, it is fraught with conceptual, theoretical and methodological problems when attempting to measure or assess QOL (Bond and Corner 2004). In the health care arena, they make reference to the dominant positivistic medical model of measurement and quantification of QOL with their preoccupation with their search for 'objective scientific truths' about, what could be contested, as the largely qualitative and subjective concept of QOL (Bond and Corner 2004). In this respect, the bio-medical model may not capture the definitional and measurement aspects of QOL that is important and valuable to older people, particularly if medical conceptions, definitions, and assessments of QOL derive mainly from their own 'expert' perspectives (Bond and Corner 2004). This approach strikes an interesting contrast to the 'lay' perspective of QOL, where their views and perceptions may differ to 'expert opinion'. The notion of QOL 'may exist in the eye of the beholder' in the context of the social world of older people, as expounded by the individualistic approach to the study of QOL (Rapley 2003; Bond and Corner 2004). The 'lay' perspective of QOL is recognized to be an increasingly popular approach in contemporary studies on the subjective aspects of QOL. This situation is reflected in the recent developments of 'Patient Reported Outcome Measurements' (PROMs) and the involvement of the individual in both the definitional aspects of QOL and the design of QOL instruments (Rapley 2003; Acquadro et al. 2003; Valderas et al. 2008; Sevinc and Akyol; 2010).

Bond and Corner (2004) note that QOL has become a huge growth industry in modern health care systems on a global scale (e.g. numerous websites, books, journals, professional and international QOL societies), where they infer, from their arguments, that 'there are as many QOL tools in existence as there are diseases' (Rapley 2003). These QOL tools, instruments or measures consist mainly of questionnaires or questionnaires with interviews, possess varying

levels of rigour or robustness in their design, structure, and intrinsic psychometric properties e.g. validity, reliability, responsiveness (sensitivity), response shift, suitability, clinical application and administration (Bond and Corner 2004).

Bond and Corner (2004) broadly suggest that the definition of QOL depends on whose perspective or point of view is of interest, whether it is a lay or professional/academic ('expert') view of the concept. For instance, different academic/professional disciplines have different definitions of QOL and means of measurement (from either global, multi-dimensional (component) and focused definitions), which largely reflects their interest in their respective academic subject area in the social sciences and/or their academic /professional interest in health and social care disciplines (Bond and Corner 2004). They stipulate, in their offer of a working definition of QOL, that it is a *'relative concept rooted in the historical, economic, and social context in which they are situated and will be influenced by individual life experience'* (Bond and Corner 2004, p.9). They hold similar views to Hughes' (1990) conception of QOL in the way that it is *'multi-dimensional in nature with no clear or fixed boundaries'* (Bond and Corner 2004, p.5).

Bond and Corner (2004) suggest that the lay definition of QOL, derived directly from the older person's perspective, differs amongst individuals as they have different experiences and expectations of life, possess different personalities and biographies, and who are moulded and shaped by different cultures, age and gender differences, socio-economic backgrounds and social and physical environments. Yet, despite the previous statement, some non-exhaustive common core components of QOL exist from the older person's viewpoint. Some of these components include good health (mental and physical); good family relations (e.g. partner/adult children/grandchildren); mobility, independence, autonomy, good social relations (recreation/hobbies); good neighbourhood; possession of sufficient money and material resources to enjoy life (Farquahar 1995; Gabriel and Bowling 2004; Walker and Hennessy 2004); and, finally, for some older people, practising their religion/spirituality/worship is an important facet for experiencing a good QOL (Bond and Corner 2004). Similar to these researchers' work on QOL, Bond and Corner (*op.cit.*), (*using an adapted version of Hughes' (1990) QOL framework*), constructed the following eight domains associated with a good quality QOL for older people:

- *“Subjective satisfaction (global QOL as assessed by the individual older person.)*

- *Physical environmental factors (standards of housing, 'home environment' (Farquahar 1995) or institutional living arrangements, control over physical environment, access to facilities e.g. shops, public transport, and leisure.)*

- Social environmental factors (family, social networks and support, levels of recreational activity (hobbies), contact with statutory and voluntary organisations, social integration – purpose in life, belonging to a community.)
- Cultural factors (age, gender, ethnic group, class, and religious/spiritual well-being. It is useful and noteworthy to see this latter concept receive attention with Bond's and Corner's (2004) work on the components of QOL (Curlin et al. 2007). Religion and spiritual well-being was omitted as a component or domain of QOL in Gabriel's and Bowling's (2004) work.
- Health status factors (physical well-being, mobility, functional ability, and mental health.)
- Personality factors (psychological well-being, morale, life satisfaction and happiness, self esteem, sense of self and identity.)
- Personal autonomy factors (ability to make choices, exercising control, independence and negotiate one's own environment.)
- Socio-economic factors (material circumstances, income and wealth, nutrition and overall standard of living.)”
(Bond and Corner 2004, p.6; Corner et al. 2006, p.78)

Bond and Corner (2004, p.8) value both the lay and the expert definitions of QOL as they make reference 'to taking the perspective of the other'. However, they make the point that emphasis should be placed on the lay perspectives of the definitional and component aspects of QOL over the experts' views, as QOL is rooted in dynamic personal and social structures and remains a concept that is a highly subjective. They highlight this position by quoting George and Bearon (1980, p.1):

“On the whole, social scientists have failed to provide consistent and concise definitions of quality of life. The task is indeed problematic, for definitions of quality of life are largely a matter of personal or group preferences; different people value different things”.

However, from a societal perspective, Bond and Corner (2004) are careful not to ignore or discount the expert views of QOL (e.g. policy-makers, academics, researchers, scientists, social gerontologists and professionals) as some of these people, at various levels, are responsible for resource allocation and provide important insights and perspective of studies in QOL of older people. Thus, Bond and Corner (2004) seem to accept and settle for the dual combination of lay

and expert perspectives, definitions, and constituents of QOL. In unison, these two perspectives provide valuable and useful insights which continue to give rise to an increasing breadth and depth of knowledge and understanding of QOL of older people. The current interest, scrutiny and critical examination of the QOL of older people should be seen against the background of the exponential growth of this specific population in society who frequently use health and social care resources (Bond and Corner 2004).

Bond and Corner (2004) argue that none of the theoretical perspectives mentioned above on their own can hope to give a full comprehensive understanding of the complex nature of QOL and older people. Bond and Corner (2004) calls for the advent of an integrated approach concerning lay and expert perspectives to help understand the dynamic nature of the individual's QOL in later life in the context of the changing socio-political, technological, and economic circumstances of modern society. Thus, Bond and Corner (2004, p.104) call for a coherent account of QOL that encompasses *'the diversity of lay explanations of QOL drawing on a range of theoretical perspectives originating from the disciplines of psychology, sociology, anthropology, health and social gerontology'*. In line with these arguments, Bond and Corner (2004, p.104) have constructed their own useful *'theoretical account or schematic framework on the understanding of QOL and older people'*. The framework consists of a series of overlapping 'elements' which include:

- *"Structural change (socio-economic, political systems, social, cultural and technological change, social order),*
- *Economic change and consumerism,*
- *Self-identity and QOL,*
- *The lived experience along the life course."*

(Bond and Corner 2004, p.104 -108)

Bond and Corner (2004, p.104) suggest that a *'major challenge to our understanding of quality of life is the dynamic and interactive nature of most of the elements captured in the model'*. It may be argued that their opinion could be extended to any framework or conceptual model that attempts to understand and capture the complex nature of QOL of older people or, indeed, to understanding QOL in any other age group.

Kane et al.'s (2003, p.243) research work on QOL is associated with nursing home residents from forty nursing homes in five states in America, namely, California, Florida, Minnesota, New Jersey and New York. Over 70% of the sample was aged 81 years and over and consisted of both genders (Kane et al. 2003) Generally, they suggest that resident life experiences in nursing

homes *can* be mundane and regimental, ritualistic and dull with a lack of structured stimulating activities to enhance QOL and/or to promote resident autonomy and independence, privacy and well-being. In this respect, they argue that health care providers are challenged to monitor and to evaluate QOL in the best interest of nursing home residents (Kane et al. 2003). They suggest that the ultimate goal of quality nursing care in nursing homes is to improve the QOL of the residents. They perceive that the concepts of QOL and quality of care are inextricably linked. In relation to this idea, they state that '*the distinction between quality of care and QOL is spurious because the former contributes to the latter*' (Kane et al. 2003).

They point out that the psycho-social aspects of QOL of nursing home residents has not been measured on a wide scale and there seems to be a lack of suitable measures to capture or assess QOL in this population. To this end, Kane et al. (2003) developed QOL measures that accounted for the psycho-social domains of the resident's QOL. They used a relatively large sample of 1988 residents, many of whom suffered from cognitive impairment as a result of Alzheimer's disease. Data collection tools included the use of QOL interviews to develop QOL scales (resident self-reports) and the use of a Likert scale. The scale was used on seventy-two QOL items (resident-generated) and consisted of a four-point response format, with the choice of '*often, sometimes, rarely or never*'. When the interviewers thought it necessary, the scale was shortened or restricted to dichotomous or binary responses e.g. choice of '*mostly yes or mostly no*'. The researcher's rationale for shortening the responses on the Likert scale, when necessary, depended on the resident's mental capacity or cognitive ability to respond to the interview due to their degree of cognitive impairment. The quantitative data generated in the development of their QOL measures was analysed by descriptive and inferential statistical methods.

US nursing home regulators, for instance, the Institute of Medicine (1986), possess expectations and regulations about the provision of quality care which contribute to the experience of a good QOL for nursing home residents. These include the provision of individualised nursing care to meet individual needs, preferences or choices; provision of a homely and friendly environment; provision of quality health and nursing care; possession of personal belongings; structured activities and programmes that heightens stimulation and personal interests; and the QOL domains of the preservation of dignity, privacy, choice and individuality (Institute of Medicine 1986; Kane et al. 2003).

Kane et al. (2003) perceive that QOL is a highly subjective concept inherently belonging to and reported by the individual who experiences their own QOL. Kane et al.'s (2003, p.240) perception of QOL is reflected in their belief that QOL belongs to the individual person. They say '*that*

residents should appraise their own lived experiences which should be an integral part of QOL assessments, thus, resident self-reports are the gold standard for residents QOL'.

Excluding the domains of '*emotional health and functional status*' from their QOL measures on the grounds of being outside of the scope of their study and that self-report measures for these domains already exist in the literature, Kane et al. (2003) identified 11 domains pertinent to the QOL of nursing home residents. These domains included (which they claimed were non-exhaustive) the following:

"Comfort, functional competence (i.e. cognitive or physical abilities – excludes performing activities of daily living (ADLs); autonomy (i.e. self-governance and independence); dignity; privacy; individuality (i.e. exercising choice and control); meaningful activity (excludes ADLs); relationships (i.e. residents, staff, family and friends); enjoyment (food); security (i.e. safety, order or predictability); and spiritual well-being."

(Kane et al. 2003, p.241)

Kane et al. (2003, p. 246) acknowledge that their constructed QOL measures may not fully embrace the totality of QOL of nursing home residents as '*measures of affect or emotional health, functional status, and self-perceived health*' were omitted from their study. They advocate that these latter measures should be included with their QOL measures to produce a more comprehensive picture of QOL in this specific population.

Another limitation to the study was the lack of test-retest reliability studies performed on their QOL measures (Kane et al. 2003). Therefore, it is not clear whether their constructed QOL measures produce consistent, reliable or repeatable results over time (Polit and Beck 2008). Moreover, their results cannot be generalised nationally to all nursing homes in the US due to sampling issues (Kane et al. 2003). This is related to the researchers possessing a small 'short-stay nursing home sample' in their study. The QOL in this group of residents may differ from long-stay residents or from those residents undergoing rehabilitation or from, perhaps, those residents admitted to nursing homes close to death (Kane et al. 2003).

The study's findings suggest that it is possible to measure QOL by 'self-report' in most of the nursing home population, including patients with cognitive impairment. The researchers were able to construct numerical QOL scores from large numbers of very old residents. They recommend that further work is needed to test and to refine the psychometric properties of the QOL measures that they developed e.g. reliability studies. Kane et al.'s (2003) research work has ramifications for 'nursing home regulatory bodies, continuous quality improvement in nursing home

environments concerning the quality of care and the quality of life of nursing home residents, and finally, for further QOL research in the nursing home context’.

Tester et al.’s (2004) research work related, firstly, to an examination of QOL of frail older people living in institutional care or care homes and, secondly, to determine ways that may contribute to their experiences of a good QOL as identified and reported by frail older people themselves. Against the background of society’s tendency to negatively stereotype older people, frail older people, in the context of this study, were defined as those with ‘*severe mental and or physical conditions who are nearing the end of their lives*’. (Tester et al. 2004, p.209). The frail older people in this study were in a process of a six-month transition to institutional care. Previous research on QOL of older people in this transitional phase demonstrated their need to form new attachments and friendships and to be allowed sufficient time to develop psychological resources in terms of developing personal coping strategies to adapt to this major life change (Lieberman 1991; Oldham and Quilgars 1999). For some older people, the move to residential/institutional or hostel care was perceived positively in terms of enhanced physical, cognitive and social functioning but not their mental health (Reberger et al. 1999).

Tester et al. (2004) used a qualitative methodology, underpinned by a symbolic interactionist theoretical framework, to tackle the subjective notion of QOL as directly reported by frail older people themselves. The latter notion of ‘self-report’ on QOL is a relatively rare occurrence in QOL research with this group or older people (Tester et al. 2004). They view QOL as an inherent subjective property of the individual influenced by both internal and external sources, for instance, different life experiences, biographies, personalities, and different social circumstances. In harmony with these notions, QOL was defined as ‘*the dynamic interaction between the external conditions of an individual’s life and the internal perceptions of those conditions*’ (Browne et al. 1994, p.235). In addition, Tester et al. (2004) suggest that QOL is a multidimensional concept consisting of physical, psychological (emotional), social, cultural, spiritual and environmental dimensions.

Using an ethnographic approach, they used a range of qualitative data collection tools tailored to different types of frailty to collect data on QOL from frail older people who suffered from diverse types of physical and/or psychological health problems. For instance, 24 people had a medical diagnosis of Dementia out of a total sample of 52 (Tester et al. 2004). Data collection methods included naturalistic observations in four settings, six focus group interviews, observations and interviews with 52 individuals, (41 women and 11 men, age range from the 65 – 69 age group to 95 to 99) who had moved into care homes in the previous six months (Tester et al. 2004). Some of the methods utilised were deemed innovative in this kind of QOL research e.g. the use of

'Talking Mats' designed to facilitate communication, conversations and interactions with older frail people who had communication difficulties (Tester et al. 2004).

Findings from the study suggest that QOL of frail older people tends to aggregate around four component parts: '*Sense of self, the care environment, relationships and activities*'. The importance of '*being oneself*' in these four components was considered by frail older people to be a key positive element of their QOL (Tester et al. 2004, p.212). Older frail people had different reactions and individual ways of maintaining '*being oneself*' in the care homes. 'A sense of self' consisted of a diverse range of reactions, emotions and feelings e.g. recognition of individual strengths; assertiveness; type of individual personality; resignation to residing in the care home; expressions of anger and frustration for some people; pride in physical appearance and dress; self-respect; choice of different levels of privacy; feeling 'at home' in the care home, and the episodic experience of peace and quiet (Tester et al. 2004).

Concerning frail older people, a range of factors influenced QOL either in positive or negative ways (Tester et al. 2004). These included the cultural and structural contexts of the home; gender, class and ethnicity; spiritual well-being; individual responses to frailty; continuities and discontinuities; control, autonomy and independence; relationships (with other residents – mostly positive but some had negative effects on a person's QOL; relationships with family, friends, adult children – for some, transition to a care home prevented social isolation); care staff responses to the frail older person's emotional needs and the process of verbal and non-verbal communication mechanisms (Tester et al. 2004). Communication was perceived to be a key structural component of a frail older person's QOL. Verbal and non-verbal communication was perceived to be important for self-expression and meeting individual needs. Communication was necessary for the formation of meaningful experiences, important for participating in structured activities in the home, for the maintenance of 'being oneself', and to be able to maintain social interactions and relationships with family, friends, relatives and residents (Tester et al. 2004).

In conclusion, frail older people experience different degrees of continuities and discontinuities (with positive and negative effects of QOL depending on the person) in being able to be themselves in their transition and adaptation to life in the care homes. Frail older people use a range of individual strategies in the process of adaptation, such as having a friend, making complaints, distancing themselves for others, adapting to their environment (Tester et al. 2004).

Some limitations to the study exist. The findings of this study may not be transferable to a national sample of institutional care homes in the UK on the grounds of the small number of institutions used in this study (two health boards in Scotland and one trust in Bradford) and

because of the small sample size of frail older people (n = 52) (Polit and Beck 2008). Moreover, Tester et al.'s (2004) results may not be transferable to a wider population of men on the grounds of gender bias as most of the study sample consisted of women (41 women v 11 men) (Polit and Beck 2008).

This research work has implications for policy makers, professionals, practitioners and service providers and for researchers and academics. This study supplements and extends knowledge and understanding of QOL from the perspectives of frail older people (Tester et al. 2003). Care home regulators and policy makers need to take account of the perspectives of QOL as reported by frail older people. They may need to become aware of their own assumptions and possible biases about what they think defines and constitutes QOL which may or may not match frail older people's perceptions (Tester et al. 2004). Older people need to be enabled and allowed to express their own preferences and how they perceive their own QOL (Tester et al. 2004).

The study has practice implications for care staff or professionals who provide care in these settings. In light of this, Tester et al. (2003) suggest that practitioners can foster a good QOL for frail older people through maintaining a sense of self and the use of effective verbal and non verbal communication skills (personal and use of technology) (e.g. use of Talking Mats). Care staff should be encouraged to foster healthy relationships amongst all relevant parties, and, finally, to provide meaningful activities and interactions among frail older people and significant others for the sake of experiencing a good QOL in all care home environments (Tester et al. 2004).

It is worth noting that people of different ages have different lay conceptions of well-being and QOL (Westerhof et al 2001). Older adults' (60 – 90 years) judgements of QOL referred to life satisfaction in terms of a healthy retirement with a 'reasonable' standard of mental and physical health in fulfilling life's ambitions, aspirations and achievements (Weterhof et al. 2001). Overall, in this age group, health and functioning reflects the older person's experience of physiological decline and acceptance of age-related life changes. This view contrasts with middle aged adult's view of QOL, which relates to self-confidence and self-worth, job and career opportunities as well as raising their offspring, whereas younger adults (17 – 25 years) tended to focus on self, personality, enjoyment and socialising, education, work and finances (Westerhof et al. 2001).

QOL of older patients with coronary heart disease (CHD)

Evidence from the literature demonstrates that despite individual differences in QOL, the concept consists of a small number of common core domains, which includes physical, psychological,

social, cultural and spiritual/religion domains (Kane et al. 2003; Walker and Hennessy 2004; Gabriel and Bowling 2004; Bond and Corner 2004; Tester et al. 2004; Sevinc and Akyol 2010). According to Pasquali et al. (2001) and other researchers, it seems plausible to extrapolate, with caution, appropriate elements or domains of a good QOL of older people generally to older patients with CHD in hospital and community settings (Kane et al. 2003; Walker and Hennessy 2004; Gabriel and Bowling 2004; Bond and Corner 2004; Tester et al. 2004; Sevinc and Akyol 2010). In addition to these authors' perspectives, a good QOL with cardiac patients is specifically associated with well controlled symptoms of CHD in the physical domain of QOL (Sevinc and Akyol 2010). This incorporates well managed pain relief and relief of cardiac dyspnoea and the presence of a minimum number of individual cardiac risk factors or, at least, risk factors that are medically well managed and controlled (Sevinc and Akyol 2010).

A focus on the individual cardiac patient's emotional health and social well-being is equally important to a good QOL, combined with his/her ability to carry out activities of living with a 'reasonable' amount of independence and mobility (Sevinc and Akyol 2010). The converse of this argument on QOL is also true. For instance, the existence of a high number of potentially damaging cardiac risk factors and/or a deterioration of any of the aforementioned concepts are generally associated (depending on the strength of the patient's coping strategies/abilities and social support mechanisms) with a negative QOL (Bosworth 2000). For patients to manage their CHD effectively and to help them improve their QOL, it takes a determined effort on behalf of the patient/family and cardiac health professionals to help them to live, adjust and to adapt to this chronic condition (Sevinc and Akyol 2010). This includes active involvement of the patients/families in a range of secondary preventative strategies to help them to manage their condition effectively and to improve their QOL. According to Sevinc and Akyol (2010), some examples of these strategies include:

- Concordance with prescribed medication (e.g. beta-blockers, statins (i.e. cholesterol-lowering drugs), ACE inhibitors and Aspirin); and treatment regimes (e.g. angioplasty combined with stenting and coronary artery bypass grafting (CABG) or cardiac surgery;
- Focusing on manipulation of the patient's modifiable cardiac risk factors (e.g. hypertension, high cholesterol, obesity);
- Changing lifestyle behaviours (e.g. healthy diet, regular exercise, no smoking);

- Learning to manage and to adapt to co-morbid conditions (e.g. hypertension, diabetes, osteoarthritis), alongside learning to live with and to effectively manage the chronic problem of CHD;
- And, finally, to actively continue participation in exercise-led CRPs tailored to meet their individual needs either at the community, hospital, or at the patient's home in a bid to prevent a re-occurrence of their cardiac event.

In conclusion, there seems to be a lack of consensus in the literature amongst researchers over the definition and measurement of QOL, which extends to the meaning of QOL for older people (Hunt 1997; Rapley 2003; Bond and Corner 2004; Gabriel and Bowling 2004; Borglin 2005). Nevertheless, Farquhar (1995) points out that health service researchers and academics relentlessly pursue meaningful and measurable outcomes in a bid to discover the gold standard measure of QOL.

QOL tools: definitional, conceptual and methodological limitations (validity, reliability, responsiveness (sensitivity) and response shift)

Introduction:

In terms of the historical development of QOL tools, they all contain four key classical constructs or mild variants of these, namely, physical, mental, social functioning and symptoms (Farquhar 1995). This author proposes that the following four respective questions encapsulate the four constructs of QOL if they are applied to a patient with CHD. Does your health restrict you in climbing a flight of stairs? Have you felt sad, low or below par in the last two weeks? Has your health interfered with your social activities/ hobbies? And, finally, how much pain have you suffered in your chest in the last two weeks? (Farquhar 1995).

Carr et al. (2001) recognizes that due to a lack of consensus of a well-accepted clear definition of the meaning of QOL, there is a domino effect in that measurement of quality of life is, in turn, difficult and, at times, paradoxical. Carr et al. (2001: p.1361) contend that '*existing measures do not account for expectations of health, and they do not incorporate the boundaries within which levels of expectation and experience are measured*'. It is worth noting that a person with good health may experience a significant impact on their quality of life from a relatively minor illness e.g. influenza. The converse of this is also true. Take, for instance, a patient who suffers from a 'heart attack'; this may have a much less significant impact on their quality of life than the person with, for instance, influenza (Carr et al. 2001).

Other conceptual and methodological problems with quality of life include what is termed 'response shift', which refers to the idea that the terms of reference or criteria by which quality of life is judged changes over time (Carr et al. 2001). People's experiences of, and responses to, illness, disease or pain are different; they can vary considerably from person to person and from culture to culture (IASP 2002). In other words, psychological factors unrelated to health may influence the subjective appraisal of well-being or patients may use different criteria to appraise well-being as health status changes over time (Muldoon et al. 1998). Armstrong et al. (2007: p.580) make a very similar point to Muldoon's when they refer to '*QOL scores being more closely related to the patient's adaptive cognitive processes than pathology*'. In other words, a patient with no clear presence of pathology could have a poor quality of life in contrast to seriously ill patients who can report a very good quality of life. In summary, conceptual difficulties with definitions and consequent methodological problems with QOL measurement has given rise to a lack of a coherent theoretical framework around the whole concept about what it is and how to capture it (Armstrong et al. 2007).

Types of QOL tools: definitional, conceptual and methodological limitations (validity, reliability, responsiveness (sensitivity) and response shift): in:

(a) Generic QOL tools

Three main types of quality of life (QOL) measures exist. These include generic, disease- or condition-specific and patient-generated (or reported) outcome measures. Generic QOL measures are intended to be broadly applicable across different interventions, and across patients with different characteristics. In contrast, disease-specific measures focus on the complaints that are attributable to a specific diagnosis or patient population. Another more recent development to QOL measures is the so-called 'individualized' or patient-generated/reported measures or outcomes. Importantly, these latter measures allow the patient's voice to be heard and to define quality of life from their own personal and subjective perspective (Smith et al. 2000). Thus, health-related QOL and the patient's experience of illness (symptoms) was beginning to ascend their own "ladder of importance" shifting away from the narrow medical/physiological model of disease towards its broader locus in the everyday world of the patient' (Armstrong et al 2007).

Generic QOL tools include single indicators, health profiles and utility measures (economic analysis of the impact of disease), for example, Nottingham Health Profile (NHP) and the Sickness Impact Profile (SIP). This latter tool consists of a physical dimension incorporating

ambulation, mobility, and body movement and a psycho-social domain which includes social interaction, communication and emotional behaviour (Yusuf et al. 2004).

According to Yusuf et al. (op.cit.), the advantages of generic health profiles rests on the case that they are single instruments designed to detect differential effects on different aspects of health status and address broad comparisons of the relative impact of various health care programmes across interventions. These health profiles deal with a wide variety of areas and can be used in any patient population, regardless of the underlying condition. Yusuf et al's (op.cit.) sentiments are supported by Dyer's et al.'s (2010, p.2) work, as he and his team assert that the main advantages of generic QOL tools are that "*they allow the calculation of Quality adjusted life years (QUALY's) within cost utility analyses (economic evaluations)*". These tools also allow comparisons of health-related quality of life (HR-QOL) across different conditions and against age-sex matched population norms". However, because of the generality of generic tools, a recognized limitation is that they may not focus adequately on specific areas of interest and may not be responsive or sensitive to changes in specific conditions (Yusuf et al. 2004).

There is evidence to support the lack of sensitivity or responsiveness to clinically important changes in the patient's perceived health vis-à-vis the NHP and SIP generic tools as applied to the cardiac context, in particular, the recovery of patients after an MI (Taylor et al. 1998). Both measures are frequently used to assess QOL in cardiac patients. Taylor et al. (op.cit.) discovered poor to modest levels of sensitivity (0.3) in both measures used in their relatively small scale quantitative research study (n = 147). Taylor and colleagues advise researchers to improve existing generic tools for sensitivity purposes or, alternatively, to develop cardio-specific QOL tools for the assessment of cardiac patients.

Further conflict exists in the literature with respect to generic QOL tools in relation to their discriminatory properties. There is recent evidence from a U.S. research study to contradict Yusuf's (2004) and Taylor's (1998) findings about the proposed weaknesses of generic tools (Garster et al 2009). This U.S. based quantitative study examined the abilities of six widely used generic QOL tools (QWB-SA , SF 6D, EQ-5D, HUI2, HUI3, and HALex) (but not the use of NHP and SIP tools) to detect HR-QOL differences related to CHD in a cross sectional national representative sample of adults (n = 3,844). A comparative analysis took place between three sample groups, Group 1 – 3,350 patients without CHD, Group 2 – 265 with CHD not taking chest pain medication, and Group 3 – 218 with CHD currently taking chest pain medication. The results indicated the *'total scores demonstrated the generic tools' ability to differentiate between individuals with and without CHD, and between CHD severity sub groups defined by self reports of taking or not taking medication for chest pain* (Garster et al p.1244). They conclude that

'generic tools capture differences in HR-QOL in population studies of CHD similarly to a score constructed from questions probing CVD-specific symptoms with a disease-specific proxy score' (Garster et al. 2009, p 1239).

In essence, it should be acknowledged that Garster et al.'s (op.cit.) work did not use the generic NHP and SIP tools in their study, nor did the cardiac population consist of patients with an MI reminiscent of Taylor et al.'s (1998) work; instead, the proxy sample consisted of patients with heart failure (n =154) as a point of reference. Another limitation is that the proxy CVD-specific index was not a validated disease specific tool and it is unclear why these researchers used it without a rationale when other clinically well- validated and reliable instruments exist, such as the Seattle Angina Questionnaire produced by Spertus and colleagues in 1995. Nevertheless, despite such limitations, the significance of these findings indicates that administering CHD-specific instruments to general populations may be of limited value. Moreover, clinicians may find these results interesting and useful where, in cardiac health care practice, there is increasing interest in the administration of generic HR-QOL tools to monitor patients in an ambulatory setting (Nowels et al. 2005).

In a relatively recent structured review of 15 generic instruments (in 122 journal articles) used to measure quality of life in older people performed by Haywood et al. (2005), the NHP (which conflicts with Taylor's (op.cit) views above on responsiveness) and the SF-36 demonstrated good internal and test-retest reliability alongside good reliability, validity and responsiveness. Particularly for older people living in the community, where a broad assessment of health is required, the SF-36 measure has been relatively well-evaluated. It is recommended in assessing QOL in older people (60 years and older) with a range of limited co-morbidities which included, though not specifically designed for nor applied to, patients with CHD (Haywood et al. 2005).

A systematic review of randomized controlled trials published in 2005 in 22 high impact medical journals, which used the popular, robust and well validated generic SF-36 QOL tool, demonstrated major limitations and weaknesses inherent in the selected trials (Contopoulos-loannidis et al. 2009). These weaknesses were not so much aimed at the psychometric properties of the SF 36 QOL tool itself (no other tool was used in the review designed to enhance trial comparability), but culpability was firmly placed on the clear lack of standardization, inconsistency and superficiality of reporting mechanisms of QOL data (arising from the SF 36) produced by the researchers (Contopoulos-loannidis et al. 2009). In some cases, the SF 36 findings were reported in a fragmented way or inadequately discussed or not discussed at all in several trials. Only 5% of the findings were reported in the trials, and when reported had only collected information on SF 36 without analysing or publishing those two to three years after the publication on the main trial

results (Contopoulos-loannidis et al. 2009). Some researchers in the trials attributed the insensitivity of the SF 36 post hoc or demeaned it for producing discordant findings, as opposed to any attempts to rationally explain them, and some trials inaccurately interpreted the results from the SF 36 tool (Contopoulos-loannidis et al. 2009). Moreover, the researchers involved did not appear to provide any empirical rationale for the selection of the SF 36 above others at the outset of the study (Garratt et al. 2002; Piaggio et al. 2006). This cacophony of problems have led these researchers to purport that '*QOL seems to be undervalued as a health outcome in clinical research, few trials collect QOL data, fewer report on them, data is only partially presented and QOL rarely affects the trial interpretation*' (Contopoulos-loannidis et al. 2009, p.5). They conclude that researchers should pay detailed attention to the complete reporting of QOL outcomes in clinical trials with systematic and standardized interpretation of data to enhance clinical decision-making about what interventions matter to patients (Contopoulos-loannidis et al. 2009).

It is worth mentioning that cardiovascular disease (CVD) covers a wide range of conditions, ranging from myocardial infarction, angina pectoris, heart failure to surgical re-vascularisation techniques such as angioplasty and coronary artery bypass grafts (CABG). Bowling (2005) claims that these different conditions require careful selection of outcome measures, for instance, QOL, to ensure sensitivity to changes and that they contain items that are relevant to the impact of the condition and its treatment on patients' lives.

Types of QOL tools: definitional, conceptual and methodological limitations (validity, reliability, responsiveness (sensitivity) and response shift): in:

(b) Disease -specific QOL tools

A number of disease-specific tools have been used to compare the QOL status of different groups of cardiac patients, for instance, patients with heart failure, angina, myocardial infarction, including cardiac rehabilitation interventions (Taylor et al. 1998). Despite the continued growth of QOL tools in theoretical and practical terms, there remains no consensus as to the suitability of these instruments in the assessment of cardiac disease (Taylor et al. 1998). Some researchers maintain a rather caustic perspective with QOL researchers in cardiology, as the latter are accused of limiting QOL operationalisation to sets of symptoms, for instance, measurement of depression, crude items on levels of functioning, items on sex life and sleep (Engblom et al. 1994; Bath et al. 2010). Return to work has been a popular outcome, particularly in cardiac rehabilitation, but sometimes this notion has also been subjected to crude measurement (Engblom et al. 1994; Hedback et al. 2001).

However, disease or specific QOL instruments are deemed to be clinically sensible and may be more sensitive or responsive, as they often include only important aspects of QOL that are relevant to the particular patients being studied (Yusuf et al. 2004). However, Smith et al. (2000) contradict this latter view, as they used two cardio-specific QOL tools: the Quality of Life Index (QLI) and the Quality of Life after an MI (QLMI) scale, which was later developed into the McNew QOL tool (Hillers et al. 1994). They also utilised two other tools termed SF 36 (generic) and SEIQOL (patient-reported outcome measure) to assess sensitivity levels in their small-scale quantitative study (n = 16). All the measures performed poorly, but the two cardio-specific measures performed worst of all in relation to having the lowest levels of sensitivity of all the four instruments (Smith et al. 2000). These authors discounted small sample numbers and longevity of the study (6 weeks) as unlikely explanations for the low sensitivity levels, although they did not dismiss the 'ceiling effect'. This occurs when QOL sub scales indicate the complete absence of any dysfunction and therefore cannot show further improvement. Smith et al. (2000, p.394) conclude the study by '*cautioning researchers in the selection, application, and interpretation of QOL measures used in effectiveness studies involving cardiac patients*'.

Over recent times, there has been a growing interest in developing disease-specific QOL tools for patients who experience heart failure (HF) (Garin et al. 2008). HF is recognized as a common, disabling and chronic health problem that often results as a complication of CHD, especially from an MI and/or long-standing hypertension (Colledge et al. 2010). HF is acknowledged as a debilitating and "*deadly*" medical condition (*high morbidity and mortality rates*)' for the afflicted sufferer which is "*frequently encountered by physicians*" and *surgeons alike in both primary and secondary care settings*' (McMurray and Pfeffer 2005, p.1877). The prevalence of HF increases with advancing age and the condition affects up to 10% of older people, aged 65 years and beyond (McMurray and Pfeffer 2005). HF has a significant negative impact on the afflicted person's QOL, and because it is a chronic condition, treatment strategies are usually lifelong and mainly symptomatic in nature (Garin et al. 2008). Patients with HF complain of poor QOL from physical and psycho-social perspectives in terms of a lack of mobility, independence, poor functional status, and depressive/anxiety disorders (Alonso et al. 2004). It has been argued that a person's QOL is reduced more with HF than with most other chronic illnesses (Hobbs et al. 2002). The physical signs and symptoms of HF are associated with long-term cardiac oedema, poor cardiac output to meet the physiological needs of bodily cells, chronic fatigue and patient complaints of varying degrees of breathlessness due to pulmonary congestion (Colledge et al. 2010).

Garin et al. (2008) performed a systematic review with meta-analysis on the psycho-metric properties of validity, reliability and responsiveness on five different disease-specific QOL tools

for patients with heart failure. They were identified as the Minnesota Living with Heart Failure Questionnaire (MLHFQ), Chronic Heart Failure (CHFQ), Quality of Life Questionnaire for Severe Heart Failure (QLQ-SHF), Left Ventricular Dysfunction (LVD -36), and the Kansas City Cardiomyopathy Questionnaire (KCCQ) (Garin et al. 2008). Their results indicated that all the five tools had adequate psychometric properties (i.e. validity, reliability and responsiveness), albeit assessments of validity were difficult to ascertain as different reference criteria were used by different researchers (Garin et al. 2008). As regards reliability assessment, Cronbach's alpha values were above the recommended standard of 0.7 for all the five QOL tools (Garin et al. 2008). However, some concerns were expressed regarding the properties of construct validity of the CHFQ and the poor responsiveness of the QLQ – SHF to clinical change with its lack of ability to differentiate between interventions (Garin et al. 2008). These authors noted that there was wide variation in the amount of evidence available in the literature as regards the psychometric properties of these tools, most notably, for the property of responsiveness. It seemed that the MLHFQ heart failure QOL tool was the most frequently used by researchers, and above others, had the largest amount of available data as regards the tool's properties (Garin et al. 2008). The authors acknowledge the limitations of the review (potential reviewer selection bias, publication bias, and differences in study characteristics) and declare the actions taken by them to minimise such limitations (Garin et al. 2008). On the basis of this review of the quality and quantity of the evidence of the psychometric properties of the five QOL tools analysed, they primarily recommended the use of the MLHFQ tool, followed by the KCCQ and the CHFQ in clinical and research work (Garin et al. 2008). Their rationale is based on the grounds that MLHFQ possesses good metric properties consistently demonstrated in a large number of studies, its applicability to a wide range of settings, and its frequent usage by clinicians/researchers related to its simple structure and ease of administration (Garin et al. 2008).

Types of QOL tools: definitional, conceptual and methodological limitations (validity, reliability, responsiveness (sensitivity) and response shift): in:

(c) Patient-reported (or generated) QOL outcome measures

The broad umbrella concept of 'patient-reported or generated outcome measures (PRO or PROMs)', of which QOL outcome is a prime example, has been defined as the measurement or the assessment of any aspect of the patient's health status reported directly by them without any interpretations or re-interpretations made by members of the health care team (Acquadro et al. 2003). This relatively new 'PRO' approach to the generation of QOL tools emphasizes their individual nature and places value on the individual's own perspective of what QOL means to them (Patel et al. 2003; Valderas et al. 2008; Sevinc and Akyol 2010). This ideology is designed

to capture the individualistic nature of QOL, where patients are free to individually define their QOL in terms of domains, weights and components in comparison to traditional tools that are more prescriptive in design (Patel et al. 2003). In the same vein, another researcher emphasizes the central role of the individual by claiming that the quality or value of an individual's life is no more or less than what he/she considers it to be (Sevinc and Akyol 2010). This latter view is clearly exemplified in their definition as they state that '*QOL can be defined as the subjective experience of a person concerning his or her own life*' (Sevinc and Akyol 2010, p.1316). It has been postulated that since QOL is a uniquely personal perception, most measurements of QOL in the medical literature seem to aim at the 'wrong' target in terms of focusing on the medical/clinical perception of QOL as opposed to the 'correct' target of the lay/patient perception of it (Montazeri et al. 1996; Garrett et al. 2002).

The literature advances the case for the patient to define and 'own' the concept of QOL. Typical exponents include Gill and Feinstein (1994), who reviewed 75 randomly selected original QOL articles from random medical data sources respected scientifically, such as the Medline database. They observed that in excess of 80% of the articles, patients were allowed to respond only to a list of items previously selected by experts and were not invited to add any individual responses. This practice is based on the traditional reliance on the '*physician/expert knows best*' about the patient via the medical model of disease (Garrett et al. 2002; Efficace et al. 2004). Under this medically driven model, clinical, laboratory and radiological measures in conjunction with clinical endpoints (e.g. survival, morbidity and mortality rates) supersedes the subjective well-being of patients or patient-generated health outcomes where QOL is a prime example (Garrett et al. 2002; Efficace et al. 2004). However, there is a word of caution with attempts to grasp the concept of individual uniqueness, albeit elusive and fleeting in nature, because the same condition may generate very different profiles and it is, therefore, impossible to assume a particular area of life will be important to a particular individual (O'Boyle 1995).

The critique performed by Gill and Feinstein (op.cit.) was conceptual in approach to QOL assessments rather than methodological, as standard psychometric properties of validity, reliability, and sensitivity were omitted. A total of 159 different generic and specific QOL tools were reviewed in the 75 articles selected. Of the 159 instruments, 136 were only used once. The Sickness Impact Profile (SIP) was the most frequently used QOL tool in this study, the rest were less well-known instruments used in cancer care and impaired functional capacity. Gill and Feinstein (op.cit.) proclaim the following results which makes interesting reading about the lack of depth of thought that some researchers depict when studying the concept of QOL, which resonates with Contopoulos-Ioannidis' and colleagues' (2009) aforementioned critical work on the same concept (see p.70 – Thesis). Gill and Feinstein (op. cit.) stated that:

“Investigators conceptually defined QOL in only 11 (15%) of the 75 articles: identified the target domains in only 35 (47%); gave reasons for selecting chosen QOL in only 27 (36%); and aggregated their results into a composite QOL score in only 27 (38%) of 71 eligible articles. No article distinguished overall QOL from health related QOL: patients were invited to give their own separate rating for QOL in only 13 articles (17%); and among 71 eligible articles, patients were asked to supplement the stipulated items with personal responses in only nine (13%) and to rate the importance of individual items in only 6 (8.5%).”
(Gill and Feinstein 1994, p.619)

Gill and Feinstein (1994) acknowledge the complexity, time consumption and the labour-intensive nature of QOL measurements in relation to item selection, item reduction, pre-testing, and quantitative evaluation to maximize reliability and validity of the tools in the interest of scientific rigour. They point out that ‘QOL tools may be elegantly constructed in terms of statistical techniques and psychometric properties but, in reality, are they satisfactory for the clinical goal of indicating what clinicians and patients perceive as QOL? They conclude their review by claiming that QOL rests within *‘the eye of the beholder’*, which portrays the way that individual patients feel about their health status and/or non-medical aspects of their lives. In a conciliatory tone, they assert that *‘QOL can be suitably measured only by determining the opinions of patients and by supplementing (or replacing) the instruments developed by experts’* (Gill and Feinstein 1994, p.624).

However, individualised QOL tools are not without their limitations too. Patel et al. (2003) performed a systematic critical review of selected individual tools such as the Patient- Generated Index (PGI) and the Schedule for the Evaluation of Individual Quality Of Life (SEIQOL) for application to clinical trials. They claim that SEIQOL is reliable, valid and responsive but PGI lacked these psychometric properties. Social class differences were found in the completion of the PGI where the less well-educated working were less likely to comprehend the PGI tool (McDuff 1998). Both PGI and SEIQOL lacked practicality and, hitherto, have not been used in the clinical trial setting. For instance, the original longer version of the SEIQOL tool is cumbersome and time-consuming and can take 30 – 45 minutes for patients to complete.

All of the QOL tools used in Patel's and colleagues' study (op.cit) fail to provide a form of standardisation needed for estimating population effects in a clinical trial. In conclusion, they argue that patient-reported outcome QOL tools tend to lack application to the clinical trial setting. However, Patel et al. (2003, p.602) point out that these tools appear to be more useful in *‘complementing traditional QOL tools in guiding individual patient treatment decisions in the clinical consultation process and assisting the design and development of new questionnaires and instruments’*.

Summary of literature review

A critical evaluation of the literature illustrates that there are gaps in knowledge in relation to the cardiac rehabilitation of older patients, particularly on their quality of life, perceptions, views and opinions about the effectiveness of the service in meeting their needs (Carr and Higginson 2001; Borglin 2005). Older people are portrayed as the 'neglected group phenomenon' within the literature. Reasons proposed range from negative stereotyping of older people to 'cardiological ageism', combined with their exclusion from research trials without justification and/or related to unjustifiable fears of co-morbidity and frailty due to the ageing process (Bugeja et al. 1997; Bayer and Tadd 2000).

In summary, QOL has become an increasingly important subjective outcome measure to examine the impact of disease/illness, medical treatment or health care interventions and health care services in terms of their effects on patients (Bowling 2005). A review of the current literature highlights gaps in knowledge in relation to some of the following difficulties with QOL definition and measurement with both general and specific cardiac patients:

- Conceptual confusion and lack of clarity exists within the literature with respect to definitional aspects of QOL. An abundance of so-called QOL tools exist that bear a striking resemblance (often synonymous) to health status and functional disability measures, emotional well-being and happiness and life satisfaction tools. There is no clear distinction made by researchers between these concepts and QOL (Rapley 2003; McDowell 2006). Inevitably, this state of affairs leads to theoretical and methodological problems when attempting to measure the concept of QOL. This dilemma applies to both younger and older patients alike, ranging from middle-aged to 'old-old' age, respectively (Bowling 2001; Garrat et al. 2002).
- There is no ideal tool for measuring QOL in middle-aged and older cardiac patients due to both a lack of consensus of the definition of the concept of QOL and also associated with a lack of standardization in the psychometric properties (validity, reliability, responsiveness, sensitivity and researcher reporting and interpretation of QOL data) in the construction of various tools (Taylor et al. 1998; Garratt et al. 2002; Bowling et al. 2005; Contopoulos-loannidis et al. 2009; Garrett 2009).
- The literature indicates that the majority of QOL tools are quantitative in nature, which subscribes to the 'positivistic paradigm' in terms of the quantification of the concept by interested parties within the medical profession and academia (Hunt et al. 1985; Hillers et al. 1994; Bowling et al. 2001; Yusuf et al. 2004). There is a lack of evidence in the literature of

assessing QOL in older cardiac patients from an eclectic mixed-method perspective who participate in cardiac rehabilitation programmes. All in all, there is a dearth of information about the meaning of QOL to older persons (Borglin 2005; Aberg et al. 2005).

- The mainly quantitative measurement of QOL stems mostly from experts who tend to originate from academia, research and/or the medical profession and some from other health care professions. They draw mainly from their own clinical/academic understanding of QOL rather than the lay view or patients' perspectives or understandings of the concept (McDonnell 2006). Moreover, the developments of QOL instruments are generally aimed at younger patient populations. Thus, they may not capture the QOL themes that are valid or perceived to be important to the diverse nature of older people in society, especially those people who belong to ethnic minority groups (Farquhar et al. 1994; Puts et al. 2007).
- Within the literature, QOL appears to be narrowly defined in relation to health (health-related QOL) and functional capacity (Nemeth 2006). This tends to ignore the important wider aspects of QOL, such as social functioning, relationships and roles, retirement, mental well-being, feelings of safety and living conditions and, finally, finances, home and neighbourhood (Borglin 2005; Puts et al. 2007). In the literature, there is a notable lack of information on another aspect of QOL that is perceived to be important to some older people from both Caucasian and ethnic minority groups, and that is spirituality, worship and religious practice (Hassed 2008; Grant et al. 2010).

HSTAT (2003) calls for further evaluative research of the effects of cardiac rehabilitation exercise training, education, counselling and behavioural interventions on special populations. These include older patients, women of all ages, patients from different ethnic groups, and those with lower educational or socio-economic levels. HSTAT (*op.cit.*) also advocate development and assessment of valid psychosocial measures to ascertain improvement in psychological functioning and QOL in patients following participation in CRPs. From the researcher's perspective, it is logical to suggest, in particular, that QOL amongst the older cardiac population deserves exploration and in-depth analysis. This should include its definition, conception, theoretical foundations and applications to practice.

Generation of the research questions

Four guiding research questions have been generated mainly from a critical examination of the above cardiac literature, regular clinical meetings in the cardiac field, various interactions, associations and conversations with cardiac patients and cardiac health professionals. The

researcher also spent dedicated time as a non-participant observer and was 'immersed' in cardiac rehabilitation practices and procedures performed by clinicians in the hospital and community settings. The four research questions (RQs) included:

- *RQ 1: What is the physical impact of a CRP on older patient's QOL who suffers from a cardiac event (MI/CABG/PCI)?*
- *RQ 2: What are Cardiac Health Care Professional's (CHCPs) perceptions of the impact of the CRP on the older patient's QOL who suffers from a cardiac event (MI/CABG/PCI)?*
- *RQ 3: How does an older cardiac patient enrolled on a CRP define QOL in relation to their cardiac event (MI/CABG/PCI)?*
- *RQ 4: What are older cardiac patient's perceptions, meanings and experiences of the bio-psycho-social-spiritual impact of the CRP on their QOL?*

In relation to (RQ 1) above, the physical domain occupies one of the key components of a person's QOL (Doward et al. 2010). Thus, it was necessary to explore the impact of the programme on the person's physical QOL. This involved the construction of a quantitative pre-test/post-test design with relevant hypotheses which focused on the measurements of eight physiological parameters relevant to coronary heart disease. These parameters were measured at patient entry to the programme and repeated six weeks later at exit from the programme to determine the physical impact of rehabilitation on the patient's QOL.

The remaining research questions (RQs 2, 3 and 4) related both to health professional's and cardiac patient's definitions, meanings and perceptions of the bio-psycho-social-spiritual impact of the programme on the patient's QOL, which respectively utilised qualitative methods. Both approaches were combined to form a mixed methods study that scrutinised the CRP at the hospital and community settings in West Yorkshire to determine its impact(s) on the older patient's QOL with CHD (MI/CABG/PCI).

In summary, the researcher has performed a critical review of the concept of QOL together with how researchers approach the measurement of the concept. Definitional and measurement aspects are fraught with conceptual and theoretical difficulty largely based on a lack of consensus of definition amongst researchers. However, these problems do not deter academics and researchers from attempting to construct a gold- standard QOL tool from a quantitative perspective. The qualitative aspects of QOL should not be overlooked or de-emphasised, as it is

argued that the concept is heavily subjective, highly individualistic and abstract, existing within and belonging to 'the eye of the beholder' (O'Boyle 1995; Sevinc and Akyol 2010). The following chapter examines the body of the thesis in terms of the rationale and justifications for the theoretical or conceptual framework in terms of the utilisation of a critical realist philosophical framework underpinning the design and methodology of the study.

CHAPTER 4: DESIGN, METHODOLOGY AND THEORETICAL FRAMEWORK

Introduction: conceptual and methodological (theoretical) framework: critical realism

The purpose of this chapter is to justify, apply and critically evaluate the concept of critical realism as a philosophical/theoretical framework that underpins the methodology, methods of enquiry and the overall research process in relation to this empirical research study on cardiac rehabilitation and QOL (see flowchart p.110). A critical analysis of the qualitative–quantitative approach will occur. The analysis will include the use of the mixed methods approach and the process of triangulation and their applications to the research study. A discussion of sampling and ethical issues will receive attention and, finally, the chapter will conclude with reflection on the preliminary pilot test and what learning took place as a consequence of this work.

Procter stresses the need for researchers to choose an appropriate philosophical framework as a basis for their research work when she asserts that it serves:

“To clarify the research design, it locates the research methods within acceptable epistemological and ontological paradigms, forms clear links between the aims of the study, research question, chosen method and methodology, and the personal philosophy of the researcher.”
(Procter 1998, p.45)

In a similar vein, Porter purports the value of the utilization of a theoretical framework as he advocates that: *“the identification of a philosophical model enables critics to examine whether the substantive research utilizes the theory upon which it purports to be predicated”* (Porter 1993, p.102).

In essence, the framework provides a theoretical basis for the study and serves to inform and rationalize the choice of methodology and methods selected in order to maintain a coherent conceptual thread throughout the study (Crotty 1998).

The philosophy of realism in relation to natural and social sciences has become relatively influential over the past quarter of a century. Bhaskar (1978) and Harre (1986) have popularised the philosophy in Europe, whilst Bunge (Mahner 2001) and Boyd et al. (1991) have focused on a similar but broader aspect of scientific realism in the US. Realist philosophy has become popular in education, health, management, social work, nursing and medical education over the past 10 years through the work of Porter (1993), Colliver (1996), Wainwright (1997), Mutch (1999), Anastas (1998), and Scott (2000).

Definitions: types of realism

The term 'realism' is used in a variety of ways, for example, moral, scientific, metaphysical (philosophical), transcendental, critical realism and other variants (Hussey 2000; Robson 2002). The central tenet of realism, and its various types, is based on the ontological claim that there exists an objective world independent of our knowledge, beliefs, theories, or descriptions concerning it (McEvoy and Richards 2003). The realist philosopher's basic assumption and belief system about the natural and social world is that an external reality exists independently of the mind (Robson 2002). The nature and existence of reality is captured by Sayer's words:

"The fallibility of our knowledge, the experience of getting things wrong, our expectations confounded, crashing into things that justifies us in believing that the world exists regardless of what we happen to think about it."
(Sayer 2000, p.2)

Miles and Huberman (1994) use the term 'transcendental' realism (originally the term was associated with the philosophy of the natural sciences (Sayer 2000), which postulates that phenomena exist at the cognitive or affective level and in the physical tangible sense. They believe that 'lawful' and reasonably stable structures are to be found among phenomena. This 'lawfulness' derives from the regularities and sequences that link together phenomena. From these patterns, constructs are derived that underlie individual and social life.

McEvoy and Richards (2003) speculate, in ontological terms, that there exist two main schools of thought associated with realism. Harre adopts the more interpretivist perspective and emphasises the impact of the individual's subjective perceptions in defining reality. On the other hand, McEvoy and Richards (*op.cit.*) speculate that Bhaskar, another key exponent of realism, emphasises the role played by the underlying structures and mechanisms on reality and leans more towards the objective and natural sciences. There is considerable overlap and similarities between these two important exponents of realism, particularly in terms of the content and theoretical elements of their realist philosophy. Their differences are a matter of emphasis on whether they lean towards the natural or social sciences.

The concept of critical realism was first coined by Bhaskar in the early 1970s, where 'critical' means that science and its quest for knowledge, in order to evolve and progress, must be critical of its own practices on both intellectual and practical grounds. It appears that 'scientific realism' is often used interchangeably with 'critical realism' and is defined in much the same way (Robson 2002). Both variants refer to the mind-independence of reality and both emphasize the need to utilise rigorous scientific principles and practices in a bid to know the social and natural world

(Robson 2002). All in all, as Robson (2002: p.41) puts it, '*critical realism provides a rationale for a critical social science – one that critiques the social practices that it studies*'.

It is important to note that 'critical realism' (CR) rejects the positivistic paradigm as a philosophy of science but it should be stressed that it does not reject 'measurement' or 'forms of measurement', nor does it reject a rigorous scientific approach to eliciting knowledge (Sayer 2000; Pawson and Tilley 2003). CR offers an alternative worldview in what may be called a 'third way', in contrast to the polarized views of positivism, on the one hand, and the relativist (interpretivist) view, on the other (Procter 1998).

Positivism, relativism and critical realism

Historically, the entrenched worldview of science has been dominated by the philosophy of positivism. Robson (2002) argues that its foundational roots can be traced back to the philosophical work of Comte, Hume and Spencer particularly in the nineteenth century. Positivists generally emphasise the importance of impartial objective observations, randomization, number-crunching, prediction and control as a basis for knowing the natural and social world. Sayer (2000) and Robson (2002) purport that the central tenets of the positivistic or 'standard view of science' stipulate that knowledge must be fact-based and value-free. There is little room for the affective domain of knowledge which is strongly linked to emotionality. Thus, subjective knowledge is de-valued (Sayer 2000; Robson 2002). Secondly, objective knowledge or 'facts' can be gained from direct experience or observation (empiricism) and is the only knowledge available to science. Thirdly, knowledge is derived from quantitative data using strict rules and procedures. There is a strong emphasis on measurement of phenomena, control, and prediction. Thus, the only true and reliable knowledge is scientific knowledge (Sayer 2000; Robson 2002). Finally, the purpose of science is to develop universal causal laws. Causation refers to the discovery of relationships or regularities between strictly controlled phenomena or variables (Sayer 2000; Robson 2002). Positivists' view of causality is the search for the co-occurrence of events (or 'constant conjunctions') in what is also termed the narrow 'Humean successionist' theory of causation in the quest to know the natural and social world (Sayer 2000; Robson 2002).

The concept of the existence of 'facts' has been contested in Nietzsche's following statement: "*Facts" altogether*", as he states, '*there are no facts, only interpretations*' (Nietzsche 1880 cited in Honderich 2005, p.622). The contextual aspect of this statement derives from Nietzsche notion of 'perspectivism'. He drew most of his philosophical argument and analysis about moral and religious phenomena, aspects of human nature, truth and knowledge, from a multitude of

perspectives (Honderich 2005). He was able to use these different perspectives in conjunction with his intellectual ability to critique and problem-solve from different angles, including cultural, social, scientific, artistic psychological, linguistic and philological debates, in terms of his analysis of classical languages and literature (Honderich 2005). Thus, Nietzsche advocates the development of an expanding repertoire of perspectives when attempting to understand phenomena of interest that will lead to a growing, a sharpening and a deepening comprehension of such phenomena with the *'use of the many and different eyes'* (Honderich 1995, p.623). However, it is argued that Nietzsche is often misunderstood, which is not helped by his highly figurative, metaphorical, controversial and ambiguous style of writing which *'can lead one to spend a lifetime working out his meaning'* (Stangroom and Garvey 2008, p.116).

The positivistic scientific view of the world has been heavily criticized, particularly when the context shifts from the natural to the social world (Robson 2002). The strictly controlled experimental world of the 'laboratory' may well be suitable to the manipulation, control and prediction of events, but this view does not easily transfer to the social reality of people (Robson 2002). People do not generally conform to constant conjunctions, co-occurrence of events or cause and effect relations. At times, research and the pursuit of knowledge in the 'real' world of people, institutions and social environments is confusing, complex and multi-layered, unlike the "closed" single layered reality' of the strictly controlled environment of the laboratory (Pawson and Tilley 2003; Robson 2002).

Robson (2002: p.xi) succinctly states that *'positivism as a basis for social research is a god that failed'*. However, despite its limitations, he points out that positivism has advanced knowledge progressively and influentially in society, especially in the natural and human sciences, for example, in theoretical and experimental Physics, Mathematics, Chemistry, Medicine and Physiology (Robson 2002). As in Robson's allusion, perhaps it is a case, with the complexity of the modern social world with its inherent multi-layered realities that the positivistic paradigm, and all that it purports to enlighten, is beginning to outlive its usefulness.

An alternative philosophy or worldview is offered by relativism or interpretivism, which stands at the opposite end of the pole to positivism. The central tenet of the relativist approach maintains that there is no external (objective) reality independent of the mind (Robson 2002). In relativism, social reality is constructed by language, discourse, culture, perceptions and the different and varied meanings and classification which people attach to the world (Robson 2002). The 'individualistic perceptual' view of relativism (non-radical), in the way which actors create, define and re-define the social world, is an important strength. It emphasises the view that people are not 'passive puppets' to be manipulated and molded by the world, but that they are conscious and

purposive actors where they actively create their own social realities (Robson 2002). Relativists have contributed to social science research in their beliefs that science and knowledge is socially constructed and that science is not value-free, unlike the positivist paradigm (Robson 2002). However, this philosophy is not without its limitations. At its extreme, it has been accused of denying the existence of an objective or external reality, that reality can only be defined at the 'micro' subjective level and that it tends to ignore the 'macro' influence of political systems, material change, social organisations, bureaucracy and social institutions (Procter 1998; Sayer 2000).

Between the polemical world views of positivism and relativism lies the 'middle ground' philosophy of critical realism. As Sayer (2000: p.32) puts it, this framework *'proposes a way of combining modified naturalism with a recognition of the interpretative understanding of meaning in social life'*. Its central proposition is that it believes in the mind-independence of the world or that a world exists of our knowledge of it. Traditionally, CR has been well utilised and applied to the natural sciences, whereas the philosophy from *circa* the mid 70s has been adapted and applied to the epistemology of the social sciences (Kazi 2003).

Outhwaite (1987a) outlines the main principles attached to the philosophy of critical realism (CR). A distinction is made between the transitive and intransitive domains of knowledge or objects of science. In this context, 'transitive' is defined as concepts, theories and models which are designed to explain aspects of reality, whereas 'intransitive' objects consist of real entities and their relations that constitute the natural and social worlds (Outhwaite 1987a). Secondly, reality is stratified into three layers, levels or domains termed *'real, actual and empirical'*. 'Real', according to Outhwaite (1987a), consists of structures and processes which make up reality and produce events. Sayer takes the definition of *'real'* further in terms of its dual meaning:

"On the one hand 'real' means whatever exists regardless of whether we happen to have an adequate understanding of its nature. On the other, 'real' refers to the realms of object (e.g. physical, psychological and social objects), their structures (social or natural e.g. communication systems) and powers or tendencies (e.g. bureaucracies). Whatever the nature of the object, they are imbued with structures and causal powers i.e. the capacity to behave in particular ways."
(Sayer 2000, p.25)

'Actual' refers to events that happen if and when those powers are activated e.g. bureaucratic powers are activated through hierarchies and classification systems (Sayer 2000). *'Empirical'* consists of events that can be observed (a prime preoccupation of the positivist paradigm). This domain of experience can be either real or actual though its contingent (neither necessary nor impossible) on whether we know the real or actual. Some structures may not be observable, but

because they are unobservable, it does not mean that they do not exist. However, observation does make us more confident about what we think exists (Outhwaite 1987; Sayer 2000).

Causal relations are regarded as powers or tendencies which interact with other tendencies such that an observable event may or may not be produced (Porter 1993). Critical realism rejects the 'closed' system of the positivist view in terms of the successionist theory of causation or the sequential regularities of events (Kazi 2003). Realists reject the reductionist view where the world consists of observable atomistic objects or events as if these entities had no structures or powers and no observable qualities (Porter 1993; Kazi 2003).

Alternatively, realists believe in 'open' rather than closed systems and that causal processes particularly in the social world may produce quite different results in different contexts (Sayer 2000). The social world functions within a multi-dimensional 'open' system of flux, fluidity and changing contexts. This world contains ambiguity, uncertainty, being sometimes 'messy', possessing multi-layers of reality, discourses and meanings (Robson 2002). The search for causal explanation within the CR framework is the search for generative mechanisms and structures that underpins phenomena that exist in the natural and social sciences or, to put in another way, realist explanation depends on identifying structures (social or natural objects, a set of internally related elements), their causal mechanisms (latent and manifest) and how they work and discovering if they have been activated (effects or outcomes) and under what conditions or contexts (Sayer 2000; Robson 2002; Pawson and Tilley 2003).

Realists believe that deductive reasoning or methods of enquiry (general theory to particular concepts) and inductive reasoning (particular concepts to general theory) are necessary but insufficient for theory development particularly in a complex social world (Procter 1998). Both reasoning strategies assume a linear approach to the generation of knowledge with clear beginning and end points (Procter 1998). For more completeness of thinking strategies in research, Lawson (1989) calls for the inclusion of retroductive reasoning. This is a creative form of reasoning that takes place retrospectively as mechanisms are postulated to account for observed phenomena using the conceptual tools of analogy, metaphor and model-building (Lawson 1989). Realists call for the combination of all three styles of reasoning, which facilitates flexible ways of collecting data, use of multiple methods, and enables the researcher to search for answers using varied and complimentary methods (Procter 1998). Thus, similar and competing explanations can be compared and contrasted to enhance explanatory power in theory development. This notion corresponds to Popper's falsification approach, which leaves open the possibility that the theory can be amended or replaced by another theory that offers a more complete explanation of social or natural phenomena in the future (Lawson 1989).

Critique of critical realism (CR)

Similar to every philosophical position and 'ways of knowing' or worldviews, CR has its limitations as the underpinning theory of scientific knowledge in the natural and social sciences. There are sometimes difficulties in finding sufficient grounds to testify to the existence of causal structures and mechanisms to explain natural and social phenomena (Nutley et al. 2000).

Hussey (2000) argues that our conceptions of reality and our theorizing about the world are linked to our language, discourse and conceptual schemata which reflect our cultural background and educational upbringing, concepts which are ontologically, to some extent, mind-dependent. Therefore, explanations of the world and meaning of reality may mean different things in different contexts and so have different truth values. Realists counter this view when they say that 'this is true but trivial'. However, it does not mean that they have to abandon their ontological claim that there is a reality that is independent of our descriptions (Hussey 2000).

Aspects of Marxist ideology have been linked to critical realism concerning the areas of capital and labour asymmetry and the prevalence of material, social and health inequalities between the rich and poor and the professional and working classes in society (Scambler 2001; McEvoy and Richards 2003). It has been argued that realists who favour the Marxist position may wander over the boundary that separates scientific knowledge from political ideology to make informed decisions about the best course of action to follow in any given set of circumstances (Scambler 2001; McEvoy and Richards 2003).

Because of the realist interpretive position of the social world, it is sometimes difficult to clarify or define, or make distinctions between, 'transitive and intransitive' domains of knowledge, between 'structural and generative mechanisms', the understanding of the nature of 'power' and what clearly constitutes 'real, actual and empirical layers of reality' (Benton 1981). In light of Benton's view, this has the sequential' effect of making the language and meaning of the philosophy of critical realism relatively obscure and opaque, at times difficult to interpret and not always conceptually clear. Moreover, the array of the different types of realism used with different interpretations and definitions that academics make when debating academic and practice issues may give rise to conceptual confusion or, at the very least, conceptual ambiguity (McEvoy and Richards 2003).

Rationale, suitability and application of critical realism (CR) to the research study

It is recognized that CR occupies the 'middle ground' philosophical position between the positivism and relativism which provides a richer and more sensible alternative to these extreme positions (Robson 2002). CR offers a way to help bridge the gap between the quantitative–qualitative divide. It accepts scientific principles, forms of measurement, and the objective nature of the natural sciences, together with the acceptance of the interpretive view of social actors in the social sciences (Procter 1998; Clarke et al. 2005) (*refer to conceptual (theoretical) framework - flow diagram p.110*).

CR is particularly relevant when applied to understanding the complexities of health care environments such as the social practice of CRPs that are located in hospital and community contexts (Procter 1998; Clarke et al. 2005). These are neither stable nor value-free environments that easily lend themselves to prediction, control and measurement of variables (Procter 1998). She argues that changing health care environments do not consist of linear or 'constant conjunction causalities', events or phenomena occurring within a 'single layer' of reality (Procter 1998). This rationale militates against the researchers choice of using a purely positivist approach and against the nature of the research topic under exploration.

Realists believe that relationships between people and the perceptions of those relationships are influenced by external structures and internal subjective beliefs. Mechanisms such as forms of measurement (bio-metric data e.g. blood pressure, Hospital Anxiety Depression (HAD) scales, heart rates and cholesterol levels) and socio-psychological issues (e.g. cultural beliefs, individual psychology, gender, background and social class) form complex inter-relationships between individual and groups within cardiac rehabilitation contexts (Procter 1998; Clarke et al. 2005). According to Bhaskar (1989, p.2), the task of CR, as the '*under-labourer or occasionally the midwife*', in the philosophy of natural and social science, is to understand the nature of these structures, mechanisms and outcomes (*refer to flow diagram p.110*). Bhaskar's concept of the '*under-labourer*' means that CR is not the ultimate perfect philosophical theory to solve all abstract questions related to human dilemmas and ontological and epistemological debates about existence/being, reasoning, knowledge or morality. No philosophy of natural and social science, including critical realism, can lead us to discover the 'ultimate truth or truths' (Sayer 2002).

Nevertheless, CR, as a flexible philosophy, applies well to 'open' systems such as the multi-dimensional world of cardiac rehabilitation environments (Procter 1998; Clarke et al. 2005). CR invites a mixed method approach which yields rich and varied data. CR, with a mixed method approach, is appropriate for the study of complex environments with its emphasis on the

understanding of structures, mechanisms, contexts and outcomes '*in what works best for whom and in what contexts*' (Pawson and Tilley 2003, p.xvi).

Robson (2002) views critical realism (CR) as an attractive philosophy for research in practice- and value-based professions (e.g. the multi-disciplinary world of cardiac rehabilitation) due to its common sense ontology. The philosophy provides pragmatic usefulness for 'real' world research and adds epistemological strength vis-à-vis its balanced world view positions of objectivity and subjectivity to understand the nature of reality (Robson 2002). In summary, realists argue that social structures, subjective experiences, causal, generative and explanatory mechanisms are the cause and effect of behavior (Pawson and Tilley 2003). The realist urges researchers to acknowledge subjective meanings and external structures which may influence behavior (Sayer 2000). In this way, critical realism provides a balance between subjectivity and objectivity, between cause and effect, and between value free and value laden theory (Proctor 1998).

The main purpose of CR is to gain knowledge about underlying and pragmatic (non-positivist) causal, generative, or explanatory mechanisms and /or identification of structures which may be defined as latent (not directly observable) or manifest (directly observable) (McEvoy and Richards 2003). Generative mechanisms include a plethora of natural and social processes (e.g. social, psychological and cognitive entities or factors, scientific abstract or concrete concepts/constructs) that attempts to explain how either natural or social phenomenon work (McEvoy and Richards 2003). Examples of well- known mechanisms that exist in the natural and human sciences include the kinetic theory of gases, plate tectonics and Freud's psychological defense mechanisms. Social structures are defined as organizations, media, rules, resources, powers, social relations or discursive practices in which individuals find themselves embedded (Pawson and Tilley 2003; McEvoy and Richards 2003).

It should be acknowledged that from a critical realist approach regarding the social science perspective which deals with open interacting systems, a clear distinction is not always made between definitions of structures and mechanisms (Sayer 2002). Sometimes, this lack of clarity applies, also, as to what exactly constitutes actions, contexts and outcomes or as to what concept causes what. At times, some of these concepts have been used in a synonymous way (e.g. generative structures used synonymously as generative mechanisms) (Porter 2001; Sayer 2002) or, at least, structures and mechanisms are used in a way where the defining entities overlap and interact or, alternatively, the concepts receive different interpretations depending on who is using them (Porter 2001; Sayer 2002).

Structures and mechanisms in the critical realist worldview do not operate in a social vacuum or without the process of human agency interactions within specific contexts in creating, shaping and molding reality (Pawson and Tilley 2003). These concepts, in cumulative terms, tend to produce some kind of physical, chemical, medical, biological, psychological or social effect(s) or outcome(s) depending on the nature of the natural or social sciences being studied or explored (Robson 2002). He has synthesized the following formula for clarity purposes in relation to the key notions of CR: *sStructures / mechanisms + actions (e.g. human agency) + context (e.g. circumstances/conditions/culture) = outcome (effect/result/impact)*" (Robson 2002, p.30 – 31). Pawson and Tilley (2003, p.58) neatly synthesise the conceptual interplay, in critical realist terms, between the constructs, as they state: "*an action is causal only if its outcome is triggered by a mechanism acting in context*". Or to use Robson's gun powder analogy:

"The outcome (the explosion) of an action (applying the flame) follows from mechanisms (chemical composition of gunpowder) acting in particular contexts (the particular conditions which allow the reaction to take place)."
(Robson 2002, p.30)

In the light of previous justifications above, the researcher decided to utilize a critical realist philosophy as the underpinning theoretical foundation stone for this research study. This focused on *'the impact of a CRP on the QOL of older cardiac patients with an MI/CABG/PCI'* (refer to flow diagram p.110). From an ontological perspective, the researcher's worldview occupies a *'grey position'* which is *'neither a black nor white'* perspective. Thus, from a CR stance, this means that the nature of social reality has a two-fold consistency. This includes the existence of mind-independent external structures and constructs together with a mind-dependent interpretative social construction of the cardiac rehabilitation world of theory and practice (Procter 1998; Clarke et al. 2003).

The maintenance of this ontological principle of realism paved the way for the epistemological stance in relation to the researcher's provision of an in-depth mixed- method study and understanding of the actions, mechanisms, contexts and outcomes attached to the operation of cardiac rehabilitation at the hospital trust (Clarke et al. 2003). This task was performed by the adoption of an objectivist and subjectivist approach which informed the study's aims and research questions, methodology, mixed methods and data analysis used (*see flow diagram p.110*). Details of both the objective and subjective approach used in the study occurred in the following sequential manner related to the logical and practical realities in performing the study?

Research Question 1 (RQ 1): *What is the physical impact of a CRP on older cardiac patient's QOL who suffers from a cardiac event (MI/CABG/PCI)?*

The objective approach, as applied to the first research question (RQ 1) of the study, focused on the patient's physical aspects of quality of life (QOL) – a recognized key domain in the patient's QOL repertoire (Molzahn et al. 2010; Rodriguez et al. 2010). Objectivity, in this context, was defined as rigorous scientific measurement of physiological parameters from a *non-positivistic viewpoint* which is in tune with a critical realist philosophy. Using a quantitative design and methodology, pre-test/post-test physiological measurements were taken from a small sample of patients (n = 35) documented on a '*physiological grid*' at entry and exit from the six-week exercise CRP. Out of this main sample, relevant measurements (n = 7 patients) were selected to inform the physical aspects of QOL in the newly created QOL conceptual framework for the older cardiac patient (entitled '*The Ripple Impact Model*' (TRIM) of QOL for Older Patients with CHD (MI/CABG/PCI) (refer to appendix IV). These measurements included systolic and diastolic blood pressure (B/P), heart rate (HR), Hospital Anxiety and Depression (HAD) scores, Body Mass Index (BMI), smoking status (quantity) and Borg scores of perceived self-exertion to determine exercise intensity. In addition, demographic and disease characteristics (age, sex, history of heart disease and diagnosis, current medication) were also recorded to examine any relationships between these and the physiological variables (see appendix V –*demographic table*). The results were analysed by an SPSS 16 statistical package with a focus on a descriptive analysis of pre-test-post-test variables and, to a lesser extent, the use of inferential analysis via t-tests which examine statistical significance (see *right arm of conceptual (theoretical) framework - flow diagram p.110*).

RQ 2: *What are Cardiac Health Care Professional's (CHCPs) perceptions of the impact of the CRP on the older patient's QOL who suffers from a cardiac event (MI/CABG/PCI)?*

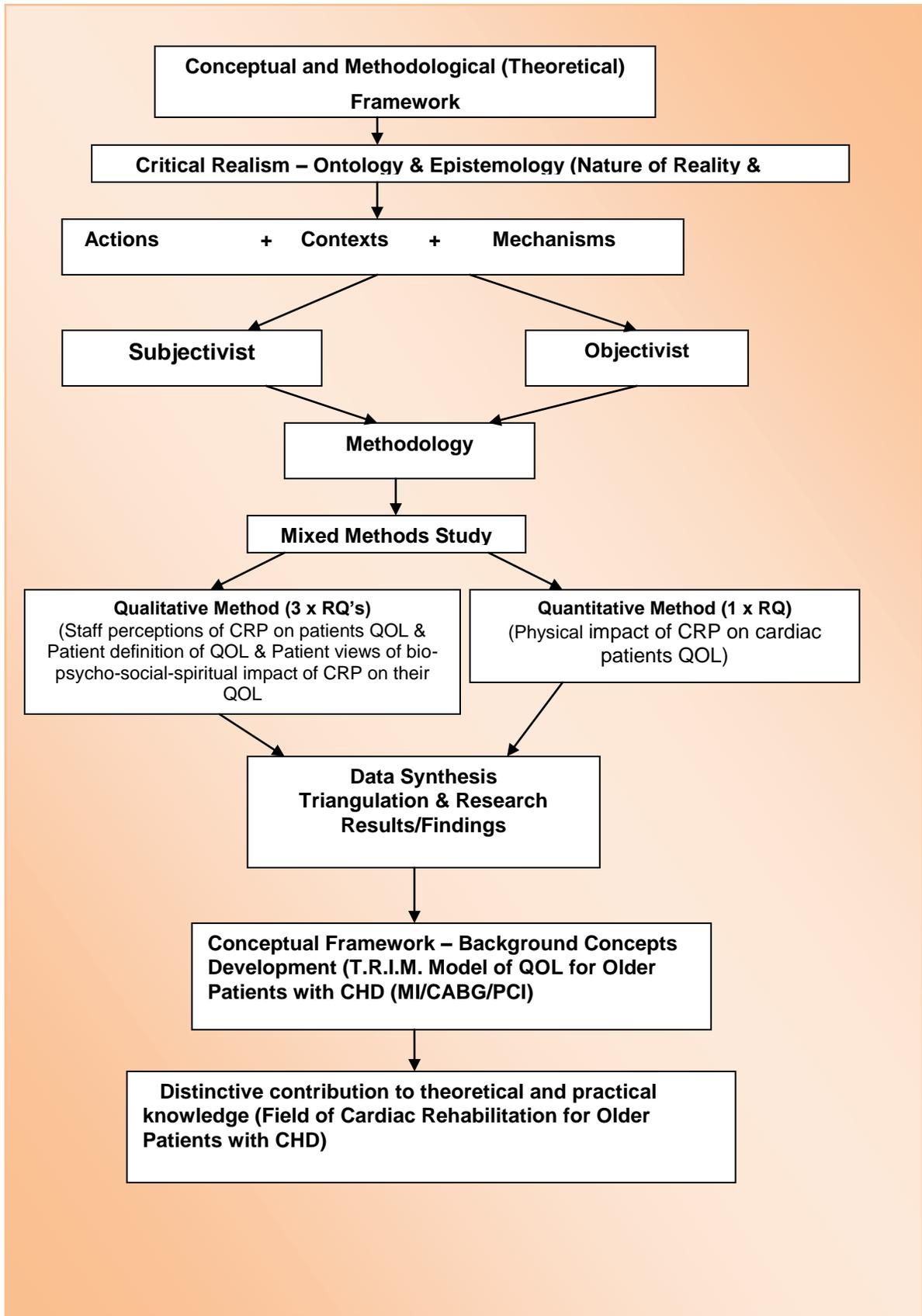
The first subjective approach of the critical realist philosophy, as applied to the second research question (*above RQ 2*) of the study, focused on ten health professionals' (an amalgam of physicians, general practitioners, physiotherapists, and hospital and community cardiac nurses) perceptions of the impact of the programme on the older patient's QOL. The researcher wished to gain an eclectic view of QOL from the health care staff in order to deepen his understanding of the concept due to various contacts, interactions, clinical meetings and care delivered to meet the holistic needs of the cardiac patients under rehabilitation on a daily basis. The research question was explored via the usage of a qualitative approach using semi-structured interviews (refer to *appendix VI - Cardiac Health Care Professional (CHCP) semi-structured interview questionnaire*) which was one hour in length and was audio-taped to enhance recall of subject material (see *left arm of flowchart p.110*).

RQ 3: How does an older cardiac patient enrolled on a CRP define QOL in relation to their cardiac event (MI/CABG/PCI)?

The second subjective approach of the critical realist philosophy, applied to RQ 3 of the study, focused on 'how older cardiac patients defined their QOL in relation to their cardiac event (MI/CABG/PCI)'. It was important to obtain what patients meant by the concept of QOL or how they uniquely defined it. Additionally, it was important to ascertain how cardiac disease impacted upon their QOL in terms of their own individualistic perceptions, feelings and emotions. It was deemed equally important to determine any relationships that may have existed between the effects of the CRP programme and the patient's QOL. This aspect of the study was performed by utilizing a qualitative approach on a small sample of seven patients via semi-structured interviews (see appendix VII - Q1- 7 from the 20 item semi-structured interview questionnaire) which lasted 30 minutes in length and were audio-tape recorded (see left arm of flowchart p.110).

RQ 4: What are older cardiac patient's perceptions, meanings and experiences of the bio-psycho-social-spiritual impact of the CRP on their QOL?

The third and final subjective approach of the critical realist philosophy, as applied to the third research question (above RQ) of the study, focused on the older cardiac patient's perceptions, meaning and experience of the bio-psycho-social impact of the CRP programme on their QOL. This took the form of a qualitative approach via semi-structured interviews which lasted 30 minutes in length and were audio-taped. These interviews (see appendix VII - Q8 – Q20 part of the same 20 item questionnaire above) were performed on the same small sample of seven patients as RQ 3 above to gain a deeper understanding of the patient's perceptions of the broader holistic impact of how the CRP influenced their QOL. It should be noted that these two sets of interviews (RQ 3 and RQ 4) were not carried out separately on these patients but, instead, were performed concurrently or in parallel succession during the same interview; in other words, they followed on from each other (see left arm of flowchart p.110).



Mixed methods research (qualitative and quantitative approaches): a critique

The mixed methods research movement has received growing national and international attention from researchers and academics over recent years (Plano Clark and Creswell 2008). This is evidenced by the surge of published work performed by researchers/academics on the methodological use of mixed-methods in the many books and journals that currently exist. Examples, which are by no means exhaustive, include: (Reichardt and Rallis 1994; Tashakkori and Teddlie 1998; 2003; Creswell 2003; Brewer and Hunter 2005; *Journal of Mixed Methods Research 2007*; and, finally, Plano Clark and Creswell 2008). The current popularity of the mixed methods research ('MMRes') movement is associated with a number of inter-related factors (Burke-Johnson and Onwuegbuzie 2004).

These factors include the potential weaknesses of *single* research approaches (qualitative or quantitative) in answering research questions or solving research problems; the continuing largely unproductive paradigm wars (the so-called '*incompatibility thesis*') that exists between qualitative and quantitative approaches and the entrenched polemical views that result between both sets of research purists (Burke- Johnson and Onwuegbuzie 2004); the increasing use of mixed methods to attempt to capture the complexity of the nature of social reality with the use of multi-disciplinary research where researchers need to complement one method with another to promote problem-solving, communication and collaboration in 'MMRes' work (Burke-Johnson and Onwuegbuzie 2004); the perspective that MMRes may act as the third paradigmatic way or occupy the 'middle ground' to reconcile the qualitative-quantitative dichotomy and, in conclusion, where answering the research question(s) takes precedence above which philosophical perspective or paradigm is preferred by the researcher (Tashakkori and Teddlie 1998).

Mixed method research ('MMRes') involves different types of combinations of qualitative and quantitative approaches to provide an in-depth and rich understanding of the phenomenon under scrutiny (Bowling and Ebrahim 2005). Another useful definition of the 'MMRes' concept includes '*research in which the investigator collects and analyses data, integrates the findings and draws inferences using both qualitative and quantitative approaches or methods in a single study or programme of inquiry*' (Taskakkori and Creswell 2007, p.4). This combined approach has been termed '*methodological pluralism*' or '*eclecticism*' which can provide rich and holistic insights, with breadth and depth of understanding, into studying phenomena in contrast to the use of mono-method research (Burke-Johnson and Onwuegbuzie 2004).

Historically, the origins and growth of different philosophical paradigms, in terms of the growth of the interpretive (qualitative) and the positivistic (quantitative) approaches, has served to create a

dichotomy between the two paradigms. This is associated with their different ontological and epistemological claims (Bowling and Ebrahim 2005). This chasm was further widened by the development of statistical methods which propagated the objective scientific study of phenomena (Bowling and Ebrahim 2005). These events have provoked the perennial qualitative-quantitative debate, or 'paradigm wars', that from time to time '*stir up*' the research community and health services research (Datta 1994). Here, researchers adopt polemical intellectual arguments over which approach is superior to the other in understanding the natural or social world (Datta 1994). Within the health setting, the 'debate' has fallen in and out of 'research fashion', fluctuating from either the creation of single quantitative to single qualitative studies. The advent of the 'mixed methods' movement forms of enquiry has provided an alternative 'middle ground' or 'third way' to facilitate the combination of both paradigms (Tashakkori and Teddlie 1998).

The sole quantitative approach as a form of social inquiry

The quantitative approach in research inquiry puts emphasis on value-free evidence, objective phenomena, causal explanations, measurement and numbers, deductive logic, and control and prediction (Robson 2002; Polit and Beck 2008). The positivistic paradigm subscribes heavily to the experimental method performed in the 'laboratory' or within 'laboratory-like conditions' of the social world (Robson 2002). This approach advocates manipulation, strict control of variables, and prediction of events, which does not easily transfer to the social reality of people. The social world is complex, at times confusing, where multi-layered realities exist in contrast to the closed single layered reality of the laboratory (Robson 2002; Pawson and Tilley 2003). Other relevant critiques launched at the positivistic paradigm range from a questionable claim that empiricism provides a sound basis for scientific knowledge, that scientific laws are not based on constant conjunctions between events, that facts and values cannot be separated and that it is impossible to differentiate between the language of observation and theory (Blaikie 1993).

Research findings derived from quantitative methods are deemed to be relatively high in reliability in view of creating consistency and replication of research results, with the assumption that the methodology is academically sound and rigorous (Polit and Beck 2008). On the other hand, quantitative studies are deemed to be relatively lower in validity, in the general sense, than qualitative approaches (Polit and Beck 2008). The validity concept begs the question 'does the tool measure what it is supposed to measure?' (Polit and Beck 2008) This question emanates from the fact that quantitative social scientists, in a bid to reach empirical truths or to determine cause and effect relationships between phenomena, tend to draw relatively 'artificial or laboratory parameters' around human subjects under study (Duffy 1985; Robson 2002).

The sole qualitative approach as a form of social inquiry

Alternatively, qualitative researchers argue that multiple-constructed realities exist, that time-and context-free generalizations are neither desirable nor possible, that research is value laden, and that it is impossible to fully disentangle causes from effects (Burke-Johnson and Onwuegbuzie 2004). They suggest that logic flows inductively from the specific to the general, and that the researcher and the researched cannot be separated because the subjective knower is the only source of reality (Burke-Johnson and Onwuegbuzie 2004). Qualitative approaches (emphasis on words, natural settings, meanings and inductive logic), on the other hand, are not concerned with measurement nor objective phenomena but, alternatively, attempt to understand the subjective reality of the actor's experience of the world (Polit and Beck 2008). This approach incorporates the subject's thoughts, experiences, feelings, values and perceptions of various phenomena within their field of influence. Qualitative research approaches, assuming the investigator creates a rigorous methodology, is viewed as higher in 'general' validity than quantitative studies as subjects are studied within their real and natural environments (Polit and Beck 2004). This situation facilitates greater researcher access to the subject's valid accounts of relevant phenomena (Polit and Beck 2004). However, in contrast to the quantitative approach, reliability is deemed to be relatively lower, which is associated with difficulty of replication of results due to the subjective nature of qualitative studies (Robson 2002). Accordingly, this approach is peculiar to the subjects and settings and to the tone of the environment at that particular moment in time (Duffy 1985; Polit and Beck 2008).

Another particular weakness of qualitative inquiry is that qualitative researchers may confirm their own pre-conceived notions, biases or preferences about social reality, whether this is done wittingly or unwittingly (Holloway 2005). This form of weakness is not just peculiar to qualitative research. Indeed, Holloway's argument can also transfer to quantitative studies where researchers can confirm their own pre-conceptions and preferences from the ways they use their methodologies and statistical analysis to confirm their research findings (Robson 2002). Consequently, qualitative and quantitative researchers can become blind to plausible alternative explanations (Reichardt and Rallis 1994). In light of this scenario, researchers are cautioned not be led astray by their own pre-conceptions or ideas which may lead one to find what one is looking for rather than the pursuit of 'truth' about phenomena. Gould's (1980, p.164) aphorism effectively summarises this potential research 'trap'. He states:

“Seek, with enough conviction aforethought, and ye shall find.”

Another potential problem that qualitative researchers need to guard themselves against is that of 'going native'. This concept refers to a loss of an objective perspective or focus of the research study whereby the researcher becomes wholly entwined within the participants' subjective world and loses sight of the purposes of the research work. This might be summarised by the idiom as '*not being able to see the wood for the trees*' (Quinn-Patton 2002).

Reconciliation: qualitative and quantitative approaches by use of mixed methods

Both discussions above are concerned with qualitative and quantitative studies performed as single studies or done in isolation from each other. When academic researchers hold entrenched dogmatic worldviews based on either a sole positivist or an interpretive philosophy, both paradigms are seen as incompatible from each other, then dialogue in both camps collapses to such an extent that it is referred to as the '*incompatibility thesis*' (Tashakkori and Teddlie 1998, p.4). On the other hand, when both approaches are viewed as flexible and useful, when the strengths of one are seen to outweigh the weaknesses of the other, and especially when answering the research questions are deemed more important than the paradigm, then the combined qualitative-quantitative approaches can be successfully applied (Tashakkori and Teddlie 1998). At this point, the combined approach 'enters a different arena' where they are now viewed as symbiotic, synergistic, complementary to each other rather than being competitive and antagonistic (Tashakkori and Teddlie 1998). Another way of viewing the possibility of compatibility between the qualitative-quantitative inquiry is to side step the seemingly divisive positivist-interpretive paradigm altogether (Robson 2002). This 'sidestep tactic' involves the use of either one of two robust philosophical frameworks of critical realism or pragmatism where each accepts subjective and objective worldviews (Robson 2002; Burke-Johnson and Onwuegbuzie 2004; Plano Clark and Creswell 2008). These well-recognized and robust frameworks are viewed as 'pacifists' or 'reconcilers' in the qualitative-quantitative paradigm wars (Robson 2002; Burke-Johnson and Onwuegbuzie 2004).

Burke-Johnson and Onwuegbuzie (2004) put forward a useful philosophical argument to synthesize the common philosophical denominators of the qualitative-quantitative debate based on agreement or consensus amongst some researchers (Reichardt and Cook 1979; Reichardt and Rallis 1994; Philips and Burbules 2000). Thus, from these perspectives, Burke-Johnson and Onwuegbuzie (2004, p.16) point out that '*basic agreement*' has been reached on the following common philosophical issues which exist between qualitative and quantitative paradigms to justify the use of mixed methods in social science research. They state that these common issues include the following:

- *“The relativity of the 'light of reason' i.e. what appears reasonable can vary across persons;*
- *Theory-laden perception or the theory ladenness of facts i.e. what we notice and observe is influenced by our background, knowledge, theories and experience;*
- *Under-determination of theory by evidence i.e. it is possible for more than one theory to fit a single set of empirical data;*
- *The Duhem-Quine thesis or idea of auxiliary assumptions i.e. an hypothesis cannot be fully tested in isolation because to make the test we also must make various assumptions;*
- *The problem of induction i.e. the recognition that we only obtain probabilistic evidence, not final proof in empirical research;*
- *The social nature of the research enterprise i.e. researchers belong to research communities and they clearly have and are affected by their attitudes, values and belief systems;*
- *Value-ladenness of inquiry i.e. human beings can never be completely value-free and that values influence what we choose to investigate, what we see, and how we interpret what we see.”*

(Burke-Johnson and Onwuegbuzie (2004, p.16)

Similar to the above argument, but this time from a pragmatic perspective, Datta (1994) puts forward some evidence to suggest the mutual co-existence of both qualitative-quantitative methodologies and their underlying philosophical paradigms. Datta (1949, p. 54) points out that both approaches have a *'history of co-existence'* in social science research where many researchers/academics have encouraged the appropriate use of both approaches to answer appropriate research questions; funding bodies have supported both approaches to assist the resolution of research problems; both approaches have influenced public and educational policy and local programme development; and, in conclusion, so much has been taught by both approaches, particularly in the field of evaluation studies (Datta 1994).

However, it would be naïve to accept the infallibility of the combined qualitative-quantitative approach as being something of a *'Holy Grail'* for producing utopian research work (Tashakkori and Teddlie 1998). It has been acknowledged that some researchers who use the combined

approach do not accurately define where and how they use combined methods in their studies (Tashakkori and Teddlie 1998). In addition, Plano-Clark and Creswell (2008) stipulate that there seems to be a lack of a commonly agreed taxonomy of mixed method designs and a lack of a *common* terminology and definition of 'mixed methods' – a concept that has appeared widely, only recently from 2003 AD, in the published literature. This lack of a *common* taxonomy and definitions can lead to a lack of conceptual clarity, as researchers can often use imprecise language to describe their methodologies or “ *they use different terms interchangeably or use different expressions to refer to the same phenomena*” (Bowling and Ebrahim 2005, p.230). Datta (1994, p.59) refers to this sort of conceptual confusion as '*mixed up models*' that emanates from '*lack of a worldview, paradigm or theory for mixed model studies*'; concluding that '*such a theory has yet to be fully articulated*'.

Mixed methods: applications to the researcher's study

In relation to the researcher's work with cardiac patients, the combined efforts of qualitative-quantitative methods of inquiry are viewed as complementary (Polit and Beck 2008). From the researcher's perspective in this study, two fundamental languages of human communication – *words or narrative (qualitative subjective analysis)* and *numbers (quantitative measurements)* – are brought together to understand the complexity and multi-layered nature of the human condition within the social world of cardiac rehabilitation practice (Robson 2002; Polit and Beck 2008). By integrating methods in this way, the weaknesses of one are compensated by the strengths of the other (Polit and Beck 2008). The potential of enhanced theoretical insights of phenomena under study (i.e. '*the impact of a CRP on the QOL of older cardiac patients*') is another possible strength of this combined, or 'triangulated', approach. In this context, different aspects of reality are explored from different perspectives ('*patients and health professionals*') to provide an holistic understanding of the social world of cardiac rehabilitation theory and practice (Polit and Beck 2008). It should be noted that caution should be exercised when using the triangulated or combined approach of mixed methods research (Polit and Beck 2004). This combined approach should be performed carefully and wisely on the basis that they are integrated judiciously so both '*can supply each other's lack*' (Polit and Beck 2004, p.274). Moreover, when the researcher's work is vindicated and supported by multiple and complementary types of data, this generates a greater confidence in the credibility, dependability and transferability of the research results (Polit and Beck 2008).

Triangulation: a critique

Triangulation is a common concept in research methodological literature and is viewed as a means of integrating qualitative and quantitative methods of inquiry to illuminate natural or social phenomena in mixed methods research studies (Creswell 2003). There seems to be no clear consensus of a single definition of triangulation (Kelle 2001). The concept tends to have a number of different meanings and usages, and rather than being a precise concept, it tends to be utilised, to a greater extent, as a metaphor by researchers (Kelle 2001). Three different meanings, or what is termed models of triangulation, are put forward by Kelle (op. cit.):

- Firstly, it is perceived as a validity model – this is where triangulation is used as a mutual validation of results on the basis of integrating different methods.
- Secondly, it is used as a means of gaining a more complete picture of phenomena under scrutiny taking on the mantle of a ‘complementary’ model.
- Finally, triangulation has been originally used as a navigational and surveying technique derived from the field of mathematics and, specifically, the branch of trigonometry (*Greek – ‘trigonas = three cornered: metry = measurement*). Essentially, if one wants to know the length of one side of a triangle, where the angle of two corners is known, all of its other dimensions can be calculated. In terms of application to research methodology, this refers to the fact that a combination of methods is necessary in order to gain any (not necessarily a fuller) picture of the relevant phenomenon at all (Kelle 2001).

Denzin (1989) was one of the first researchers to apply the notion of triangulation to the social sciences, in particular, the discipline of Sociology. He is a keen exponent of the concept/metaphor and one who constructs a useful definition of it using the analogy of a kaleidoscope – a type of an optical toy/tube containing mirrors or coloured prisms. He states:

"Each method has a different line of action toward reality and hence each will reveal different aspects of it, much like a kaleidoscope, depending on the angle at which it is held, will reveal different colours and configurations of objects to the viewer. Methods are analogous to the kaleidoscope depending on how they are approached, held, and acted toward, different observations will be revealed. This is not to imply that reality has the shifting qualities of the coloured prism, but that it too is an object that moves and that will not permit one interpretation to be stamped upon it."
(Denzin 1989, p. 235)

Denzin's (op. cit.) conception of triangulation refers to generation of information emanating from multiple sources in a bid to converge on 'truth'. Precisely what he means by truth is unknown. Nevertheless, the big question remains: '*what constitutes truth or what is truth?*' Suffice it to say that it is a difficult and complex philosophical concept to define which great thinkers and philosophers have pondered over for centuries and have not come to a consensus (Honderich 2005). It might be argued that 'truth' is associated with gaining 'accurate' or 'factual' knowledge, beliefs and insights about the study of natural or social phenomena in the natural and social sciences. In other words, the pursuit of 'truth' can be viewed as a process of the acquisition of 'accurate' learning/knowledge of various representations of 'reality' or 'realities' (Honderich 2005).

Denzin (1989, p.313) views triangulation as a vehicle that may '*overcome bias that derives from single-method, single observer and single theory studies*'. He describes four types of triangulation:

- *Data triangulation* – involves use of multiple data sources for the purposes of validating conclusions.
- *Investigator triangulation* – use of two or more researchers to analyse and interpret data.
- *Theory triangulation* – researchers use competing theories or hypotheses in the analysis and interpretation of their data.
- Finally, the most widely used of the different types remains *method triangulation*, where researchers use multiple methods of data collection about the same phenomenon. Denzin (op. cit.) suggests that two variants of this type of triangulation exist – the '*within-method*', where the same method is used on different occasions; and the '*between-method*', where different methods are applied to the same subject or phenomenon.

Kelle (2001) suggests triangulation is not the perfect panacea for all 'methodological illnesses' associated with the research strategy of mixing methods for the purpose of inquiry. Limitations exist and triangulation is not without its difficulties. Kelle (2001) makes a crucial point as he suggests that the concept/metaphor is still a long way from actual research practice and it does little to inform the researcher how exactly such a combination of qualitative and quantitative is to be achieved. Triangulation of qualitative-quantitative methods should not be used indiscriminately by researchers (Kelle 2001). This is because both research strategies are designed to achieve different research goals where different kinds of data and different sample types are utilised, including different analytical methods (Kelle 2001). Rather than obtaining the best from both

worlds, triangulation can be cumbersome where results are acquired by an 'unhappy' combination of the two, rather than what could be more efficiently achieved by the use of one of the two paradigms (Kelle 2001).

Some researchers point out that in applied fields of research such as health care, the triangulation of mixed methods is time consuming as researchers strive, with much effort, to pursue strategies that produce convergent results (Morgan 1998). It has been suggested that not every researcher can afford the luxury of sufficient time in finding the same thing twice (Morgan 1998) However, mixed methods research is deemed sufficiently flexible and applicable to the complex real-world arena of multi-disciplinary health care that health researchers are particularly attracted to appreciate the different strengths that different methods offer (Morgan 1998; Robson 2002).

Theoretical triangulation does not necessarily reduce bias, nor does methodological triangulation (MT) enhance convergent validity. This latter concept is not unlike MT which refers to '*evidence that different methods of measuring the same attribute yield similar results*' (Polit and Beck 2004, p.444). A fuller picture of reality, or a more complete picture, often emerges with the use of methodological triangulation, but it does not guarantee that the particular image is more objective or more accurate as it develops (Fielding 2001). It is wise to remember that this image of reality is a by-product of two different paradigmatic traditions with two different worldviews, each with their own assumptions about the nature of reality and knowledge. Thus, Fielding and Schreier caution researchers when using qualitative-quantitative approaches:

"When we combine theories and methods, we do so to add breadth and depth to our analysis, not to pursue an "objective" truth. He is quick to reject absolute forms of truth and the attainment of absolute objectivity which he asserts "it is not the same as rejecting the standard of truth or an attempt to be objective."
(Fielding and Schreier 2001, p.19)

Triangulation: brief outline - application to the research study

The researcher's cardiac study fits into Plano Clark's and Creswell's (2003, p.185) typology of a '*Concurrent Triangulation Strategy*' (CTS), which is one out of his six typologies which they describe used in mixed methods research studies. These typologies, including CTS, offer pragmatic ways or guidelines to researchers in order to more easily facilitate the triangulation of qualitative and quantitative methods of inquiry (Plano-Clark and Creswell 2003; Bowling and Ebrahim 2005). CTS is where the results or findings from qualitative and quantitative methods are confirmed, cross-validated or corroborated within a single study (Plano-Clark and Creswell 2003). The purpose of CTS was to provide a fulcrum about which the strengths of one approach was

balanced by the limitations of the other in a bid to provide an holistic perspective of the impact of a CRP on the QOL of older patients with CHD (Plano-Clark and Creswell 2003). In addition, it should be made clear that the researcher has used methodological triangulation in this study – the variant ‘*between-method*’ triangulation – where different methods are applied to the same subject or phenomenon (Denzin 1989).

Triangulation of data derived from the mixed methods study approach was achieved by three processes: (a) use of the four research questions; (b) macro-level of thematic analysis i.e. identification of triangulation or integrative themes; and, finally, (c) the developed conceptual model ‘*The Ripple Impact Model ("TRIM") of QOL for Older Patients with CHD (MI/CABG/PCI)*’ (refer to appendix IV).

In summary, within the context of the chosen theoretical framework of critical realism, the four research questions, use of a mixed methods research study (qualitative and quantitative methods) and the process of data analysis, has informed and guided this study. It is important to appropriately match the particular methods and methodologies to the particular research questions in order to obtain the appropriate answers or to help resolve a research problem.

Tashakkori and Teddlie (1998) support this view as they state:

“Now that these paradigm (qualitative v quantitative) wars are behind us, researchers are free to use the methods most appropriate to their research question research should be done with a clear intent to answer a question, solve a problem, or evaluate a programme. We stress the importance and predominance of the research question over the paradigm, and we encourage researchers to use appropriate methods from both approaches to answer their research question.”
(Tashakkori and Teddlie 1998, p.x)

Rationale: sample and sampling: applications to the mixed methods cardiac research study (qualitative and quantitative components)

Samples and sampling are important aspects of research activity and are concepts that demand careful thought by the researcher (Polit and Beck 2008). One important reason is that the sample selection and sample size can influence the quality, trustworthiness and credibility of the research findings, regardless of the nature of the methodology used (Polit and Beck 2008). A sample may be defined as a selection of people from a target population which, in turn, is defined as the total population that forms the focus of the study. Sampling as a concept is defined as ‘*the process of selecting a portion of the population to represent the entire population*’ (Polit and Beck 2004, p.291). Literally, purposive sampling means “*we know what we want (as researchers) ... we are sampling with a "purpose" in mind*’ (Trochim 2006, p.1). In light of this statement, a non-random

purposive sample ('NRPS') was chosen by the researcher to meet the purposes of the research study in order to satisfy the research aims and to answer the research questions (Robson 2002). In addition, this sampling method was selected on the grounds of its recognized strengths, which include 'feasibility, practicality and availability of resources', particularly within the multi-disciplinary context of a cardiac rehabilitation environment (Gerrish and Lacey 2006). In the context of this cardiac research study, it was impossible to obtain a randomized control group which would have excluded other patients from receiving cardiac rehabilitation treatment which, in turn, would have been considered unethical practice (Gerrish and Lacey 2006).

It should be recognized that the use of a 'NRPS' method has its limitations as it does not involve *random* selection (Polit and Beck 2008). 'NRPS' is a type of non-probability sampling method that is *not* based on mathematical probability or statistical inference which is the hallmark of probability sampling (Polit and Beck 2008). Thus, non-probability sampling (e.g. *quota, dimensional, convenience, snowball or purposive types*) does not give every person, item or object an equal chance of joining the research study (Gerrish and Lacey 2006). Because of this problem, potential bias or biases may potentially weaken the credibility of the study's findings, as it is more difficult to transfer the research findings to the population beyond the study sample (Polit and Beck 2008). Bias or biases may derive from the researcher's choice of either conscious or unconscious systematic under or over representation of people, items or objects selected from the population (Polit and Beck 2008).

On the other hand, probability sampling, based on probability theory in mathematics, provide researchers with knowledge of the odds or probability that the population has been well represented (Trochim 2006). In this context, *random* selection of the sample tends to minimize bias in a research study and provides researchers with more confidence as regards the generalization of the study's findings, as opposed to the selection of an 'NRPS' (Trochim 2006). For these reasons, selection of a probabilistic sample is considered to be more accurate and rigorous by researchers and academics (Trochim 2006). However, a probability sample was not considered by the researcher, based on clinical, ethical, and impractical grounds as outlined above.

In addition, concerning this cardiac study, sampling for proportionality was not the primary concern of the researcher (Trochim 2006). Probability sampling techniques tend to enhance the 'generalization' of research findings where both are perceived to be components of the positivistic paradigm (Robson 2002). Generalisation of findings remains a contentious issue in relation to the interpretivist paradigm of qualitative research where the notion of 'transferability' of findings is the preferred concept (King 2002). Moreover, it is argued that the goal of qualitative research is

geared more towards obtaining insights and developing understanding of the meaning of social processes and practices of groups that prevail within a specific location, as opposed to a strong emphasis on 'transferability' of findings from the sample to the population (Connolly 1998). Thus, in harmony with Connolly's (1998) suggestions and within the 'qualitative' component of the critical realist framework of this cardiac study, the researcher selected a 'NRPS' method to provide an in-depth study of the contexts, structures, mechanisms and outcomes of cardiac rehabilitation and to determine its impact on the QOL of older cardiac patients in hospital and community settings in the Yorkshire region of the UK. In other words, the researcher purposefully selected individual cardiac patients, individual cardiac health professionals, the cardiac rehabilitation groups of patients, and the health care settings (hospital and community) to maximize understanding of the phenomena and to provide '*information rich*' data (Patton 2002, p.230).

Patient sample: inclusion criteria

In relation to this cardiac study, the inclusion criteria were as follows:

- Cardiac patients, aged 60 years and over of mixed gender, who were referred to a comprehensive exercise-based cardiac rehabilitation programme (CRP).
- Patients who were diagnosed with a myocardial infarction (MI) and/or those patients who have undergone cardiac surgery (coronary artery bypass graft – CABG) and /or percutaneous coronary intervention (PCI or coronary angioplasty) as a result of CHD. Within the same CRP, these three patient groups were treated alike and underwent the same rehabilitation regime.
- Patients' who were relatively independent, mobile, living at home, generally retired and free from serious functional or organic mental illnesses, such as acute schizophrenia, manic-depression or dementia.
- Patients who derived from ethnic minority groups (South Asian people: Pakistanis, Bangladeshis, Indians and Sri Lankans) living in the local geographical area who were diagnosed with MI/CABG/PCI. This group of patients was included as they formed part of the local community who are known to have a higher premature death rate from CHD than the indigenous population (BHF 2008).

- Finally, all the older cardiac patients (60 years and older) were required to be medically fit by their responsible physician to be allowed to participate in the CRP.

Patient sample: exclusion criteria

- 'Older' patients (60 years and beyond) with unstable angina, serious cardiac arrhythmias, acute heart failure, or other acute serious medical or psychiatric problems were excluded from the study.
- Any patient who was deemed medically unfit to participate in a CRP by the responsible physician was excluded from the study in the interest of patient safety or safe practice.
- Even though 'age', 'ageing', 'old' and 'older' are relative concepts and difficult to define, both genders, aged 59 years and 'younger', were excluded from the study on the grounds that the focus of this research work was the in-depth study of the 'older' patient's (60 years and over) QOL on a CRP. In addition, a large body of research evidence already exists as regards the effectiveness of cardiac rehabilitation in 'younger' patients, especially in middle aged men (45 – 55 years old) (Paffenbarger 1984; Oldridge et al. 1988; O'Connor et al. 1989; Effective Health Care Review 1998; Pasquali et al. 2001; Thow 2006; Wenger 2008; Bethel 2009; Bath et al. 2009). Alternatively, there is less evidence or a lack of information as regards the impact of a CRP on the QOL of 'older' patients (60 years and older) with CHD, particularly from the 'lay' model viewpoint or as directly reported from 'older' people themselves (Bond and Corner 2004; Gabriel and Bowling; Tester et al. 2004; Sevinc and Akyol 2010).

Rationale: sample size – quantitative component: applications to the study

A non-random purposive sampling ('NRPS') technique was selected for the quantitative component of the study. There were a number of reasons, as discussed above and summarised here, for selection of this sampling method, which included:

- Ethical, feasibility and practical reasons within the multi-disciplinary environment of cardiac rehabilitation (Gerish and Lacey 2006);
- The suitability of 'NRPS' to satisfactorily meet the relevant research aim and purposes of the study and to answer the relevant research question on the physical impact of the CRP on the patient's QOL;

- Sampling for proportionality, a hallmark of probability sampling, was not the primary concern of the researcher but rather to gain an in-depth understanding of the meaning of social processes and practices of cardiac rehabilitation in the local area, as opposed to a strong emphasis on 'transferability' of findings from the sample to the population (Connolly 1998; Trochim 2006);
- And, finally, the researcher mainly used descriptive statistical techniques in the analysis of quantitative data to describe, organize, and to summarise the data (Hazard-Munro 2005). Parametric t-test tests were used in this study to determine any associations between physiological variables and were not designed for the specific purposes of establishing causality or to determine the existence of cause and effect relationships (Hazard-Munro 2005). In this study, the t-test was utilised to test the differences between two groups or to measure the differences between group means in a pre-test-post-test design on each of the eight cardiac physiological variables (Hazard-Munro 2005).

In terms of the application of the sampling process to this cardiac research study, from September 2008 to 2009, three hundred and eighty four (n = 384) patients were reviewed by health professionals for follow up within the entire cardiac rehabilitation service (Phase I to Phase III). A total of two hundred and thirty two people (n = 232) commenced and completed the CRP. This meant that one hundred and fifty four (n = 154) patients did not attend, despite offers being made by health professionals with a disclosure of the potential cardiac health benefits that the programme might provide. The researcher had knowledge, from medical/nursing records, verbally from cardiac staff and patients, that some patients could not attend due to illness (cardiac and/or otherwise) whether at home or in hospital. Unfortunately, a small group of patients died from cardiac or other related illnesses. The reasons for non-attendance for other cardiac rehabilitation patients were largely unknown.

This part of the sampling process related to the first research question (RQ 1) of the research study – '*what is the physical impact of CRP on older patient's quality of life (QOL) who suffers from a cardiac event (MI/CABG/PCI)?*' On a part-time basis within the clinical cardiac rehabilitation field (one day per week), the researcher collected the pre and post test physiological data over an eight-year period (2001 – 2009), which is equivalent to four full chronological years (eight years part-time). Forty-five (n = 45) cardiac patients – thirty males (n = 30) and fifteen females (n = 15) – met the inclusion criteria and became the total size of the cohort chosen by the researcher for the quantitative component of the study. Thirty-six (n = 36) patients completed the CRP and were those people who voluntarily agreed to participate in the study.

Out of these thirty-six patients (n = 36) there were eleven (n = 11) males with a diagnosis of CABG, twelve (n = 12) males with an MI, three (n = 3) females with a CABG, six (n = 6) females with an MI, three (n = 3) males with a PCI, and one (n = 1) female from an ethnic minority with an MI and PCI with a stent. This final number constituted one third (1/3rd) of the total older cardiac population (60 years and older) who attended and completed the CRP over a one-year period (September 2008 – 2009). However, an examination of the initial starting figures (n = 45) reveals that nine (n = 9) cardiac patients (mixed diagnosis of MI/PCI/CABG) (five (n = 5) males and four (n = 4) females) were lost from the final cohort and thus the study:

- Unfortunately, three patients died from a CHD-related illness at home (reported to the cardiac rehabilitation team by relatives of the deceased).
- Three patients commenced but did not complete the programme with no reasons for drop-out provided.
- Two patients were unable to complete the programme due to a recurrent cardiac event. Subsequently, they were deemed medically unfit by the physician on account of the development of acute arrhythmias.
- One patient dropped out of the study who cited 'lack of interest' in the research work but she did complete the CRP.

Rationale: sample size – qualitative components (patients and health professionals): applications to the study

In the context of sample size used in flexible designs, where, arguably, a mixed methods study may be categorized as a flexible design in real world research, Robson (2002, p.199) contends that '*it is difficult to pre-specify the number of observation sessions, interviews etc required in a flexible design study... the basic notion is that you keep going until you reach "saturation"*'. This latter concept occurs '*when further data collection adds little or nothing to what you have already learned*'. In terms of the qualitative components of this cardiac study, seventeen people in total (ten cardiac patients and seven cardiac professionals – see below) were selected for a one-hour semi-structured interview mainly to satisfy the research aims and to answer the research questions. In light of Robson's and Patton's (op. cit.) views, it was considered that within this total qualitative sample size that data saturation was reached when the researcher began to become aware of the repetitive nature of the subject material, in what Bowen (2008, p.140) describes as '*data replication*', which became evident between the ninth and tenth interview with the health

professional participants and between the sixth and seventh interview evident with the patient participants. In other words, the information from both groups was beginning to become redundant where no new information on the subject matter of the research was produced by both patient and professional groups (Bowen 2008). Thus, as a consequence of reaching data saturation, it was considered that the size of the sample chosen provided sufficient numbers of participants to perform an in-depth and '*information-rich*' study of the phenomena from both professional and lay perspectives (Patton 1990: p.169).

This part of the sampling process related to the second research question (*RQ 2*) of the research study i.e. '*What are Cardiac Health Care Professional's (CHCPs) perceptions of the impact of the CRP on the older patient's QOL who suffers from a cardiac event (MI/CABG/PCI)?*' A non-random purposive sample of ten cardiac health care professionals (CHCPs) were chosen for semi-structured interviews to gain a comprehensive, multi-disciplinary and eclectic view of their perceptions of the impact of a CRP on older cardiac patient's QOL.

The sample comprised of three different health professional groups as follows:

- Three doctors: General Practitioner (GP) and two senior hospital physicians.
- Two physiotherapists (inter-change between hospital and community settings).
- Five nurses: four senior qualified nurses and one qualified junior nurse involved in cardiac rehabilitation practice in hospital and community settings.

This part of the sampling process related to the third and fourth research questions, *RQ 3* i.e. *how does an older cardiac patient, enrolled on a CRP, define QOL in relation to their cardiac event (MI/CABG/PCI)?*; and *RQ 4* – *what are the older cardiac patient's perceptions, meanings and experiences of the bio-psycho-social-spiritual impact of the CRP on their QOL?* A non-random purposive sample of seven cardiac patients was chosen to provide their definitions and meaning of QOL (i.e. *RQ 3*). The same sample of seven patients were chosen to determine the patient's perceptions, meaning and experience of the bio-psycho-social-spiritual (holistic) impact of the CRP on their QOL (i.e. *RQ 4*). The sample consisted of a mixed gender of patients with a diagnosis of either an MI/PCI/CABG or a mixture of these:

- Two females were diagnosed with a STEMI (ST (wave) Elevation Myocardial Infarction) and one female with a dual diagnosis of PCI (Percutaneous Coronary Intervention) with a stent and a NSTEMI (Non-ST wave Elevation Myocardial Infarction).

- One female was diagnosed with a CABG (cardiac surgery – Coronary Artery Bypass Graft). The female age range was between sixty-seven to seventy-six years of age.
- Three males: (one person diagnosed with a CABG, one with a NSTEMI and one with a dual diagnosis of PCI and STEMI.) The male age range was between sixty-three to eighty-two years of age.

Ethical Issues: application to research study

Ethical issues are important notions to consider in all research studies, particularly those that involve human participants (Morse and Field 2002). In a concerted effort to stimulate and advance knowledge through the creation of high-quality research within a defined and clear ethical framework, the Department of Health (2005) have published guidelines in five governance domains in their report entitled 'Research Governance Framework'. These domains consist of ethics, science, information, health, safety and employment, finance and intellectual property. This document sets out national standards for all research practitioners to uphold ethical principles in health and social care research (Research Governance Framework (RGF) 2005). They set out delivery mechanisms to ensure these standards are met and identify national and local monitoring systems to ensure that practitioners adhere to them. Moreover, the document clarifies the ethical responsibilities and accountability expected of all of those people, regardless of status in terms of academic, professional, clinical or non-clinical roles, to perform the highest standard of just, righteous and ethical research in the best interests of patient care and evidence-based practice (RGF 2005).

The cardinal principles of ethical practice in terms of their application to health research include beneficence, respect and justice (NMC 2008). Historically, to a greater or lesser extent, these moral principles have been debated for centuries by philosophers, such as Aristotle in '*Nicomachean Ethics*', and others in the 18th and early 19th century, such as Hume and Kant (Polit and Beck 2008). In the modern era, the principles are also connected to the events that took place at the Nuremberg trials after the Second World War – the Nuremberg Code (1947), followed by the Helsinki Declaration (1964) and, lastly, the Belmont Report (1979) (Polit and Beck 2008). These ethical principles are particularly underlined in the recent research governance framework in which they are expected to be clearly adhered to and demonstrated by all research practitioners in the production of quality research work (RGF 2005).

The literal definition of 'beneficence' derives from the Latin concept of '*beneficium*' (*bene = good, facere = to do*), which means '*to do good, to be kind, charitable and altruistic to fellow human*

beings' (OED 1982). Research participants need to be assured that, where possible, they will be free from harm (non-maleficence – literally means (Latin) - *male = evil, facere = to do*) or that, at the very least, risk or harm to them will be minimised during the course of a research study (OED 1982; Gerrish and Lacey 2006). Researchers should perform a risk/benefit assessment and clearly disclose potential risks and benefits to the research participants. Risks are multi-faceted; examples may be either physical (pain, discomfort, drug side effects), psychological (emotional distress, anxiety), or economical (cost of transportation, loss of earnings) (Polit and Beck 2008). Benefits of research participation may occur at individual level in terms of gains in self-knowledge and reflection and helping others in similar situations or accessing drug therapies or medical interventions that otherwise would be unavailable (Polit and Beck 2008). On a wider scale, research may benefit organisations or society at large in terms of advancing skill and knowledge in practical, theoretical, professional or clinical spheres (Polit and Beck 2008).

The principle of beneficence was applied to the cardiac research study by clearly informing the participants of the potential risk and benefits attached. Risks were regarded as negligible as the study did not involve invasive and potentially painful medical procedures for participating patients and health care professionals. All participants were requested to partake in semi-structured interviews, carried out in the hospital and in the patient's home, around the concepts of CRP and QOL which involved elements of self-disclosure. This process may have induced some emotional distress or anxiety, particularly if personal information was disclosed. In practice, this situation did not occur, as the participants stated how *'much they enjoyed the interview and the conversations that took place between us'*. Other benefits that some participants mentioned were *'I hope the information I gave and your study help other patients with heart attacks and the things you go through in heart surgery'*.

Respect for personhood is another important ethical principle to maintain when performing research with human participants (NMC 2008). Respect invokes the right to self-determination, which stipulates that human beings should be treated as autonomous agents where they have the freedom and independence to control the activities of their own lives (RCN 2009). In research practice, participants should be requested to join the research study on a voluntary basis without any form of coercion, fear, bias or prejudice from the responsible researchers in charge of the study. The participants have the rights to full veracity and full disclosure about the nature of the study both verbally and in writing about its aims and purposes, design and potential outcomes (if known) and the potential inherent risks and benefits (Gerrish and Lacey 2006). Clear, jargon-free, well-written information about the study should be made available where sufficient time is given for participants to ask questions about any aspect of the study (Gerrish and Lacey 2006).

At the local hospital trust, the researcher approached the staff and patient population via meetings and prior to the commencement of the CRP to verbally obtain their permission to voluntarily join the study and to verbally inform them of its nature and purposes. Once verbal permission was gained from both parties to join the study, a clearly written jargon-free information leaflet was given to both patients and staff, informing them of the aims of the study, its basic design and its potential outcomes and benefits (see appendix VIII). The researcher subsequently met the patients and staff after one week for a questioning and answering session performed with honesty and truth-telling about the various aspects of the study.

The researcher wished to stress that access to the appropriate patient population and their recruitment took place over the entire length of the research study (2001 – 2009 AD). Cardiac rehabilitation was structured as a six-week 'rolling' programme performed twice weekly in both hospital and community settings. This meant that once one set of cardiac patients finished the CRP, a new set of patients joined. This arrangement had logistical implications for the maintenance of ethical practice in the study. Respect for personhood, preserving anonymity and confidentiality, truth-telling, voluntary participation, right of participant withdrawal from the study and informed consent was performed by the researcher over the full duration of the study in relation to the patient population (2001 – 2009 AD). This situation did not apply to the access, recruitment, and the preservation of ethical principles for staff participants. These actions or practices were performed and upheld by the researcher over a short period of time and where the staff population were treated as a whole group.

In relation to this cardiac research study, ethical clearance to perform the study was sought from the University Research Ethics Committee (UREC), who was presented with written information about the nature of the study and the written consent form. Both documents suffered from an excess of technical information which may have been difficult to understand by participating patients. Accordingly, the language and style was 'toned down' into simple, clear, jargon-free English and, subsequently, was cleared by the UREC.

The ethical principles of justice, righteousness or fairness applied to the research context incorporate the participant's right to privacy by the maintenance of anonymity, confidentiality and data protection (Polit and Beck 2008). Information about the participants or their identities must not be disclosed by the responsible researcher to third parties or to the public unless it is believed, in very exceptional circumstances, that the patient is in clear danger to themselves, to others or society (RCN 2009). Data must be kept anonymous by relevant identity coding or use of pseudonyms, kept safe and secure, placed in a locked drawer and accessed only by the researcher or other significant authorised person(s) on a need-to-know-basis. Participants must

be assured that all relevant information or data that is retained about them must be destroyed as quickly as possible once the study is completed (Polit and Beck 2008).

Regarding this study, the researcher subsequently attended the Local Research Ethics Committee meeting (LREC) at the hospital trust after ethical clearance was granted from the University Research Ethics Committee (UREC) (*see appendix IX – letter to LREC seeking permission for ethical clearance and e-mail communications regarding attempts to obtain a copy of clearance letter*). The researcher reassured LREC about maintaining patient anonymity and confidentiality through a number of mechanisms. The researcher assured the participants that their identities would not be disclosed to any third party. This was protected by the use of pseudonyms in relevant documents. It was made clear to all participants (staff and patients) that the local hospital trust would also be kept anonymous by the use of a fictitious name. Confidential data held on documents, audio tapes and transcripts were protected and made safe by the use of a locked drawer where the researcher and the 'one-only' allocated transcriber were allowed access. The same transcriber was used for interview transcriptions in five out of the seven patient participants. Once the transcriber had transferred the audio-taped interviews onto transcripts, the data held on the computer about the patient participants were permanently deleted. All other transcriptions were performed by the researcher. This work included the production of transcripts from two patient participants and nine cardiac professional participants. One cardiac health professional refused to have the interview audio-taped and the reason(s) for refusal was not disclosed to the researcher. However, he agreed to allow the researcher to take field notes during the interview.

Informed consent occupies a central ethical position in all research activities (Polit and Beck 2008). The researcher must gain verbal and written consent from the participants once they have been fully informed about the nature of the study so that they can make an informed decision about whether or not to join it (Gerrish and Lacey 2006). The researcher must inform the research participants that they have the right to withdraw from the study at any time without any punitive measures to themselves as regards their rights to health care interventions and treatments by the multi-disciplinary team (Research Governance Framework 2005).

With regard to this study, the researcher approached both staff and relevant patients for verbal and written permission to join the study via a consent form (see appendix X). Both parties were advised and reassured that they could voluntarily withdraw from the study at any time without an explanation and without fear, bias or prejudice. Patients were reassured that if they wished to withdraw from the study that there would be no infringements whatsoever to their rights for quality care, treatment or medical/nursing interventions. All the staff approached gave their written

consent to join the study. The majority of relevant cardiac patients approached willingly gave their written consent to join the study. From time to time, over 2001 – 2009 AD, a small number of patients refused to join on the grounds of “*not being interested enough*”, “*being too busy to fill in forms, going on holiday, visiting their families in the UK or abroad and finally, some gave no explanations*”. Accordingly, this small group of patients were excluded from the study.

A reflective overview on the research study’s preliminary pilot study

Within this reflective account, I have decided to use an adapted version of Powell's (1989) reflective framework in an attempt to produce a systematic and cogent account of a series of reflections on the study’s pilot testing process. It should be recognized that there is conceptual overlap between the affective and cognitive domains of the framework, as it is difficult to have discreet well-defined categories as one makes an attempt to separate thoughts, feelings, and emotions from the learning process (Powell 1989).

I wanted to stress three areas in relation to the pilot study:

- I have stressed the importance of a pilot test as a central and core issue in relation to the interrogation of an existing QOL tool termed the ‘McNew Quality of Life tool after an Myocardial Infarction’ (Mac New QLMI) (Hillers et al. 1994).
- I have emphasised the contextual aspects of study with reference to the research site and the characteristics of the participants.
- Lastly, I have highlighted what learning has taken place as a result of reflections on the experiences of pilot testing.

Reflection is an abstract concept and difficult to define (Johns 2004). However, it is viewed as an intellectual and affective activity through which individuals explore their experiences in order to develop new understanding and appreciation (Johns 2004). Reflection can be viewed as a process of turning thoughtful practice into potential learning situations and it involves the utilisation of theory in practice and the relation of practice to theory (Johns 2004). Thus, for many, reflection as an active mental process involves the searching and the exploration of experiences, the analysis of thoughts, feelings and emotions, and the critical review of knowledge and learning (Johns 2004).

Powell's (1989) reflective framework consists of five levels of reflectivity:

- Descriptive reflectivity: this involves observation, awareness and description, factual details, context, and significant background factors.
- Affective reflectivity: includes an awareness of feelings and emotions.
- Judgmental reflectivity: involves an awareness of value judgments and the subjective nature of these. These first three categories relate to the affective component of the model with reference to thoughts, feelings, and emotions.
- Conceptual reflectivity: represents an awareness of the decision-making process, and an assessment of whether further learning is required to assist decision-making. This category focuses on connecting ideas, feelings, experience, and knowledge.
- Theoretical reflectivity: points towards awareness of the relationship between theory and practice and practice to theory. It focuses on the evaluation of existing experience and knowledge. Theoretical reflectivity incorporates the development of new knowledge and insights, as this becomes an integral part of our cognitive schemata by taking ownership of it. These latter two categories can be referred to as the cognitive, learning or the intellectual domain of the framework. However, before application of the model, allow me to briefly examine the concept of pilot study from a theoretical perspective.

The importance and purposes of the preliminary pilot test

A pilot study can be used in two different ways in social research. Firstly, it can be used as a feasibility study which, according to Polit and Beck (2004, p.51), '*is a small scale version or trial run performed in preparation for the major study*'. However, a pilot study can also be the pre-testing or 'trying out' of a particular research instrument (Gerrish and Lacey 2006). Performing a pilot study is an important part of the research process, as it can give advance warning about where the main research project could fail, where research protocols may not be ethically acceptable, or whether proposed methods or instruments are inappropriate or too complicated. Robson (2002, p.383), a strong supporter of pilot testing, cautions researchers to '*pilot if at all possible*'; moreover, he sees the pilot study as an '*opportunity to learn on the job*', particularly with flexible designs such as a mixed methods study approach.

The purposes of my pilot study in relation to the quantitative method were two-fold in nature. Firstly, I wanted to determine whether the quantitative component of the research study was feasible, workable and realistic. The quantitative approach in this pilot study was defined as performing a pre-test-post-test design with relevant hypotheses which focused on the measurements of eight physiological parameters relevant to CHD. These included blood pressure (systolic and diastolic), heart rate, level of aerobic exercise, body mass index (BMI), Hospital Anxiety and Depression Scale (HADS) and patient self-reported smoking (tobacco) rates. These parameters were measured at patient entry to the programme and repeated six weeks later at exit from the CRP to determine the physical impact of rehabilitation on the patient's QOL. Secondly, I wished to pre-test an existing quantitative QOL tool ('McNew QLMI') for a myocardial infarction (MI) in older cardiac patients (Hillers et al. 1994).

McNew quality of life tool after a myocardial infarction (MI) ('McNew QLMI): validity, reliability and responsiveness (sensitivity)

The original 'Quality of Life after a Myocardial Infarction (QLMI)' questionnaire was developed to measure the effectiveness of cardiac rehabilitation interventions on the cardiac patient's health-related quality of life (HR-QOL) after a myocardial infarction (MI) (Hillers et al. 1994). The current name of this QOL tool is the '*McNew (or MacNew) QLMI*', a name which reflects its successful modifications performed at McMaster University in Canada (Valenti et al. 1996). After an evaluation of the tool's usage in Australia, it underwent minor modifications to facilitate easier administration to respondents basically from interviewer-administered mode to respondent (patient) self-administered mode (Valenti et al. 1996; Hofer et al. 2004). Other adjustments included the removal of two items, with the addition of three new ones, resulting in a 27-item questionnaire. In addition, exploratory factor analysis was performed to develop a new scoring system in the physical, social and emotional domains of the tool but, otherwise, the McNew QLMI remains identical to the original QLMI tool (Ribera et al. 2006).

The McNew tool was designed to assess how daily activities – physical, emotional, and social functioning (the three domains of the tool) – are affected by CHD and its treatment regimes (Hofer et al. 2004). CHD, in this context, is defined as patients with a diagnosis of Angina Pectoris (AP), Myocardial Infarction (MI) and Heart Failure (HF). When selecting a QOL tool for use in research work, it is important to be able to assess the rigour of its psychometric properties (Hofer et al. 2004). These include validity, reliability and responsiveness or sensitivity. Validity is defined by the following interrogative – does the tool measure what it intends to measure and does it meet the researcher's needs? Reliability refers to reproducibility or the ability to replicate results consistently over time. Responsiveness is defined to as the tool's ability to respond to change or

to be sensitive to change in health status/condition, particularly the detection of small changes, over time (Hofer et al. 2004).

The psychometric properties of the McNew tool have been well evaluated in a number of different geographical contexts as it has been translated into a number of different languages for use in different countries, for instance, Dutch, English, Farsi, German, and Spanish versions of the tool (Hofer et al. 2004). These authors suggest that the McNew QLMI, a disease-specific QOL tool, was the most appropriate for patients with CHD, based on evidence supporting the measurement properties of reliability, validity, and responsiveness. They suggest that reliability of the tool is high, which demonstrated internal consistency and intraclass correlation coefficients ($= >0.73$) for the three domains, regardless of its use in the cross-cultural context.

Different types of validity properties of the McNew (e.g. face and content, construct and predictive validity) were evaluated by relevant statistical methods (Hofer et al. 2004). This included factor analysis, observed variance, and logical relationships between items and other comparison tools. Overall, the validity of the tool was deemed 'good', which supports its use in different international contexts (Hofer et al. 2004). The tool was regarded as responsive and sensitive to changes in health-related QOL *'following various interventions for patients with CHD with 11 of 13 effect size statistics > 0.80'* (Hofer et al. 2004, p.1). Moreover, the respondent-burden for completion of the tool was deemed low as it took approximately 10 minutes for respondents to complete, and its acceptability to users was demonstrated by high response rates of over 90%. Based on the strengths of these evaluation studies of the tool's psychometric properties, Hofer et al. (2004) recommend that the 'McNew' is a valuable tool for assessing health-related quality of life in patients with CHD.

Dempster et al.'s (2004) research work supports Hofer et al.'s (2004) conclusions as regards the soundness of the validity and reliability properties of the use of McNew QLMI tool in patients with CHD. However, they point out in their exploratory study, *'that ambiguity exists with the allocation of items to the three domains of the tool (physical, emotional and social) and the factor structure has not been confirmed previously among people in the UK'*. (Dempster et al. 2004, p.1). To address these issues, they recommend *'that the groupings of the items on this questionnaire could be modified and improved to provide more useful indicators of health-related QOL'* (Dempster et al. 2004, p.1).

More recent evidence from Hofer et al.'s (2008) work suggests that the German version of the McNew QLMI tool demonstrates that it possesses acceptable cross-cultural psychometric properties of validity, reliability and responsiveness in the evaluation of QOL in patients with heart

failure. Based on prior consistent evidence of the strength of the tool's psychometric properties in measuring QOL in patients with CHD (MI, angina and arrhythmias) in major European languages (e.g. English, Dutch, German, Portuguese and Spanish), they suggest that *'the tool has the potential to become a "core" measure for health-related QOL (HR-QOL), at least in the German language'* (Hofer et al. 2007, p.500).

Reflections: use of the McNew QLMI tool: psychometric properties

I chose the 'McNew QLMI' tool to assess QOL indices in a group of cardiac patients (MI/PCI/CABG) on the grounds of the strengths of its psychometric properties regarding validity, reliability and responsiveness (Hillers et al. 1994; Hofer et al. 2004; Dempster et al. 2004). Although it consists of 26 questions (i.e. original QLMI; McNew modified to 27 questions), it is considered to be patient-friendly as it is easy to use this self-completed questionnaire (Taylor et al. 1998; Hofer et al. 2004). It is relatively jargon-free and easily comprehensible, and it appears to transfer and apply relatively easily from its Canadian origin to the UK health care context (Taylor et al. 1998). Importantly, the tool is disease-specific devoted to measuring QOL indices on patients with CHD. This tool is dissimilar to a generic instrument such as the well-known SF-36 which measures broad-based health outcomes which are not disease-specific (Taylor et al. 1998). The McNew QOL tool lends itself to statistical analysis of data by means of non-parametric tests. Within the QOL literature, it is viewed as a reliable, valid and responsive (sensitive) tool, which are important criteria for selection (Hillers et al. 1994; Taylor et al. 1998; Hofer et al. 2004; Dempster et al. 2004).

Each question on the McNew QOL tool is scored from 1 to 7. A score of 1 to 3 represents a relatively 'poor' score e.g. *'the patient nearly always feels tired after his/her heart attack'*, whereas a score of 5 to 7 would represent the patient *'hardly ever experiencing tiredness after a heart attack'*. A score of 4 would represent 'mediocrity', (an 'in-between' score), between these two extremes e.g. *'feeling tired from time to time'*. The tool is broken down in to five domains consisting of five to six questions in each domain. The domains include confidence, restriction, self-esteem, emotions and symptoms. The relevant questions relating to each domain were interspersed throughout the tool (see appendix XI).

I proceeded to analyse this 'second entry' of data to the computer by the use of inferential statistics using non-parametric correlation tests (Spearman's Rho) after seeking the advice of the university statistician. I was more comfortable this time with the analysis of data as it appeared that some useful correlations were evident. For example, in the symptoms domain (pre-test), a correlation existed between *'how often you feel worn out or low in energy'* and *'how often you are*

bothered with aching or tired legs' (correlation coefficient = .730, $p = .04$ (correlation is significant at the 0.05 level (2-tailed). In the above domain, further correlations exist between *'how often felt short of breath and how often felt dizzy or lightheaded'* (.802, $p = .017$). In summary, it seemed that useful correlations existed between variables mainly in the physical domain of the tool vis-à-vis symptoms and restriction.

Less convincing evidence existed regarding correlations between the more abstract psychosocial domains of the tool in relation to confidence, self-esteem and emotions. For example, no real correlation was evident between *'how often you felt unsure about how much exercise to do and how often you felt apprehensive or frightened'* (confidence domain (pre-test) – correlation coefficient = .452, $p = .261$). Weak correlations existed between *'how often you were happy with your personal life and how often you were frustrated, impatient or angry'* (emotions domain (pre-test) – correlation coefficient = .525, $p = .182$). Cardio-specific QOL tools are deemed holistic and multi-dimensional in nature (Smith et al. 2000). These tools are designed to encapsulate the measurement of physical, social, and psychological domains of QOL in patients who suffer from a cardiac event. This event 'attacks' the bio-psycho-social-spiritual entities within the individual's sphere of experience. As a consequence, I would have expected some correlations to exist between the psycho-social elements of this QOL tool which were not discovered. It seemed that some limitations existed with some of the psychometric properties of McNew's QOL tool.

There is conflicting evidence in the literature about the effectiveness of these tools to measure QOL. Some 'generic' QOL tools (e.g. Nottingham Health Profile (NHP) and Sickness Index Profile (SIP), frequently used to assess QOL in cardiac patients, have been criticized for failing to address the criterion of sensitivity or responsiveness (Taylor et al. 1998). This relates to the tool's ability to measure or quantify the effect of a therapeutic intervention. To do this, the measure must be sensitive or responsive to clinically important changes in patients' perceived health (Taylor et al. 1998). Sensitivity to change over time is an important issue to examine in outcome measures in cardiology where, in some respects, therapeutic effect can be modest and undramatic (Taylor et al. 1998). In contrast, other researchers examined a range of different generic QOL tools used in patients with CHD (for example, Quality of Well Being Scale, SF 6D, and so forth) (although not NHP and SIP) and found evidence of effective discriminatory properties in terms of the sensitivity or responsiveness of these tools (Garster et al. 2009). However, some controversy surrounds the rigour of the 'sensitivity' property of the McNew QLMI tool (Smith et al. 2000). It has been evaluated by its developers as possessing a high degree of reliability and is more responsive than other questionnaires in detecting changes in QOL over time (Hillers et al. 1994). Even when it comes to selecting cardio-specific QOL measures in cardiac patients, there is no consensus amongst researchers as regards the

suitability of these tools in the assessment of QOL in cardiac disease (Taylor et al. 1998). In particular, Smith et al. (2000) specifically examined the sensitivity of the cardio-specific McNew QLMI tool and discovered that it had poor sensitivity properties in cardiac patients when compared to a generic tool (SF 36). As noted by Yusuf et al. (2004), sensitivity criteria in disease-specific QOL tools (e.g. McNew) are meant to be higher than the generic QOL tools (e.g. SF 36 and NHP).

Some QOL tools do not address the patient's or respondent's perspective of QOL, but instead tend to evoke the researcher's or 'expert's' view of the concept performing the study (Hunt 1997). However, it should be noted that this did not occur with the development of the original QLMI tool as health professionals, cardiac patient perspectives and the literature on QOL were all consulted to provide an holistic and an eclectic account of the concept (Hofer et al. 2004). Overall, evidence exists to demonstrate that some generic and cardio-specific QOL tools are inconclusive in terms of their effectiveness in measuring QOL indices in cardiac patients (Hunt 1997; McDuff 2000; Smith 2000). It is interesting to note that the vast majority of QOL tools are mainly quantitative in nature, devised mostly by medical researchers within a positivistic paradigm. This poses a dilemma: how does one capture the elusiveness of QOL – a highly subjective, personal and abstract concept – by quantitative measurements? Or to put it, alternatively, how does one 'quantify a qualitative concept'?

The McNew QLMI tool consists of a 27-item questionnaire where each question is scored from 1 to 7. A score of 1 to 3 represents a relatively 'poor' score e.g. *'the patient nearly always feels tired after his/her heart attack'*, whereas a score of 5 to 7 would represent the patient *'hardly ever experiencing tiredness after a heart attack'*. A score of 4 would represent 'mediocrity' (an 'in-between' score) between these two extremes e.g. *'feeling tired from time to time'*. The tool is broken down in to five domains consisting of five to six questions in each domain. The domains include confidence, restriction, self-esteem, emotions and symptoms. The relevant questions relating to each domain were interspersed throughout the tool (see appendix XI).

To test the CHD physiological variables (a pre-test/post-test design) and the quantitative QOL tool (also a pre-test/post-test design), I recruited a small sample (mixed gender) of eight patients (n = 8). They consisted of four males (n = 4) and four females (n = 4) with an age range between sixty-three and seventy-six years of age and who met the study's inclusion criteria (*refer to p.6 – 7*). Two male patients were diagnosed with an MI, one male with a PCI, and one with a CABG. Two female patients were diagnosed with a CABG, one with an MI and one with a PCI. In addition, the McNew QOL tool was used on the same sample of eight patients above where QOL indices were measured prior to them commencing the six-week CRP (pre-test) at the hospital. At

the end of the six-week CRP, QOL indices were measured once more (post-test), where they were statistically compared and contrasted to the baseline entry values.

Affective domain: descriptive, emotional, and judgmental reflectivity: quantitative approach

Generally, as a consequence of the pilot test, I was content that the main quantitative component of the study was feasible and realistic. This 'do-ability' was related to the performance of a pre-test - post-test design in relation to the assessment of different physiological variables relevant to CHD within the CRP at a local trust. However, certain problematic issues, outlined below, arose with the 'quantitative' pilot testing of the McNew tool. Henceforth, my reflective account has primarily focused on the pilot testing of this tool. My original plan in this research study was to utilize the tool to assess QOL indices and to create a largely quantitative piece of work (80%) on the impact of a CRP on the older patient's QOL. Subsequently, this work would be triangulated with a smaller qualitative study (20%) on the subjective impact(s) of the programme on the older person's QOL. In essence, this still constituted a mixed methods study with more emphasis on the quantitative component at this point in time.

Cognitive domain: conceptual and theoretical reflectivity: Interrogating the QOL tool: quantitative approach

This time I thought I had resolved the problem. I had completed the QOL pilot test on the sample of eight older patients. The statistics appeared useful, with some correlations being demonstrated between the questions in each of the five domains. Moreover, some correlations were also evident between the domain entities themselves. The statistician and I had worked hard this time to enter the figures accurately. I had entered the data for the second time into the SPSS statistical package.

The 'first time' on entry of data into the computer, I experienced difficulty. I kept losing one of my patients from the sample when 'merging pre-test and post-test data', which is a minor technical task within the SPSS package. When I statistically examined the data for correlations between respective variables, they were relatively weak in relation to questions within each domain and between the domains. This posed an important question: to what extent was this issue a technical problem with data entry, or was there something methodologically and/or theoretically 'aberrant' with the QOL tool?

Correlation tests are an important concept in statistics, as they test associations, links, or relationships between variables. The parameter 'p' is termed the population 'correlation coefficient' and measures the strength of the linear relationship between X and Y. The correlation

coefficient assumes a value between -1 and $+1$. If $'p' = 1$, there is a perfect direct linear correlation between the two variables, while $p = -1$ indicates a perfect inverse linear correlation. If $'p' = 0$, the two variables are not correlated (Hazard-Munro 2005). With a valid and reliable QOL assessment tool, useful correlations (inter and intra domain) should be evident throughout the tool. This was not the case at the 'first entry' of data to the computer and its consequent statistical analysis.

To eliminate the technical problem, I re-entered all the QOL data into the computer for the 'second time'. This time I took a close account of the 'raw data', carefully checking the pre- and post-test scores. This yielded a rather surprising result, with the majority of patients scoring highly (between 5 and 7) on the pre-test McNew QOL tool. This result left only a small margin for improvement in QOL scores after the rehabilitation programme (post-test); this phenomenon is referred to as the 'ceiling' effect (Taylor et al. 1998). However, the raw data, when examined post-test, demonstrated a small noticeable improvement in overall QOL scores, despite the high QOL scoring by the respective patients in the pre-test. This observation was supported by relevant descriptive statistical analysis within SPSS. However, according to Polit and Beck (2008), this discovery still raises a problematic question in research vis-à-vis the '*Hawthorne effect*' in terms of how truthful (advertently or inadvertently), were the patients in the pre-test QOL scores? I will now dwell on the following particular exemplar to illustrate this latter point.

The context: research site and participants: affective domain: descriptive, emotional, and judgmental reflectivity: quantitative approach

In the course of the pilot study, an interesting observation arose in the local clinical area where cardiac rehabilitation took place. One particular lady named 'Jane' (*pseudonym*), who had suffered an MI, revealed to me and the rehabilitation staff that she was suffering from reactive depression since the recent death of her husband. Similar to all the other patients in the pilot study, I requested her to complete the McNew QOL questionnaire. I gave her a standard letter with jargon-free language and examples that explained to her how to complete the document. I personally checked her understanding by a questioning and answering approach. I also emphasized to Jane, like the other patients in the pilot sample, to be as honest as possible when responding to the questions. She completed the pre and post-test QOL questionnaire without any real problems.

On analysis of her pre-test, I noticed that she gave an unexpected high QOL score (5 - 7), which is perceived as a 'good' score. Equally, she scored highly in the post-test with scores at 6 and 7. A number of questions arose. Why did she score so highly in the pre-test, even in the

psychological domains of the tool, when she was depressed? Was she intentionally or unintentionally truthful? Was this tool encapsulating the totality of her experience in the physical, psychological and social domains of her QOL? Subsequently, I checked this lady's diagnosis and she was deemed clinically depressed by her GP and was taking anti-depressant medication.

Cognitive domain: conceptual and theoretical reflectivity: quantitative approach

Self-evaluation and self-reflection are important concepts in the learning process (Howatson-Jones 2010). The process of self-assessment through analytical and critical self-examination of the affective (emotions) and cognitive (intellectual) domains of the mind can lead an individual to become an autonomous, independent and responsible learner (Howatson-Jones 2010). In a similar vein, critical examination of one's own work and the work of others is an important process in learning the full professional standards of analytical doctoral work (Philips and Pugh 2000).

Whilst I was performing the pilot study, I had regular clinical meetings with cardiac patients and the multi-disciplinary health care team in the hospital and community settings. I regularly attended the exercise rehabilitation sessions and follow-up clinics. I had several conversations and interviews with staff and patients and read the patients' medical notes on a regular basis whilst recruiting the patient population. These activities and encounters in practice began to shape my thinking and focus more so towards what patients and staff wanted to say about how they perceived and defined QOL. I began to think of the variety of ways and the different definitions and meanings that people held about QOL. I began to perceive that the definition of QOL belonged to and was owned by the individual based on their unique life experiences, culture and background. This helped to change my emphasis and focus more towards studying the qualitative aspects of QOL, as opposed to a quantitative study. My change of focus towards mostly a qualitative study on the impact of the CRP on the older person's QOL was also related to the study of the cardiac literature review. This review subscribed to the lack of consensus of definition of QOL in older cardiac patients, particularly from an eclectic stance of both patients and cardiac health professionals. My change of focus also related to the inherent conceptual and methodological tensions in QOL measuring tools declared in some of the above arguments in the literature. Some of these included a lack of a consensus definition of QOL, and lack of sensitivity, validity and reliability in some of the QOL tools used in measuring QOL in cardiac patients (Taylor et al. 1998; Smith et al. 2000; Rapley 2003).

These issues put forward a strong case for review and clarification of the research questions and to tackle the concept of QOL as a central and core issue from predominantly an in-depth qualitative perspective (80%) with a small quantitative component (20%). I should declare that

this is a reverse situation to what I chose at the outset of this study, which was mainly due to the pilot study. This small quantitative component of the mixed methods study was important to retain, as one of the domains of QOL is the state of physical health or ill-health which can influence all the other domains (Bowling 2001). This quantitative component involved the measurement of physiological variables at patient entry to the programme (pre-test) and after patient exit from the programme (post-test). The other domains of QOL included psychological and social phenomena and the non-medical aspects of QOL e.g. quality of living conditions in the neighbourhood, family relations, spirituality/religion and retirement and leisure activities (Bowling 2001; Garratt et al. 2002; Ahmed and Khalek 2010).

In summary, reflections on the pilot study provoked me to change the focus of the study from a mainly quantitative to a mainly qualitative approach to understand the depth of patients' subjective experiences of CHD and how this scenario impacted on their QOL on CRPs.

Pilot test – cardiac health care professionals qualitative approach: conceptual and theoretical reflectivity

It is important to fully appreciate the contextual aspects of the study, particularly the research site and the characteristics of the participants that can be overridden by quantitative methods. Quinn-Patton (2002) suggests that the qualitative approach must be appreciated for its depth of insight and its contextual richness. Thus, I wanted to study what might be regarded as the 'qualitative concept of QOL' by means of a mainly in-depth rich qualitative mixed methods study with a smaller quantitative component devoted to the physical aspects of QOL. In view of my decision to legitimately pursue and study QOL from mainly a qualitative perspective, I proceeded to pilot the qualitative aspects of the study.

The latter consisted of a 20-item pre-constructed semi-structured interview questionnaire developed from a review of the literature, the generation of the research questions on QOL and the impact of various aspects of the CRP on their QOL. I piloted the questionnaire schedule on four health care professionals. They included one hospital-based doctor, one physiotherapist, and two senior nurses (one hospital and one community-based). I interviewed them individually for thirty minutes and kept field notes of the interview schedules. Later on in the research process, all these health professionals were excluded from the main study.

The cardiac staff suggested that some of the question items posed were '*repetitive*', '*didn't fall into a logical sequence*' or '*were somewhat ambiguous*'. They also suggested that it was worthwhile if the interview questionnaire was given to them about one week prior to the interview so that they

could make notes and reflect on the answers, especially on the abstract nature of the QOL questions. I took notice of their feedback and readjusted and clarified the interview questions and gave them the interview questionnaire one week prior to the interview. This latter action was very beneficial, as both the participant interviewee and I found it easier to engage with the relevant content of the interview as some of the abstract concepts had been reflected upon and thought through carefully in advance.

Another important suggestion by the cardiac staff was to include an important question relevant to older cardiac patients in particular '*about the use of patient choice and autonomy as an important component of their QOL on the CRP*'. The four cardiac health professionals felt that '*society generally had the propensity to underestimate the voice and choice*' of older people, as opposed to other populations (e.g. younger patients), and they wished to know whether this stereotype was reflected with the older cardiac patients in the local CRP. Bearing this in mind, they kindly advised me to use this question as part of the main patient interview schedule – I perceived this as good advice which I eagerly took on board.

Pilot test – cardiac patients – qualitative approach: conceptual and theoretical reflectivity

Four older cardiac patients (age range 63 – 76 years old), consisting of two male and two female patients, were chosen for pilot testing of the semi-structured questionnaires for semi-structured interview use. The two male patients each had a diagnosis of a coronary artery bypass graft (CABG – cardiac surgery) and a STEMI (ST wave Elevation Myocardial Infarction) with PCI (Percutaneous Coronary Intervention) and stent. The latter is an inert metal device to maintain patency of the relevant atherosclerotic coronary artery. The two female patients respectively had a diagnosis of PCI with a stent and an NSTEMI (Non ST wave Elevation Myocardial Infarction).

The four patients were interviewed individually for forty-five minutes using the semi-structured questionnaire schedule. The interviews were not audio-taped due to time constraints but I kept detailed field notes instead. Some of the questions (six in total) lacked clarity, sequence and suffered from repetition. Three of the patients involved were unable to understand two of the questions. I resolved these problems in terms of alteration, clarification, re-writing and sequencing of the relevant questions. I sought confirmation from the four respective patients by sending a second and final draft of the questionnaire to them by 'ordinary' post. They were satisfied and content with the outcome but requested that I included one final further question: '*have I missed any question that does not include a part of quality of life that's important to you?*' I adhered to their advice and retained this question in case I would miss some important aspect of QOL

important to that unique individual when I interviewed all the seven patients in the main component of the study.

Reflexivity, self-learning, and conclusions

I have learned much from this reflective account at an important junction in the course of my research studies. More importantly, I have learnt to 'think about thinking', to attempt to reach some form of conceptual clarity as it applied to research activity. I am also aware that this striving for conceptual clarity within the research process will continue. In philosophical terms, this quest for clarity is a continuous journey in academic and research work, it is not a destination.

In the final analysis, one specific academic author requests us, as human beings, *'to think about our moments of thoughtlessness and at the same time seems to ask us implicitly to use more reflective thinking in our work'*, or as Patton (1987: p.33) puts it:

*"Though man (and woman) - thinking beings who are defined,
Few use the grand prerogative of mind.
How few think justly of the thinking few!
How many never think who think they do."*

In summary, critical realism remains the over-arching conceptual or theoretical framework governing this research study, permeating all aspects of the research process. Crotty (1998) suggests that the purpose of a theoretical framework is to provide a cohesive thread weaved between the constructs of ontology, epistemology, methodology and the methods used in research work. Mixed methods study methodology, including qualitative and quantitative methods and the triangulation process, have been addressed as useful 'frameworks' to answer the guiding research questions posed at the outset of the study. Ethical issues and sampling techniques related to the study have received attention. Lastly, the chapter concluded with a focused reflective account on the preliminary pilot study. This has been significant to the researcher in shaping the direction of the study mostly towards an in-depth qualitative perspective triangulated with a smaller quantitative approach on the impact of a CRP on the QOL of older cardiac patients. As the quantitative approach on the patient's physical QOL was one of the first methodological areas to be addressed in this course of this study, it is worth analysing it in more depth in the next chapter.

CHAPTER 5: DATA ANALYSIS: QUANTITATIVE APPROACH

The main purpose of this chapter is to address and answer the first research question (RQ 1) of the study from a quantitative critical realist perspective which addresses causal processes in relation to actions, mechanisms, contexts and outcomes:

(RQ 1): What is the physical impact of a cardiac rehabilitation programme (CRP) on older patient's quality of life (QOL) who suffers from a cardiac event (MI/CABG/PCI)?

In order to achieve this purpose, the researcher will utilize a Statistical Package for Social Scientists (SPSS 15), mainly using descriptive statistics designed to organize and describe the characteristics of the physiological data on a range of physiological measures. Organization of statistical data will be presented in the appendices of the study i.e. relevant statistical graphs and tables associated with the physiological variables number one to eight (see below). Statistics are defined as a set of mathematical tools and techniques used for '*describing, organising, summarising, evaluating, interpreting and communicating numeric data*' (Polit and Beck 2004, p.452).

If statistical significant characteristics exist in the data between pre- and post-testing, ($p < 0.05$ i.e. probability value was less than 5% – results not due to random chance), inferential statistics, using related two-tailed t-tests (paired two sample for means), will be used to make inferences about the data in order to extrapolate from the sample to the wider cardiac population (Salkind 2004). With the use of inferential statistics, it is conventional to use a two-tailed t-test (two tails on the distribution curve) instead of a one-tailed t-test (one tail on the distribution curve) when testing the research hypothesis. The former reflects a non-directional hypothesis which posits a statistical difference in no particular direction (e.g. Group 1 and Group 2 will *differ* on a memory test – i.e. score higher or lower). The one-tailed t-test depicts a directional hypothesis which posits a *difference in a particular direction* (e.g. Group 1 will score higher than Group 2 in the same memory test) (Salkind 2004).

The relevant physiological measures concerned with this cardiac study included pre- and post-test measurements performed on the following eight variables at the beginning (entry) and again six weeks after (exit) the patients had completed the CRP:

1. A. Systolic blood pressure (SBP) – {pre-exercise pre-programme (entry – resting SBP) *versus* pre-exercise post-programme (exit)}. The same situation applies to other parameters below.

- B. Diastolic blood pressure (DBP) – {pre-exercise pre-programme (entry) *versus* pre-exercise post-programme (exit)}.
- C. Heart rate (HR) – {pre-exercise pre-programme (entry) *versus* pre-exercise post-programme (exit)}.
- D. Level of aerobic exercise (introduction to level five adapted from the BACR/BHF guidelines (2006). The intensity of the aerobic exercise for each individual patient was assessed by the Borg scale (see appendix I) – a valid and reliable tool which assesses the rate of perceived exertion (RPE) (Noble and Robertson 1996).
- E. Body Mass Index (BMI) – {defined as Kilograms (Kgs) divided by height in metres (M) squared} and documented by either patient self-report, medical notes or researcher measurement – measured pre-programme (entry) *versus* post-programme i.e. (exit).
- F. Hospital Anxiety and Depression Scale (HADS scale) – measured at entry and exit from the programme (Anxiety component).
- G. HADS – measured at entry and exit from the programme (Depression component).
- H. Self-reported tobacco/cigarette smoking quantity per day were assessed at entry to and exit from the CRP. Smoking is a major independent risk factor for coronary heart disease (CHD) (Colledge et al. 2010). It should be noted that only five patients smoked out of a total number of thirty-five.

In the following section, each of the physiological variables mentioned above and the following relevant constructed hypotheses will be systematically and individually addressed using statistical data analysis (SPSS 15), commencing with systolic blood pressure (SBP).

1(A): SYSTOLIC BLOOD PRESSURE (SBP) BY GENDER

Discussion: overarching critical realist framework: statistical significant physiological variables.

The sample consisted of thirty-five participants made up of twenty-six males and nine females. Gender, in this context, referred to the statistical processing of the male and female groups

separately. One extra female from an ethnic minority group was recruited to the sample towards the end of the study (n = 36). This situation was due to the difficulties that the researcher experienced in recruiting patients from this patient population. Therefore, it was too late to include her in the above statistical analysis.

The bar chart shows a decline in both male and female mean systolic blood pressure (SBP) between pre- and post-tests (see appendix XII). The descriptive statistics demonstrate that the mean SBP for the sample was 152.8 mmHg on entry to the programme (i.e. pre-exercise pre-programme (PEPP)). The level of measurement regarding SBP was defined on a ratio scale which has a true zero value and represents a 'real figure' that can be counted (GCSE Statistics 2004). This pre-test figure compared to 144 mmHg (mean score) on exit from the programme prior to exercise (i.e. pre-exercise post-programme (PreEPoP)), which demonstrated a difference of 8.8 mmHg in the mean SBP (see appendix XII).

One of the potential physiological effects of the aerobic exercise component of the programme is to reduce SBP where possible, though this does not always occur in all individuals, even with endurance exercise, due to a combination of individual genetic, environmental or lifestyle factors (Basse 2002). Raised SBP or systolic hypertension is defined as value of 140mmHg or over. If both SBP and diastolic blood pressure (DBP > 90 mmHg or over) are raised, the outcome is a condition called hypertension, which is a well-known risk factor for coronary heart disease (CHD).

Commencing around the middle-age years (mid-fifties and beyond), SBP shows a slight increase due to age-related physiological changes in terms of loss of arterial elasticity and thickening of the arterial walls (Walsh and Crumie 2007). Thus, it is prudent to maintain the patient's ideal normal SBP below 130mmHg and diastolic blood pressure (DBP below 90mmHg) where possible. Generally, in health, regular aerobic exercise performed four times per week for one hour per day is sufficient to raise the resting heart rate and within the patient's rate of perceived exertion (RPE) by use of the Borg scale, helps to maintain a normal blood pressure (both SBP and DBP) (Tipton et al. 2006). The physiological mechanism underpinning the reduction in blood pressure (BP) with regular exercise is that the left ventricular myocardium of the heart, in particular, becomes a conditioned efficient muscle pump in reducing cardiac output which, in turn, reduces blood pressure (BP) (Tipton et al. 2006).

In statistical terms, it is customary to state the null hypothesis (H₀) firstly, then followed by the alternative hypothesis (H₁) in relation to Systolic Blood Pressure (SBP) (see 1A above – p.101). This same process applies to all the other physiological variables that follow on from above.

- H0 – *The patient with a cardiac event (MI/CABG/PCI) is expected to show no difference in SBP as a result of the cardiac rehabilitation exercise programme.*
- H1 – *The patient with a cardiac event (MI/CABG/PCI) is expected to show a difference in SBP as a result of the cardiac rehabilitation exercise programme.*

The alternative hypothesis (H1) is supported if there is a significant (real) difference between pre- and post-testing on each of the variables as a result of the CRP. If, on the other hand, there is no evidence for a statistical significant difference between pre- and post-testing on each of the variables, this would support the null hypothesis (H0). It is worth pointing out that the null hypothesis is supported if the traditional probability (p) value exceeds the 5% statistical significance level which basically means that the results are due to random chance or, if the p value is less than alpha, defined as the cut-off point for biological purposes at 0.05 (5%) value, H0 can be rejected and H1 accepted. Acceptance of (H1) means that it is certain that the results are not due to random chance and that the results are due to significant differences in scores between the variables. However, If the p value is greater than alpha, we fail to reject H0, thus supporting the null hypothesis (Hazard-Munro 2005).

In relation to this statistic on SBP by gender, the p. value = .007 (0.7%) was less than alpha ($p < 0.05$) or (5%), which suggested that a statistical significant difference existed between pre- and post-testing which supported the alternative hypothesis (H1). This result suggested that the independent variable (IV), defined here as the aerobic exercise component of the CRP, had an effect or produced a positive outcome on the dependent variable (DV), defined, in this case, as the SBP.

1(B) DIASTOLIC BLOOD PRESSURE (DBP) BY GENDER

Discussion: overarching critical realist framework: statistical significant physiological variables.

Descriptive statistics in relation to the bar chart demonstrate a reduction in diastolic blood pressure (DBP) in both males and females between pre- and post-testing. The mean DBP was 82.4mmHg on pre-exercise pre-programme (entry) (PEPP), in comparison to a value of 77.65 mmHg pre-exercise post-programme (exit) (PreEPoP), which indicates a 4.75 mmHg reduction. The level of measurement in relation to DBP was the ratio scale (see appendix XIII).

In a very similar way to systolic blood pressure (SBP), a potential physiological effect of the CRP is to reduce DBP but, again, may not occur in some individuals, despite endurance aerobic

exercise training which is related to individual nature and nurture mechanisms and contexts (Basse 2002). DBP is the pressure or the force of blood on the elastic aorta when the heart is in diastole or in the relaxation phase of the cardiac cycle, which occurs after ventricular systole or contraction (Walsh and Crumie 2007). DBP is an important determinant in the diagnosis of diastolic hypertension (defined as a DPB > 90mmHg). It is well-recognized that hypertension, defined as SBP >140 mmHg and DBP > 90mmHg, is a major independent risk factor for coronary heart disease (CHD) (College et al. 2010).

The relevant hypothesis in relation to DBP by gender was:

- H0 – *The patient with a cardiac event (MI/CABG/PCI) is expected to show no difference in DBP as a result of the cardiac rehabilitation exercise programme.*
- H1 – *The patient with a cardiac event (MI/CABG/PCI) is expected to show a difference in DBP as a result of the cardiac rehabilitation exercise programme.*

The p. value = .010 or (1%) for the DBP by gender statistic was less than alpha ($p > 0.05$ or 5%), which indicated that a statistical significant difference existed in the variables between pre- and post-testing, which supported the alternative hypothesis (H1). This result suggested that the independent variable (IV) (defined here as the aerobic exercise component of the CRP) had an effect or produced a positive outcome on the dependent variable (DV), defined, in this case, as the DBP.

1(C) HEART RATE BY GENDER

Discussion: overarching critical realist framework: statistical significant physiological variables.

From a descriptive statistical perspective, the bar chart concerning heart rate (HR) indicated that there was a reduction in this variable between pre- and post-testing (see appendix XIV). This was also supported by evidence in the reduction of mean HR from 72.9 (73 whole figure) to 65.8 (66) beats per minute (bpm) – a difference of 7 bpm between testing (see appendix XIV). The level of measurement of HR was on the ratio scale.

One of the cardiovascular physiological effects of regular endurance aerobic exercise is a potential reduction in HR in beats per minute (bpm). In the absence of cardiac illness and cardiology drugs, this is referred to as a 'trained' bradycardia (Zipes 2005). The physiological mechanisms and actions underpinning bradycardia are complex and unclear due to a lack of

research data in humans (Tipton et al. 2006). However, it is postulated that the intrinsic sino-atrial node (SAN) or pacemaker, positioned at the backwall of the right atrium, which sets the heartbeat or rate, undergoes specific physiological changes that lowers HR (Tipton et al. 2006). These changes may be a reduction in the firing of action potentials or impulses in the SAN combined with training induced down-regulation (reduction in number) of the right atrial beta-adrenergic receptor system ('*Ra-bars*'). These latter mechanisms are evident in exercise-trained rat and porcine models which could plausibly apply to the human model; however, such extrapolations are not definitive due to the complex nature of human beings above animal models (Schaefer et al. 1992; Hammond et al. 1987). '*Ra-bars*' is related to the actions of the neuro-transmitters (adrenaline and noradrenaline) at sympathetic nerve endings and synapses adjacent to the SAN. Thus, a reduction in sympathetic receptors means that there are less in existence for sympathetic action (adrenaline naturally increases HR) which could explain the positive outcome of bradycardia (Zipes 2005).

The relevant hypothesis in relation to HR by gender was:

- H0 – *The patient with a cardiac event (MI/CABG/PCI) is expected to show no difference in HR as a result of the cardiac rehabilitation exercise programme.*
- H1 – *The patient with a cardiac event (MI/CABG/PCI) is expected to show a difference in HR as a result of the cardiac rehabilitation exercise programme.*

In terms of the parametric t-test, the p value = .001 (.1%) which was less than alpha ($p = 0.05$ (5%)); this indicated a statistical significant difference in the scores between pre- and post-testing which supported the alternative hypothesis (H1). This result suggested that the independent variable (IV), defined here as the aerobic exercise component of the CRP, had an effect or produced a positive outcome on the dependent variable (DV), defined in this case as the HR in beats per minute (bpm).

1(D) AEROBIC EXERCISE BY GENDER

Discussion: overarching critical realist framework: statistical significant physiological variables.

Descriptive statistics measures in terms of 'mean' increased from 60.5 (60 whole figure) to 62.9 (63) between pre- and post-testing. The minimum-maximum values (pre- versus post-testing) for males increased from 60 to 66. In a similar way, the minimum-maximum values (pre- versus post-testing) for females increased from 60 to 65. Visually, the bar chart supported these increased

values (see appendix XV). This meant that some participating patients, both males and females, in the group commenced at the introductory level of aerobic exercise in cardiac rehabilitation. The introductory level (= 60) was defined as mild exercise and reached their maximum levels (level = 65 and level = 66), which was defined as strenuous exercise post-programme. This was a graduated aerobic circuit training exercise programme. On average (mean), all patients increased their level of physical activity from the introductory level to level 3 defined as moderate exercise.

It is recognized that patients on CRPs increase their levels of cardio-respiratory fitness within hospital and community environments (Bassey 2002). They are actively encouraged by health professionals to maintain these exercise schedules either in phase IV of the CRP referred to as 'Patient Activity Leisure Schedule' (PALS) based at the gymnasium/fitness centre and/or to continue these schedules at home. The benefits of exercise for the older are well-documented, evident from epidemiological, longitudinal and meta-analytic studies (Bassey 2002). This ranges from enhanced cardio-respiratory fitness; improved lipid profiles; improved physical capabilities in terms of a reduction of loss of muscle mass and declining neurological functioning; enhanced quality of life and well-being; beneficial effects in lifting low mood or mild depression; and delayed progression of some of the diseases associated with old age, such as coronary heart disease (CHD), stroke, diabetes, obesity and osteoporosis (Arent et al. 2000).

The relevant hypothesis in relation to aerobic exercise by gender was:

- H0 – *The patient with a cardiac event (MI/CABG/PCI) is expected to show no difference in aerobic exercise capacity as a result of the cardiac rehabilitation exercise programme.*
- H1 – *The patient with a cardiac event (MI/CABG/PCI) is expected to show a difference in aerobic exercise capacity as a result of the cardiac rehabilitation exercise programme.*

The p value = .000 (00.0%) which is less than alpha ($p < 0.05$) or 5% which suggested that a statistical significance difference existed between pre- and post-testing. This value supported the alternative hypothesis (H1) as regards that the independent variable (IV) of aerobic exercise produced a positive causal outcome (effect) on the dependent variable (DV) on the level of aerobic exercise by gender (increased) as a result of the CRP.

1(E) BODY MASS INDEX (BMI) BY GENDER

Discussion: overarching critical realist framework: statistical non-significant physiological variable.

The mean score on the ratio scale in Body Mass Index (BMI = Kilograms divided by height in metres squared) between pre- and post-testing on the CRP suggested an overall very slight increase in BMI from 26.6 to 26.8; that is a difference of only 0.2 kg/m². This is reflected in the male and female samples which indicated an insignificant but very slight increase in BMI in the male sample post-programme versus pre- programme. This contrasts to an insignificant, very slight decrease in BMI in the female sample post-programme versus pre-programme (see appendix XVI). Overall, an observation suggested that the mean BMI at the above values suggested that this sample was slightly overweight, defined as a BMI ranging from 25 to 29.9 (n = 18.5 - 24.9 kg/m²) (BACR 2000).

The relevant hypothesis in relation to Body Mass Index (BMI) by gender was:

- H0 – *The patient with a cardiac event (MI/CABG/PCI) is expected to show no difference in BMI as a result of the cardiac rehabilitation exercise programme.*
- H1 – *The patient with a cardiac event (MI/CABG/PCI) is expected to show a difference in BMI as a result of the cardiac rehabilitation exercise programme.*

The p value for this variable was = .441 (44.1%), which suggested that there was no statistical difference between pre- and post-testing in BMI whilst patients were participating in the CRP. Because this value is greater than alpha ($p < 0.05$ (5%)), it supported the null hypothesis (H0) in terms that the programme had no effect on the BMI variable (see appendix XVI).

It is important to control body weight in the interest of relative health. Being overweight, a common contemporary phenomenon, is not only a well-recognized independent risk factor for CHD, but is also implicated in a host of other diseases and disorders, including hypertension, raised blood cholesterol, diabetes mellitus and impaired glucose tolerance (BHF statistics 2006). Weight management is a contentious subject, as the evidence is unclear and ambiguous as to whether obesity should be managed on advice on diet combined with physical activity or versus diet alone or physical activity alone (Mulvihill and Quigley 2003). The British Heart Foundation (BHF) (2004) point out that it is difficult to lose much weight by physical activity alone, as adipose tissue contains 7000kcal/kg. Therefore, it is advocated that if obesity is to be managed effectively, it should be tackled comprehensively by provision of advice on diet, physical activity and a

behavioural modification programme tailored to meet the individual's needs. Specialist advice by a dietician may also be necessary, especially in patients with severe obesity (40kg/m²) (Mulvihill and Quigley 2003). The local CRP may not have been long enough in duration to produce a reduction in BMI as the most favourable conditions for such include low-intensity, long-duration aerobic exercise and aerobic exercise combined with high repetition resistance training (Mulvihill and Quigley 2003). In addition, the CRP did not contain any notable degree of this latter form of exercise.

1F and 1G: HOSPITAL ANXIETY AND DEPRESSION VARIABLES BY GENDER

Discussion: overarching critical realist framework: statistical non-significant physiological variables.

Psychological morbidity, particularly the spectrum of anxiety and depression disorders, are common phenomena in middle-aged and older patients with coronary heart disease (Milani et al. 1998; Davies et al. 2004). Some clinical manifestations exhibited by patients suffering from this spectrum of disorders (ranging from social and generalized anxiety disorder, panic disorders, to mild and clinical depression) include excess worry and tension, panic attacks closely associated with agoraphobia, autonomic arousal, tremors, low self-esteem, low mood, poor concentration, lack of energy and either an increase or loss of weight (Milani et al. 1998; Davies et al. 2004). Any of these symptoms alone, or in combinations thereof, is recognized to have a negative impact on the cardiac patient's physical and psycho-social abilities to consistently adhere to cardiac rehabilitation regimes, health promotion advice, concordance with prescribed medication and lifestyle behavioral changes (Davies et al. 2004).

The prevalence of anxiety and depression, for example, in one specific study using the HADS scale as a diagnostic tool in an epidemiological survey performed in 2000 in the UK, was 15% of patients in a cardiac sample of 347 with an MI. The sample constituted 254 males and 93 females with an MI with a mean age of 63 years (Mayou et al. 2000).

For up to one year post-MI, anxiety and depression adversely affected patients' quality of life (QOL) assessed by the QOL tool – SF 36 in terms of their functional status (de-motivation regarding performing activities of living), more psychosocial complications, more frequent reports of chest pain and dyspnoea, more use of primary care resources (e.g. GP visits) and secondary prevention lifestyle changes (e.g. lack of motivation to take exercise and adherence to a healthy diet). Limitations of the study include a gender-bias towards the number of males versus females and its specific focus on patients with an MI to the exclusion of other cardiac populations (e.g.

patients with Angina, PCI, CABG), which may make the results difficult to generalize more widely (Gerrish and Lacey 2006). In conclusion, these authors emphasize the importance for health professionals to perform early psychological assessment of cardiac patients with an appropriate valid scale (e.g. HADS scale). This should be done so that appropriate patients can receive an individualized care plan, individualized counselling and treatment (as a cardiac in-patient or out-patient) to positively influence their psychological well-being and overall quality of life (NSF for CHD 2000; Mayou et al. 2000).

In the context of this study, anxiety and depression scores have been discussed together in statistical terms as both were two parts of the same scale – the Hospital Anxiety and Depression Scale (HADS). This valid, reliable, easy-to-use and brief scale is widely utilised to measure, on an ordinal/rank scale, patient anxiety and depression levels in medical and cardiac populations (Zigmond and Snaith 1983). In terms of HADS scoring, both anxiety and depression columns on the same scale are added up separately. Thus, an anxiety and depression score of:

- 0 – 7 = Normal Mood;
- 8 -10 = Mild Anxiety/Depression);
- 11 – 14 = Moderate Anxiety/Depression); and, finally,
- 15 – 21 = Severe Anxiety/Depression)

Evidence from the above statistical tables in relation to this study demonstrated that both anxiety and depression (mean scores and bar charts) were less than 7 on the HADS scale (see appendix XVII). These scores were defined as that of 'Normal Mood' on the HADS scale.

The relevant hypotheses in relation to the anxiety and depression variables were:

- H0 – *The patient with a cardiac event (MI/CABG/PCI) is expected to show no difference in anxiety/depression levels as a result of the cardiac rehabilitation exercise programme.*
- H1 – *The patient with a cardiac event (MI/CABG/PCI) is expected to show a difference in anxiety/depression levels as a result of the cardiac rehabilitation exercise programme.*

The inferential statistical value (t-test) on the anxiety score { $p = .001$ (.1 % - less than alpha ($p = .05$))} appeared to support the alternative hypothesis (H1) which stipulated that a statistical significant difference existed between pre and post testing, whereas the depression score was $p = .189$ which is greater than alpha ($p = .05$), thus, the score supported the null hypotheses (Ho) in terms of no difference between pre and post testing (see appendix XVIII). However, this is not the

case nor does it apply in this instance as normal mood is defined as a score between 0 – 7, whereas mild anxiety is defined as a score from 8 – 10 on the HADS scale. Overall, this meant that this cardiac patient sample did not experience undue anxiety and depression as defined by the HADS scale.

However, it should be remembered that whilst the strengths of the scale are brevity, user friendliness, simplicity and robustness, it is a subjective self-rated questionnaire where its limitation rests on the potential for the patient to report 'untruthfulness' advertently or inadvertently (Snaith 2003). In the former, he/she may deliberately under-report symptoms for fear of psychiatric diagnosis and consequent stigmatization as regards his/her high anxiety and depression scores (Snaith 2003). Of course, the converse is also true. The patient may 'tell the truth to disclose their real innermost worries and woes' in order to obtain appropriate treatment and relief from their emotional disorder, which positively helps the patient's well-being whilst, simultaneously, the tool's strength is its ability to sensitively detect and discriminate between anxiety and depressive disorders in those that are afflicted (Snaith 2003).

1 (H) SELF-REPORTED TOBACCO/CIGARETTE SMOKING (QUANTITY PER DAY)

Discussion: overarching critical realist framework: statistical non - significant physiological variable.

Cigarette or tobacco smoking is a well recognized major independent risk factor for CHD which is largely preventable (NSF for CHD 2000). Smoking remains a global problem. Pandemically, it is estimated that smoking is responsible for the deaths of nearly five million people each year. Approximately 325 million people worldwide will suffer premature mortality as a result of smoking unless smoking habits change dramatically (WHO 2010).

Nationally in England, it is estimated that 28% of men and 24% of women smoke cigarettes. In young women, smoking is rising at a faster rate than young men, perhaps due to a fashionable reason for 'staying thin and looking cool' (Colledge et al. 2010). The highest incidence of smoking occurs in the younger age groups (16 to 24 years) within the less well educated poorer working classes compared to the same age groups from the better educated middle and professional classes. The incidence of smoking declines with increasing age (NHS Information Centre 2010)). From an ethnic minority view, the highest incidence of smoking occurs in males from the Bangladeshi (40%) communities (BHF 2008).

From a patho-physiological perspective, smoking hastens the atherogenic process by a complex interplay of factors occurring in the walls of the coronary arteries. Smoking stimulates thrombotic formation, increases platelet aggregation, increases blood clotting factors such as fibrinogen, enhances blood viscosity and damages the delicate endothelial lining cells of the coronary arterial tree, revealing sub-endothelial collagen which, in turn, on exposure to blood flow, stimulates further thrombosis, setting off another pathological cycle of events (Zipes et al. 2005).

Generally, people who smoke need help to stop the habit. This begins at the individual level where people can gain insight and understanding to enable them to make an informed choice about the dangers of smoking and its associations with various diseases, especially CHD and lung cancer (NSF for CHD 2000). This can be performed through health promotion advice and education offered by a variety of health professionals to people who smoke and their immediate families in hospitals, out-patient departments and the wider community (Kucia and Quinn 2010). Smoking cessation clinics based in pharmacies, healthy living centres, GP practices and leisure centres, combined with behavioural modification regimes, are known to be helpful to people who wish to quit smoking. Pharmacological interventions with the use of Nicotine Replacement Therapy (NRP) or the newer non-nicotine replacement therapies (e.g. bupropion) are also useful adjuncts to parallel individual behavioural strategies (Kucia and Quinn 2010).

In relation to this study, the above descriptive statistical data on smoking reveals very little information except to disclose that the great majority of the sample (34 from 35 patients) did not smoke (see appendix XIX). In the past, most of the patients in the sample (bar seven who never smoked at all) had smoked at some point in their lives but had quit for a considerable amount of time ranging from over 10 to 40 years in duration. However, one individual male patient, aged 68 years with a diagnosis of Non-ST wave Elevation Myocardial Infarction (NSTEMI) with angioplasty, smoked piped tobacco – a quantity of 25 grammes per week (25g/week). He had suffered from his 'heart attack' six weeks prior to joining the CRP. When he joined the programme, he had already reduced his tobacco intake by half from 50g to 25g/week. From his own account, this reduction was chiefly related to the:

“Shock I got from me heart attack and all the things I went through with treatment and the angioplasty I got at X and Y hospitals, I decided to cut down pipe smoking for the sake of me healthI intend to give it up altogether but I will do gradually meself bit by bit.”

He pointed out the very useful health promotion advice and education he had received from both doctors and nurses whilst at the Coronary Care Unit (CCU) at hospital X and whilst receiving his angioplasty treatment at hospital Y. He had support from his wife and family and he had knowledge of the local smoking cessation clinic at the GP's surgery, although he was reluctant to

attend. He declined nicotine replacement therapy as he said '*he would manage to quit the habit without it*'. All in all, he seemed to have the right attitude, motivation, insight, and support to quit pipe smoking permanently.

Impact of the CRP on physiological variables: six patients selected for interview

The following brief discussion refers specifically to physiological measurements (same variables and design as the above section) performed on six patients selected for qualitative interviews as regards the physical and psycho-social impact of the CRP on their quality of life. The sample here does not include the Asian lady with an MI with a PCI and stent recruited to the study later on. The discussion here will concentrate only on the *physical* impacts of the programme on the patient's QOL. The psycho-social impacts of the programme will be addressed later on in the relevant qualitative sections of the study.

The non-random purposive sample of six patients consisted of:

- Two females diagnosed with a ST wave Elevation MI (STEMI)
- One female diagnosed with Coronary Artery Bypass Graft (CABG)
- Three males: one male diagnosed with a CABG; one male diagnosed with a Non-ST wave Elevation MI (NSTEMI); and one male diagnosed with Percutaneous Coronary Intervention (PCI) and STEMI

The physiological variables of heart rate (HR) ($p = .037$) and diastolic blood pressure (DBP) ($p = .004$) demonstrated statistical significant differences between pre and post testing which supported (H1) the alternative hypothesis. Similar to some of the statistical significant results in the main sample ($n = 35$), a cautionary tale needs to be mentioned in terms of interpretation of this data. These patients, similar to the main sample of thirty- six, were receiving anti-hypertensive and beta-blocker therapy, which may have influenced reductions in both HR and DBP. Exercise levels were also statistically significant ($p = .005$), which demonstrated that all six patients improved their exercise capacity from an introductory level to level four, which is regarded as strenuous exercise.

All other variables (BMI - $p = .191$): HADS anxiety ($p = .076$) and depression, SBP ($p = .333$) and tobacco smoking (quantity) (none of the six patients smoked) were 'not significant' in statistical

terms, which supported the null hypothesis (Ho) i.e. there were no differences between pre and post testing with no causal links evident between the IV and the DV.

In summary, the statistical evidence from an objective perspective demonstrated a positive impact on the patient's physical QOL on a CRP as measured by specific (not all) physiological variables on the larger sample of thirty-six patients and the smaller sample of six patients. The latter smaller sample was selected for qualitative interviews later on in the study. This sample increased to seven patients for interview with the recruitment of an Asian lady to the sample with a diagnosis of a PCI with a stent and a NSTEMI.

A cautionary tale: status of the quantitative physiological data (contextual): potential contaminating variables – drug therapy/medication.

It is important to note that the researcher's intention in this study was *not* to attempt to establish cause and effect relationships or to determine causality between physiological variables which heavily reflects the experimental method within the positivistic paradigm. Within the latter paradigm, the existence of a 'single layer' of reality or 'linear-like' cause and effect relationships ('*constant conjunctions*'), manipulation/control of variables, probability (random) sampling techniques in closed systems (e.g. positivism) are rejected by the critical realist framework (Sayer 2000). Realists view the world as complex and multi-dimensional, consisting of multiple layers of reality where natural and social phenomena are subject to changing contexts, producing different outcomes in different circumstances (Sayer 2000; Robson 2002). The task for realists is to study the complex nature of natural and social reality in terms of the rigorous analysis of the causal mechanisms, structures, contexts and outcomes of both natural and social phenomena (Pawson and Tilley 2003).

Realists are interested in objective measurements, methodological rigour and in studying phenomena that exist in the natural and social sciences but not from a positivistic perspective (Robson 2002). In the context of this cardiac study, the researcher was interested in some form of objective measurement of physical indices to study the physical aspects of exercise-based cardiac rehabilitation and their impact on the QOL of older cardiac patients from a critical realist perspective. From the physical perspective, studying the cardiac rehabilitation mechanisms, structures, and outcomes in the context of a local geographical area in Yorkshire was considered important by the researcher. In addition, the discussion below may assist the contextualisation of quantitative data, as some of the statistical significant data generated in this part of the study's findings had potential confounding variables related to patients' drug regimes (see appendix V – *patient demographic data/medication regimes*).

Cholesterol

Yusuf (2004) suggests that raised serum cholesterol is recognized as a major independent risk factor for CHD as it is closely linked with the thrombo-atherogenic process in the coronary arteries. However, it was not measured in this study for the following reasons. For all cardiac patients, total serum cholesterol levels were measured as a routine profile by the hospital physician immediately post-cardiac event (or at five weeks prior to programme entry) and measured again at five weeks by the GP in the community once the programme was completed (lasted six weeks in length). In essence, pre- and post-test cholesterol measurement for patient participants was available every sixteen weeks. According to NICE guidelines (2007), it should be noted that all the cardiac sample were on a regime of cardiac medication, including 'Statins', which are a group of cholesterol-lowering drugs recognized to be very effective at reducing cholesterol levels. Like all drugs, they possess a number of potential adverse effects, for instance, nausea, vomiting, skin allergy, myalgia, muscle weakness and, rarely, rhabdomyolysis (muscle damage) (Ramrakha and Hill 2006). Because of the potential dangers of high serum cholesterol, most physicians prefer to have cardiac patients total cholesterol levels below 4mmol/l) (Johnson and Rawlings-Anderson 2007).

Fourteen of the samples' (total sample number (n) = 35) 'Statin' medication was modified by the cardiac physician during the programme; some reasons were due to minor side effects, whilst others had their dosages either increased or decreased titrated to cholesterol levels. In other words, the medication doses and/or the medication name did not remain constant. Therefore, it was considered not worthwhile performing statistical calculations on cholesterol, as medication name/dose change was perceived as a contaminating variable. Consequently, potential causal links between independent and dependent variables could not be reliably established.

Systolic Blood Pressure (SBP)

A word of caution should be exercised with the interpretation of this data, as an alternative plausible explanatory mechanism may have operated on the outcome of a decreased SBP (p. = .007 (0.7%) was less than alpha (p.< 0.05) or (5%)). All cardiac patients with a myocardial infarction (MI) are prescribed anti-hypertensive medication in terms of beta-blockade therapy, combined with angiotension-converting enzyme (ACE) inhibitor drugs to reduce cardiac workload consistent with the National Institute for Clinical Excellence guidelines (NICE 2007). It is possible that this medically prescribed medication had a beneficial reduction on SBP. However, the patient participants had been on such therapy for six weeks prior to commencing the programme where the dose concentration remained unaltered by the prescribing physician by way of either an

increase or decrease in milligrams (mgs) during the course of the programme (see appendix V – *patient demographic data/medication regimes*).

Diastolic Blood Pressure (DBP)

Identical to the SBP rationale discussed above, the reduction in DBP ($p = .010$ or (1%)) was less than alpha ($p > 0.05$ or 5%) once again needs caution when interpreting the results, as the participating patients in the sample were receiving prescribed anti-hypertensive therapy (beta-blockers and ACE inhibitors) in tune with NICE guidelines (2007). This may be regarded as a contaminating variable potentially responsible for the mean reduction or outcome seen in the patient's DBP (see appendix V – *patient demographic data/medication regimes*).

Heart Rate (HR)

It is advised to exercise a cautionary word when interpreting the positive outcome of reduced HR ($p = .001$ (.1%)) which was less than alpha ($p = 0.05$ (5%)). All patients with a myocardial infarction (MI) and some with hypertension (doctor preference) were prescribed beta-blockade therapy (NICE 2007). Subsequently, a causal chain of physiological actions occur in relation to a reduction in HR (beta-blockers block adrenaline action at sympathetic nerve endings at the sino-atrial node SAN), next, a reduction in cardiac output (CO) and, finally, a reduction in blood pressure (BP) (Tortora 2009). This type of drug therapy can be considered an extraneous variable that may be partially responsible for the patient's lowered heart rate. Despite this admission, all relevant patients with an MI were prescribed these drugs six weeks prior to commencing the programme, which remained unaltered in dose and unchanged in nature throughout the duration of the programme (see appendix V – *patient demographic data/medication regimes*).

In conclusion, it is believed that the first research question (RQ 1) of the research study has been satisfactorily addressed via statistical analysis using SPSS 15 statistical package. Now, it is time to approach the final three research questions that examine the impact of the programme on the patient's QOL from the important subjective qualitative perspective. Thus, the following chapter (six) will address the second research question (RQ 2) of the study from a qualitative perspective.

CHAPTER 6: QUALITATIVE DATA ANALYSIS

Introduction

This chapter, divided into four sections, namely, A, B, C, and D, will address the qualitative analysis of each of the qualitative research questions associated with this study (i.e. research questions (RQs two, three and four)). In addition, the researcher will discuss the rationale and justification process for the use of thematic analysis ('TA'), within relevant conceptual and practical frameworks, to analyse the qualitative data.

Concerning RQ 2, *What are Cardiac Health Care Professional's (CHCPs) perceptions of the impact of the CRP on the older patient's QOL who suffers from a cardiac event (MI/CABG/PCI)?*, a non-random purposive sample of ten CHCPs was chosen for semi-structured interviews in order to gain a comprehensive, multi-disciplinary and eclectic view of their perceptions of the impact of a CRP on the older cardiac patient's QOL. The semi-structured interviews (one hour in length, audio-taped) took place over a six-month period from April 2008 to September 2008. Approximately two interviews were negotiated by the researcher with the CHCPs and carried out on a monthly basis in a quiet location at the hospital. The researcher obtained access and informed consent (verbally and in written form) from the CHCP population. They were provided with clear and detailed verbal and written explanations of the purposes of the study and were assured of anonymity and confidentiality throughout the interview process and the entire length of the research study.

The sample comprised of three different health professional groups as follows:

- Three doctors: one General Practitioner (GP) and two senior hospital-based doctors.
- Two physiotherapists operating in hospital/community settings.
- Five nurses: four senior qualified nurses and one qualified junior nurse involved in cardiac rehabilitation practice in hospital and community settings.

Adaptations from Morse and Field's (2002) over-arching conceptual framework for the process of thematic analysis (TA) within Burnard's (1991) and Braun and Clarke's (2006) narrower practical guidelines for TA were utilised to organise, manage, interpret, summarise and to report on the data. These frameworks were applied to 'TA' as an analytical tool for the analysis of all the qualitative material in relation to RQs 2, 3 and 4 of this study, that is, concerning the ten

qualitative CHCPs interviews and the seven cardiac patient interviews. Firstly, the researcher has analysed the concept of TA, followed by Morse and Field's framework and, finally, the application of Burnard's (1991) and Braun and Clarke's (2006) narrower practical guidelines for TA.

Thematic analysis (TA): rationale and critical realism

TA is a widely used concept, tool, process, method or approach for analysing qualitative data. Despite the tool's relatively widespread use, particularly in qualitative research, it is often poorly delineated, acknowledged and defined (Braun and Clarke 2006). In the research literature, it appears to be treated as a '*Cinderella*' concept – often neglected, regularly ignored but often used by researchers in one disguise or another for qualitative data analysis.

According to Braun and Clarke (2006, p.77 – 79), '*thematic analysis is a method for identifying, analyzing and reporting patterns or themes with data*'. One of its benefits is that it provides researchers with an '*accessible and theoretically flexible approach to analyzing qualitative data*'. TA is designed to provide structure and order on a large amount of qualitative or narrative data so that it can be synthesized, interpreted and communicated in a logical manner to the research community (Polit and Beck 2008). A search for meanings in the narrative material takes place so as to identify important themes, categories, trends or patterns of concepts to 'make sense' of the data (Polit and Beck 2008). These authors suggest that the process of qualitative data analysis is difficult and complex, less formulaic and much less linear than the more structured mathematical underpinnings of quantitative data analysis, which is clearly evident in their following statement: "*qualitative data analysis is a labour-intensive activity that demands creativity, conceptual sensitivity and sheer hard work*" (Polit and Beck 2004, p.570).

TA is congruent with the philosophical use of critical realism as it extends to the qualitative component or '*arm*' of this research study (see p.104, left arm of flowchart). This position is based on the premise that the critical realist view of the world takes account of subjectivist perspectives of social reality. Procter suggests that the realist interpretivist stance, particularly Harre's work, acknowledges:

"The cognitive and subjectivist processes in defining reality and recognizes the complex relationships that exist between people and perceptions, culture and gender, attitudes and behaviours which are influenced by internal subjective beliefs and external structures related to the objectivist view."
(Procter 1998, p.78)

This argument is further reinforced by Braun and Clarke (2006), who point out that the theoretical position of TA needs to be made clear and transparent by researchers and that it is not left

'*unspoken about*' or left to the 'whims' of the imagination of the reader. Thematic analysis can be utilised as an analytical method to occupy the 'middle ground' of critical realism acting as a '*contextualist method*' that sits between the polemical philosophical positions of:

"Essentialism and constructionism which acknowledges the ways individuals make meaning of their experience, and, in turn, the ways the broader social context impinges on those meanings, while retaining focus on the material and other limits of reality. Therefore, thematic analysis can be a method that works both to reflect reality and to unpick or unravel the surface of 'reality'."
(Braun and Clarke 2006, p.81)

TA reflects the philosophical tenets of this study in maintaining coherence between its ontology, epistemology, methodology, methods and data analysis (Crotty 1998). The qualitative component of this study focused on meaning, depth, rich description and the '*realities*' of the complex social world of a CRP based in hospital and community settings (Quinn-Patton 2002). Thus, TA provides an analytical tool to study the perceptions and experiences of the CHCPs of the QOL of older cardiac patients on CRPs. Equally, in chapter seven that follows subsequently, this position also applies to the use of this analytical tool for the analysis of the patient's qualitative material in terms of their emergent experiences and perceptions of the impact of the programme on their QOL.

Other justification processes for the use of TA in this study include its role in building a 'conceptual bridge' between the language of qualitative and quantitative analysis (Boyatzis 1998). When this is effectively performed, it enhances the clarity of research results/findings and facilitates ease of communication and dissemination of these findings between researchers of both paradigms (Boyatzis 1998). Because of TA's flexibility and relative ease of application to the analysis of complex data within a critical realist framework, it is one of the mechanisms of choice for use in this study (Boyatzis 1998). Thus, TA will be used to explore and analyse complex and multi-disciplinary theoretical and practical phenomena that occurred within the dynamic cardiac health care environments of hospital and community settings (Proctor 1998). Thematic methods of interpretation provide a means of discovery and generation of insights in qualitative research and a learning mechanism with which to observe, study and perceive people, groups, organisations, cultures and events (Boyatzis 1998).

Despite the advantages of the use of TA as a method or tool for analysing qualitative data, it has a number of potential limitations that needs to be brought to the attention of researchers (Braun and Clarke 2006). More often than not, TA, as an analytical tool, is not directly culpable but resides more on the use of weakly conducted analyses or inappropriately constructed research questions by researchers themselves (Braun and Clarke 2006). The researcher may over use the

concept of flexibility in using TA to such an extent that the resulting analytical material is so broad that it paralyses the researcher in identifying the important aspects of the data to focus on (Braun and Clarke 2006). With the absence or lack of a clear theoretical framework underpinning a research study, TA, on its own, appears unable to anchor the data towards a clear analytical direction apart from mere description or, as Braun and Clarke put it:

“Thematic analysis has limited interpretative power beyond mere description if it is not used within an existing theoretical framework that anchors the analytical claims that are made.”

(Braun and Clarke 2006, p.97)

Finally, because TA does not appear to have the same recognition or academic elegance as discourse analysis and conversational analysis esteemed by research and researchers, TA does not allow the 'researcher to make claims about language use or the fine-grained functionality of talk' (Braun and Clarke 2006, p.97).

Conceptual framework: adaptations from Morse and Field (2002): application to qualitative data analysis

Morse and Field (2002) provide a broad over-arching conceptual framework to help with the organisation, analysis, and synthesis of qualitative data. This approach has been adopted for the thematic interpretation of data in this study at the broadest level. The framework consists of four overlapping phases or cognitive processes, mostly occurring sequentially, that appear integral to all qualitative analytical methods (Morse and Field 2002).

Comprehending the data

This phase consists of 'making sense' of the data through familiarity by reading and re-reading through the data, which involves transcribing interviews, checking and correcting the data. It involves identifying and coding the data for key items such as description of concepts and discovery of meanings and metaphors (Morse and Field 2002).

Synthesizing the data

This phase involves 'sifting' through the data in order to get a 'feel for the people, setting and context'. It involves a description of the norms and context of the setting, and it includes the aggregation of key themes and stories and accounting for any variations in the data and the identification of unusual events, attitudes and behaviours (Morse and Field 2002). This phase involves comparing and contrasting the data between participants to determine links and

relationships that may or may not exist as regards the subject matter of the data. The same situation applies equally to the Cardiac Health Care Professionals' (CHCP) interviews (Morse and Field 2002).

Theorizing and re-contextualizing the data

The last two cognitive processes of Morse and Field's (2002) framework include '*theorizing the data*', which involves triangulation of the data in this mixed methods study, interrogation of the data for explanations and '*recontextualizing the data*' i.e. the generation of the conceptual framework and its transferability to other populations and settings. These two processes, which are part of Morse and Field's (2002) framework, will be explained in more detail and applied later on in the relevant section of this chapter.

Practical framework for thematic analysis (TA) of the data

Within Morse and Field's (2002) over-arching conceptual framework with the blending of comprehending and synthesizing phases, the researcher decided to use an adaptation and compilation of both Burnard's (1991) and Braun and Clarke's (2006) framework for performing TA. The main reason underpinning this choice is based on the notion that their work provided the researcher with a relatively clear pragmatic step-by-step guide on how to proceed sequentially (though steps may overlap) through the data in a consistent, analytical, and systematic fashion (Burnard 1991; Braun and Clarke 2006) (*see below*). These guidelines were used for TA on the ten CHCP interviews performed in this chapter. A similar method, *with some slight differences*, has been applied to the thematic analysis of the cardiac patient interview transcripts in the relevant section of this chapter.

STEPS 1– 6: Thematic Analysis: the process: CHCP'S interview transcripts:

'Comprehending and Synthesizing' phases (Morse and Field 2002) and six practical data analytical steps adapted from Burnard (1991), Braun and Clarke (2006) – henceforth known as the '*BBC*' framework):

Regarding Q1: 'Meaning of QOL to you as a CHCP?' (i.e. well-being, happiness, life satisfaction, how you feel about your life? – (see appendix VI – CHCP semi-structured interview questionnaire)

1. Transcription of 'each' CHCP transcript *ad verbatim*.
2. Re-read 'each' CHCP interview transcript and full CHCP data set and make notes.
3. (a) Perform open coding of concepts/items of 'each' entire patient transcript (i.e. use of different colour codes for each question, underline/highlight concepts e.g. Q1 blue, Q2 purple, and so forth. (b) Tag/label identified codes (i.e. assign meanings to words/concepts phrases, paragraphs and underline/highlight concepts and make notes).
4. Collate concepts, items and code cluster 'amongst' CHCPs.
5. Create categories and over-arching sub-themes 'amongst' CHCPs – look for conceptual links, patterns, relationships, connectivity between code categories and sub-themes.
6. Summary, review, reduce, and finalise over-arching sub-themes and themes 'amongst' CHCPs.

SECTION A: RQ 2: CARDIAC HEALTH CARE PROFESSIONAL (CHCPs): THEMATIC ANALYSIS ('TA'): FINDINGS/RESULTS

Introduction

Firstly, the purpose of Section A of this chapter is to perform 'TA' of the CHCP interview transcripts generated from answering the second research question (RQ 2) of this research study *What are Cardiac Health Care Professional's (CHCPs) perceptions of the impact of the CRP on the older patient's QOL who suffers from a cardiac event (MI/CABG/PCI)?* Secondly, this section will demonstrate, *via an exemplar*, how 'TA' proceeded from the analysis of the transcript, open coding of data, generation of categories, identification of the sub-themes/themes and, finally, to the formation of the QOL conceptual model for older patients with CHD (MI/CABG/PCI).

A tabular exemplar of how the themes were manually produced from the CHCP interviews is illustrated in appendix XX. An exemplar of six CHCPs, from a total sample of ten (*four CHCPs were excluded for practical reasons only due to the large volume of data*), has been located across the horizontal rows of the table and they include:

- Two medical Doctors: one GP and one senior hospital Doctor.
- Two senior hospital/community Nurses.
- Two Physiotherapists: One junior and the other occupying a senior role between the hospital-community interface.

In the table, the six-point sequential steps of the 'BBC' framework are located on the vertical columns which range from the process of transcription of the interviews, formation and collation of a system of open codes to the identification of the sub-themes and themes '*amongst*' the CHCP interview transcripts (*see table, appendix XX*). In the next chapter concerning the thematic analysis of the cardiac patient's transcripts, the themes were merged between both groups, which created the stage of '*theorizing the data*' and the construction of the QOL model (Morse and Field 2002).

The above tabular example of data analysis '*relates to Q1 only*' of the CHCP 20-item semi-structured interview questionnaire i.e. '*Meaning of QOL to you as a CHCP (i.e. well-being, happiness, life satisfaction, how you feel about your life?)*.' After closely following each of steps 1 – 6 as indicated in tabular form, the following '*early*' CHCP themes were generated using the '*BBC framework*' for thematic analysis as follows:

QOL: 'early' themes (CHCPs) – Q1 of the CHCP semi-structured questionnaire

- *Physical health* – ADL's and mobility; absent/minimum cardiac complications and side effects from medication.
- *Psychological health* – freedom, independence, choices, self-fulfillment.
- *'Socio-economic health'* – family relations, hobbies, finance, active role in society.

At this point thematic analysis was not 'fully' completed, hence, the notion of 'early' mentioned above, 'until the patient transcripts were analysed' using a similar process as indicated above. Thus, in the next chapter regarding data analysis of patient transcripts, merging of themes occurred between CHCPs and the cardiac patients to create the 'final' themes. These final themes assisted the development of the QOL model (see appendix IV – 'TRIM' – *The Ripple Impact Model of QOL model*).

The individual 'BBC' steps of the framework (steps 1 – 4) used to generate the remainder of the CHCP themes are *not* shown in the rest of this discussion (*i.e. the remaining 19 questions*) due to the voluminous amount of data created at this stage of qualitative data analysis. Therefore, for the remaining discussion concerning the analysis of the CHCP transcripts, 'only steps 5 and 6 are shown' to identify sub-themes and themes that emerged from the data.

The same process of data analysis, as described above, was similarly applied to the remaining 19 questions of the 20-item questionnaire related to 'all' ten CHCP transcripts. To some extent, in addition to the above process of TA, the construction of the semi-structured interview questionnaire (CHCPs) assisted the researcher in the identification of the themes in a bid to answer this key research question. This questionnaire was developed in a number of ways, which ranged from a review of the literature on CHD, QOL and cardiac rehabilitation, to clinical meetings and interactions with staff and patients on the rehabilitation programme, follow-up clinics with the multi-disciplinary team, and researcher-patient interactions in the hospital and community settings.

Using step 5 ('BBC' framework above) for the analysis of all 'ten' CHCP transcripts, in conjunction with the 20-item CHCP semi-structured interview questionnaire (see appendix VI), five sub-themes were identified which consisted of the following:

- *CHCP perceptions of the cardiac patient's meanings and definitions of QOL (regarding (re.): Q1 – 5: semi-structured questionnaire/interview – see appendix VI).*

- *CHCP perceptions of gender and gender roles on the cardiac patient's QOL (Q8).*
- *CHCP perceptions of the impact of lifestyle change of the whole programme on the patient's QOL (i.e. exercise, relaxation, diet, smoking, patient information (Q9 -14): semi-structured questionnaire/interview (Q16 = Medication).*
- *CHCP perceptions of the impact of the CRP – social network, leisure/hobbies (Q15 and Q17).*
- *CHCP perceptions of worship/religion/spirituality on patients QOL (Q18).*

Using 'step 6' of the 'BBC' framework for the analysis of 'all ten' CHCP transcripts, *three over-arching sub-themes and themes* regarding CHCP interviews emerged from the data which incorporated the '*five sub-themes*' above.

Three over-arching sub-themes and themes (CHCPs)

- (a) *Meaning and definitions of QOL: domains of physical, psychological, social and spiritual health.*
- (b) *Learning to 'live with' and manage CHD from physical and psycho-social perspectives and patient adaptations to a changing lifestyle.*
- (c) *Impact of ageing or 'becoming older' on QOL.*

The three themes, in turn, incorporating their respective sub-themes, are addressed in detail in the following discussion.

(a): Steps 5 and 6 'BBC' framework: Over-arching theme: Meaning and definitions of QOL: domains of physical, psychological, social and spiritual health.

{Incorporating the five sub-themes above: See CHCP semi-structured interview questionnaire (appendix VI) and interview transcript (Senior Nurse) (see appendix XXII)}.

Ten cardiac health care professionals (CHCPs) consisting of three doctors, two physiotherapists and five nurses generally found the concept of QOL difficult to define particularly from another person's perspective. Generally, the nurses and physiotherapists stated that the:

"Definition of QOL belonged to the patient experiencing it. It is a very personal idea which is owned by the individual. We are all different coming from different

parents and genes, some patients come from different cultures, and we all have different personalities. In our opinion, the most important view and definition of QOL is the patient's own unique view and definition".

The doctors summed up their definition of an older person's QOL:

"We are not totally sure how to define QOL. It's a difficult concept to pin down but we know from our experiences, they are the 'things' that make life worth living. Being in reasonable physical and psychological health is essential. It's about maintaining some dignity and independence and having enough money and good family relations to enjoy a decent living."

The CHCPs were generally clear that the older cardiac patient's QOL cut across four overlapping 'life domains' consisting of physical functioning, psychological well-being, social aspects and spirituality/religious activities. It should be noted that the CHCPs' definition of QOL was relatively wide and incorporated non-medical aspects e.g. financial security and spirituality aspects, as opposed to the narrower definition of QOL. This is related to health or functional status, better known as Health-Related Quality of Life (HR – QOL). Health, though important, is only one aspect of the multi-dimensional nature of QOL.

Physical functioning related to cardiac patient's ability of carrying out their activities of living in a 'reasonably' independent fashion. The nurses and physiotherapists stressed the importance of 'reasonable' physical health and independence:

"Carrying out the ordinary things in life is important for older people. This involves being able to get up in the morning, to carry out basic hygiene needs: preparing daily meals, sorting out the house work, going out shopping and collecting their pensions if retired."

Another aspect of physical functioning is the cardiac patient's ability and willingness to take on board health promotion advice from the health care team. This is what the senior hospital doctors said about physical care:

"Where possible and with support, it's important for the patient to manage their cardiac illness and disease, particularly in terms of knowledge and recognition of cardiac symptoms. Then they need to seek medical and health professional advice if old or new symptoms develop. It is also important they comply with the appropriate cardiac medication particularly for relief of chest pain or breathlessness."

It is important for CHCPs to be aware that patients require an understanding of the importance of taking medication, often for life, as heart disease falls in to the realms of chronic disease management. Therefore, according to all three doctors:

“Patients need knowledge of the side effects of medication and knowing who to look to and where to go for advice besides making their own decisions about stopping their medication abruptly which can be detrimental to their cardiac health”.

The CHCPs perceived the patient’s psychological well-being as being equally important as physical functioning. They generally agreed that:

“From a cardiac point of view you could be physically fine and able to function but what good is that if you are clinically depressed or crippled by anxiety with little motivation and disinterested in life”“a good psychological QOL means that patients should be able to enjoy life or to pursue their own levels of contentment defined by them. They need to have some individual freedom and to be able to make “choices” about enhancing their lives – physically, or psycho-social or spiritual, if the latter is important to them”.

This psychological ‘domain’ related to achievement and fulfillment of their own goals through their own independence and autonomous action based on their own individuality, personality and culture. This domain also incorporated the physiotherapist’s view:

“Cardiac patients, if possible, need to be able to ‘reasonably’ cope emotionally with CHD and to begin to accept their diagnosis, especially with something as serious as a ‘heart attack’. Some patients need a lot of professional help from us and a lot of family support to manage stress, anxiety and depression that CHD may bring.”

Cardiac patients need to be able to enjoy life from a social perspective, as it is another important domain of QOL. The CHCPs agreed that social life, pursuits of leisure, hobbies and enjoyment of their retirement time were important for a well-balanced experience of life and health. For some older people, especially, if the intention was to keep busy or to facilitate an easier transition to full retirement, work was viewed by staff as having a positive impact on the cardiac patient’s QOL. But if the patient’s work intention was mainly due to necessity and financial need, it tended to have a negative impact on the patient’s QOL due to the stress and anxiety it created for the appropriate patient. With reference to some older cardiac patients’ compulsion to work beyond retirement, the nurses agreed that:

“If patients have to work, especially full time, out of necessity as they need the money for the family or mortgage, then it’s not good for their QOL. They often worry, are stressed out and they know they want to retire but can’t – even though they have suffered a heart attack or had surgery – so they are not in full physical health, either”.

For older cardiac patients, a relatively happy retirement was seen by the some of CHCPs as essential to a good QOL. Nurses and physiotherapists placed particular importance on the patients’ retirement:

“It gives people choice, to be able to do what you want to do (e.g. meeting friends, golfing, holidays) and to do it when you want, it gives you freedom and a chance to be with the family.”

Strong and close family relationships were perceived by all the nurses to be important for cardiac patients in these contexts, especially grand-parenting roles:

“To have some quality time to be able to look after the grand-children, to spend some time with them and to enjoy them and to take the grand-kids out socially to give their Mum and Dad a bit of a break.”

The nurses and physiotherapists understood that this group of patients came from the ‘*post-war generation*’, where they perceived that a relatively clear division of labour existed between the sexes and gender roles and how this related to QOL. This group of CHCPs defined ‘*post-war generation*’ as those people born approximately at the beginning of the Second World War (approximately 1939 – 40 AD). This figure was calculated by subtracting the mean age (69 years) of the total sample of the cardiac patient population (thirty-six patients) from the time of completion of the study in 2009 AD (mean age = 69 years minus 2009 AD = 1940). Technically, these people were born just before or when the war began and brought up in post-war England, therefore, they would be in their teenage years in the mid-fifties in Yorkshire. This raised an interesting point, as it seems to indicate that QOL is ‘*generation-specific and temporality-bound*’ related to parenting and upbringing and to the values of that epoch. All the nurses (senior and junior) and physiotherapists stated that:

“These people (who are now our patients) are generally ‘post-war babies’ where times were often difficult here in Yorkshire. These people deal with adversity e.g. illness with a ‘stiff upper lip’ attitude, a stoical attitude. They tend to deal with illness and get on with it even if it means ‘bottling-up’ symptoms, especially with men, which is not always good for their heart disease or QOL.”

They go on to say that:

“This generation’s gender roles were relatively well-defined through upbringing and conditioning where a man did a man’s work e.g. gardening or other heavy manual work where, in contrast, a woman’s responsibility was housework, shopping, cooking and looking after the family”.

However, they also noticed, in a bid to avoid group labelling and stereotyping, that if one spouse became sick with heart disease or any other disease, these gender role differentiations evaporated:

“With some of the patients that we have met, generally, they just ‘muck in’ and help each other out when one of the spouses is poorly. It doesn’t matter who does what as long as they look after each other when they get sick. Occupational work and household chores are usually managed and eventually get sorted out.”

In relation to gender differences, the senior doctors noted that, numerically, there were roughly twice as many women in the population than men from 65 years onwards, which is related to men’s higher mortality rate due to various diseases, including heart disease. This meant, as they said from their own professional experiences:

“That women are older (than men) when they get heart disease, it’s often worse than men’s with a worse prognosis. This more extensive CHD in women carries high morbidity rates.”

For the senior doctors, generally, women with CHD required careful medical/surgical attention with close monitoring, treatment and evaluation in view of the more severe nature of CHD that tends to afflict them.

The CHCPs viewed the concept of spirituality as important for some patients and unimportant for others. They made an overlapping distinction between spirituality and organised religion. Spirituality was concerned with a person possessing moral principles and values that guided them towards righteous paths in life. A person could be spiritual without necessarily practising it in church or other area of worship. Religion is related to spirituality in terms of the possession of values and principles but extends to practising a person’s faith in a place of worship e.g. church, synagogue, or mosque.

Some of the CHCPs noted that '*religion is a very individual thing; it’s very important for some and completely unimportant for others*'. Most of the nurses commented that religion and spirituality:

“Often acts as a source of comfort for people who are unwell and sick, that is, for those people that have beliefs in some faith or divinity. Being aware of this QOL component is important if we want to care for the patient in an holistic fashion. Take, for example, if a devout Muslim patient cannot attend the mosque due to illness like CHD, then this will have an adverse impact on the patient’s QOL.”

The GP stated that:

“Open and public practice of religion is a social network, a motivated, self-disciplined group where people meet, talk and learn about their spiritual beliefs, life’s daily trials and tribulations, their worries and their illness. We as professionals need to be careful with timing of patient medication, especially with diuretics e.g. frusemide, as this can disrupt the many frequent prayers that the Muslim population practice per day.”

Three different professional group's (nurses, doctors and physiotherapists) perceptions of the definition and the constituents of QOL are reflected in the qualitative interviews. Some differences in perceptions concerning QOL emerged between the professional groups. Doctors' perceptions of the cardiac patient's QOL tended to emphasise and focus on the bio-medical model, although this was not exclusively the case, as from time to time, they mentioned the importance of wider aspects of QOL, such as finance, neighbourhood quality, psycho-social entities, spirituality/religion, relationships, mental well-being and friends and family. However, whether they were occupying a GP or hospital physician role, they were particularly concerned about controlling and managing the patient's physical signs and symptoms, for example, chest pain, breathlessness and cardiac related oedema. They were more focused on the accurate diagnosis of the patient's cardiological problem in terms of the treatment and management of the patient's heart disease by medication prescription or pharmacological intervention and the detection of drug adverse effects. These aspects are evident in the words of the three doctors who stated that:

"Where possible we want our patients to be symptom free, to have none or at worst, minimal levels of cardiac related chest pain and shortness of breath or managing pulmonary or leg oedema if the patient suffers from heart failure. We also need to closely monitor any drug side effects so that my patients are able to tolerate the medication or change the medication altogether if the patient develops side-effects. We also want to monitor any heart disease progression and try to arrest, manage or prevent this process to the best of our ability."

In contrast, nurse's perceptions of the patient's QOL focused more on an holistic model of care where an even balance was placed on the patient's physical, psychological, social and spiritual entities. However, the nurses in this study tended to emphasise the social context of health and QOL:

"Being in the community as well as the hospital for rehabilitation sessions, we can see the 'bigger picture'. We can see the patient's social situation and environment, where they live, what is their social standing and how all this influences the patient's QOL. Hospital based nurses e.g. in the coronary care unit (CCU) are not usually in a position to see this social context. They have to rely on the patient's and family's subjective accounts which may or may not be always accurate."

Physiotherapist's perceptions of the cardiac patient's QOL were similar to nurses as they could also see the relevance and importance of the holistic model, but their professional biases and emphasis tended towards physical exercise and therapy, movement, gait and mobility. Professionally, they do *not* deal with patient's medication or pharmacological management as they are not trained or educated in this aspect of the patient's care. This area of care is left to the doctors and nurses for the provision of advice to patients. The physiotherapists stated that:

"We can't deal with the medication aspects of care so we will leave that to the nurses and doctors. We are very keen on physical exercises and therapy (both aerobic and Tai Chi) so that patients do them safely within their own physical limitations. We use the patient's maximal heart rate, the Borg scale, and our own professional training and experience to guide us in providing the best physical therapy or exercise regimes based on the best current evidence."

(b): Steps 5 and 6 'BBC' framework: Over-arching theme: Learning to 'live with' and manage CHD from physical and psycho-social perspectives: patient adaptations to a changing lifestyle.

{Sub-themes – CHCP semi-structured interview questionnaire (see appendix VI) and interview transcript (Senior Nurse) (see appendix XXII).}

- *CHCPs perceptions of impact of lifestyle change of whole programme on patient's QOL (i.e. health promotion, exercise, relaxation, diet, smoking, patient information (Q9 to 14 - semi-structured questionnaire/interview).*
- *CHCP's perceptions of CRP and improvements for enhancing patient's QOL (Q19 and 20 - semi-structured questionnaire/interview).*

CHCPs' perceptions, in relation to this over-arching theme and sub-themes, focused on patient's adaptation to a changing lifestyle and living with CHD as a chronic health problem. Lifestyle change occurred around the reduction, or the minimisation, of a number of key cardiac risk factors related to the individual's cardiac event. These risk factors included minimising obesity by taking more aerobic exercise and eating a healthy diet. It involves patients learning how to relax and to minimise stress, to maintain the absence or reduction of smoking and the reception of optimum patient information to make informed decisions about adaptations to their healthy lifestyle. It includes medicines management for managing high blood cholesterol, high blood pressure, pain control or improving cardiac function. As the patient engaged with these coronary risk factors, thus began the process of learning to recover and to recuperate and to live with their cardiac event.

Nurses and physiotherapists agreed that:

"It's important to assess the patient's, attitudes and outlook, perceptions and beliefs about changing their lifestyle and to gradually modify their cardiac risk factors based on individual patient assessments – this comes with knowing your patient well through interactions, conversations and the events occurring on the CRP."

Health education and health promotion activities by all the CHCPs are part and parcel of helping and empowering cardiac patients to manage their lifestyle effectively and to live with CHD:

"For older cardiac patients, it's never too late to take onboard a healthy lifestyle but patients need to understand with our help that heart disease is a lifetime problem and to learn to accept that the disease is chronic in nature. This is easier said than done, physical exercise is hard work and demanding, giving up smoking is never easy, adapting to a healthy diet takes time, and learning to take medication for the rest of your life is difficult."

The nurses realised that:

"We also need to think about educating the patient's partner and family so that patients are able to keep motivated in maintaining their healthy lifestyle at home beyond the hospital walls. Education and advice provides a patient with knowledge, empowerment, self-confidence in their own physical capabilities, mental well-being and in leading a reasonably active and healthy social life."

Nurses and physiotherapists recognized that health promotion with cardiac patients should be democratic and never autocratic or coercive in style. Patient information, by verbal and written means, is provided briefly and concisely with jargon-free language aimed at each patient's level of understanding:

"We can only provide the patient with the best available advice and education. It's down to patient choice to accept it or disregard it. We need to be conscious of how we get our message across so that the patient can understand their cardiac risk factors and how to manage them effectively. If the patients default from time to time and want to eat greasy fish and chips, say, once a week instead of three times weekly – that's ok with us too – it's still an improvement in their lifestyle behaviour."

All the CHCPs perceived the exercise schedule of the programme as being crucially important in enhancing the patient's QOL, not operating in isolation but in harmony with the other CRP components:

"Exercise, with the health promotional elements of the CRP, matters to the patient. We think that objectively (through our audit mechanisms and the physical measurements we do pre and post programme) and subjectively that our patients do well physically and psycho-socially and this includes those patients who come from ethnic minority groups. Their gait, balance, walking and exercise capacity improves over the time they are with us."

The CHCPs also perceive the psycho-social benefits of the CRP in improving the cardiac patient's well-being:

"It's not just the physical benefits that we see. We think that the patient's QOL improves educationally, socially and psychologically. Patients gain confidence, feel safe, feel empowered and grow in self-esteem. They consistently come back and tell us how much they enjoyed the CRP. They, generally, continue with some form of exercise e.g. walking, swimming, golfing, gardening or adapted home-based exercises that they have learnt from us."

Relaxation and stress management was perceived by the nurses and physiotherapists as an area in need of improvement for patients on the CRP. Relaxation was performed for ten – fifteen minutes at the end of each exercise schedule. A relaxation tape was used with soft relaxing music, with either a nurse or physiotherapist giving instructions on how to relax e.g. breathing exercises and thinking strategies. These CHCPs felt that this activity wasn't long enough in terms of time and that not sufficient emphasis was placed on it. Moreover, the wider aspects of stress recognition required improvement with the use of an assessment tool e.g. Hospital Anxiety and Depression Scale (HADS). The CHCPs pointed out that that more human resources were necessary, for instance, the appointment of two clinical psychologists at the trust instead of one person who already had a heavy workload schedule. Moreover, clinical psychology was geographically placed near the Psychiatric unit, which did not facilitate patients' disclosure of admitting to a psychological problem, even though this was not a common phenomenon on this CRP.

The nurses and physiotherapists commented:

"We need to 'brush up' on our stress and relaxation management on the CRP. To be honest, none of us are trained in this area; a clinical psychologist would be ideal to help our patients on the CRP. We think all patients could all do with learning how to deal with stress effectively and to learn how to relax. We need to use the HAD scale systematically to help us identify who needs specific help."

One senior nurse wished to see improvements in human and material resources. The rehabilitation services were utilised narrowly in the trust to meet the needs of patients with an MI/PCI/CABG. She stated that:

"There are many other cardiac patients 'out there' in the community who suffer from stable angina and heart failure that have no access to any rehabilitation services. We, at the hospital, have only enough funds and staff to cater for our three main groups of cardiac patients (MI/PCI/CABG) – this is a great pity but what can we do in this political climate?"

All the CHCPs agreed that female patients with cardiac events who originated from ethnic minority groups were poor attendees at the CRP due to a number of reasons related to culture, belief systems about illness and family commitments. Nurses, doctors and physiotherapists commented:

"We are aware that some (not all, by any means) ethnic minority women tend not to exercise once they have recuperated from their acute cardiac event. Some don't tend to listen to health care staff such as nurses and physiotherapists. They only tend to listen to the doctor's advice which is related to their culture, health beliefs and the higher social status of doctors in relation to other professional groups. We have tried everything here in the trust/community settings to alleviate the problem (e.g. ethnic-minority-only groups) which is getting somewhat better regarding their access and attendance but still remains a rather difficult and problematic area."

(c): Steps 5 and 6 'BBC' framework: Over-arching theme: 'Impact of ageing or 'becoming older' on QOL

Sub-theme (below) – semi-structured CHCP interview questionnaire (see appendix VI) and interview transcript (Senior Nurse) (see appendix XXII).

- *CHCPs' perceptions of the impact of ageing on the cardiac patient's QOL (Q7 – semi-structured questionnaire/interview).*

The CHCPs, in general, had mixed perceptions, from positive to negative, in relation to how age and ageing influenced QOL. The GP felt that:

"Ageing was a relative concept; it's a complex issue and not easy to define. For some patients, ageing and its influence on QOL doesn't seem to matter. All you have to do is think about the 84-year-old lady that crossed the St Lawrence River a few years ago in North America. Even for a young man or woman, this is a very difficult feat, but it didn't seem to matter to this lady; all you can do is sit back and admire her."

The senior staff nurse differentiated between chronological age and age being a 'philosophical state of mind'. She went on to say:

"Some other people perceive that reaching 70 years is a real bonus to them living life to the full, getting more experienced, older and wiser. In contrast, I, as a nurse, have met some middle-aged people, men and women, around 45 yrs, who have grown old before their time. This was not so much to do with chronological age but more related to their attitude of mind, their outlook and what drive the individual has within him or her."

The three doctors stated that:

"From a medical perspective, we know that as age advances, disease is never too far away. But, this is not always the case, as there are older people in the community in relatively good health that we never see. It's not just CHD that is

more likely to occur but other co-morbidities as well e.g. arthritis, high blood pressure, some cancers, cardiac and general cell apoptosis bringing on more morbidity."

Three doctors and a senior nurse go on to describe some of the negative aspects of ageing:

"For some people, ageing is sometimes associated with physical degeneration and psycho-social loss and generally getting more forgetful. Some older people can become isolated and lonely due to losing their partner, families or friends through death. However, generally, we feel that older people are strong and resilient and battle against disease, sickness and loss. Some of these older people need our support, care and professional help with this kind of adversity."

SECTION B: RQ 3: CARDIAC PATIENTS: THEMATIC ANALYSIS ('TA'): **FINDINGS/RESULTS**

Introduction

The main purpose of Section B of this chapter is to perform 'TA' of the patient transcripts generated from answering the third research question (RQ 3) of this research study – RQ3: *How does an older cardiac patient, enrolled on a CRP, define QOL in relation to their cardiac event (MI/CABG/PCI)?* A non-random purposive sample of seven older cardiac patients was chosen for semi-structured interviews to gain an in-depth comprehensive understanding of their perceptions of the impact of a CRP on their QOL. The semi-structured interviews (one hour in length, audio-taped) took place over a seven- month period from January 2009 to July 2009. One interview was negotiated by the researcher with each of the patients in turn and carried out on a monthly basis in a quiet location at the patient's own home. The researcher obtained access and informed consent (verbally and in written form) from the patient sample. The patients were provided with clear, detailed verbal and written explanations of the purposes of the study and were assured of anonymity and confidentiality throughout the interview process and the entire length of the research study.

The cardiac patient sample consisted of:

- Two females (aged 67 and 68 years old) were diagnosed with a STEMI (ST (wave) Elevation Myocardial Infarction). In addition to the STEMI, the 68-year-old lady had an Angioplasty with a stent inserted into the coronary arteries.

- One female (aged 69 years old) from an ethnic minority group was diagnosed with a dual diagnosis of PCI (Percutaneous Coronary Intervention) with a stent and a NSTEMI (Non-ST wave Elevation Myocardial Infarction).
- One female (75 years old) was diagnosed with a CABG (cardiac surgery – Coronary Artery Bypass Graft). The female age range was between 67 - 75 years old.
- Three males: one male (67 years old) was diagnosed with a CABG; one male (82 years old) was diagnosed with a NSTEMI; and, finally, one male (aged 63 years old) had a dual diagnosis of PCI and STEMI. The male age range was between 63 – 82 years old.

In a similar way to the previous chapter, the concept of thematic analysis (TA), (within Morse and Field's (2002) framework, plus the use of the 'BBC' framework below), was used as a mechanism to undertake qualitative data analysis to address the above research question (RQ3).

STEPS 1 – 5: Thematic Analysis: Patient interview transcripts: 'Comprehending and Synthesizing' phases (Morse and Field 2002) and five sequential steps – Burnard (1991); Braun and Clarke (2006) – 'BBC' framework):

Regarding: Q1: What does QOL mean to you now after you have had your heart event {i.e. heart attack, angioplasty or heart surgery? (see appendix VII – cardiac patient interview questionnaire)

1. Transcription of 'each' patient transcript *ad verbatim*.
2. Re-read 'each' cardiac patient transcript and full patient data set and make notes.
3. (a) Perform open coding of concepts/items of 'each' entire patient transcript (i.e. use of different colour codes for each question, underline/highlight concepts e.g. Q1 blue, Q2 purple and so forth. (b) Tag/label codes (i.e. assign meanings to words, phrases, paragraphs, underline/highlight concepts and make notes.
4. (a) Collate concepts 'amongst' cardiac patients; (b) collate concepts "amongst" CHCPs; (c) collate concepts and form code clusters 'between' cardiac patients and CHCPs; and, finally, (d) create categories and over-arching sub-themes 'between' both groups – look for conceptual links, patterns, relationships, connectivity between code categories and sub-themes.

5. Summarise, review, reduce, & finalise over-arching sub-themes and themes 'between' CHCPs and cardiac patients.

A tabular exemplar of how the themes were produced by manual means from the cardiac patient interviews is illustrated in appendix XXI. An exemplar of six cardiac patients, from a total sample of seven (*one patient transcript was excluded for practical reasons i.e. ease of cross-comparison (even numbers) between patients and CHCPs transcripts*), has been located across the horizontal rows of the table and they include:

- Three male patients (pseudonyms – Kes, Frank and Tom), respectively aged 82, 63 and 67 years old; respectively diagnosed with a NSTEMI, STEMI with PCI /stent, and, finally, Angina/CABG.
- Three female patients (pseudonyms – Jean, Jo and Majina) (respectively aged 75, 68 and 69 years old); respectively diagnosed with Angina/CABG, STEMI/PCI with stent and, finally, a NSTEMI with PCI/stent.

The five-point sequential steps of the '*BBC*' framework (see above) are located on the vertical columns which range from the process of transcription of the interviews, formation and collation of a system of open codes to the identification of the themes 'amongst' the patient transcripts (see appendix XXI – *table*). The themes were merged between the CHCPs and the cardiac patients, which formulated the stage of '*theorizing the data*' and the construction of the QOL model (Morse and Field 2002). This tabular example of data analysis relates to Q1 *only* of the patient's 23-item semi-structured interview questionnaire (see appendix VII) i.e. *what does QOL mean to you now after you have had your heart event (i.e. heart attack, angioplasty or heart surgery?* After closely following each of the steps 1- 5 as indicated in tabular form (see appendix XXI), the following themes emerged using the '*BBC*' framework for thematic analysis:

- QOL: personal, individual, subjective concept: '*The eye of the beholder*', *different dimensions*.
- QOL: physical health and symptoms: Ability to self-care; mobility and carrying out ADLs; absent/minimum cardiac complications (e.g. heart failure/angina); absent/minimum side effects from medication; pain-free where possible or medically well-controlled.
- QOL: psychological health: Mental well-being and contentment; freedom; independence; choices; self-fulfillment; greater confidence after cardiac rehabilitation; learning to manage

co-morbidity and develop coping strategies to manage tiredness and fatigue post ‘heart attack’ (MI).

- QOL: socio-economic health: Close family relationships and friendships; pursuit of individual hobbies/past-times; financial security (*‘enough money’*, not necessarily wealth); some useful role in society on retirement (e.g. helping others, voluntary work).

The individual ‘BBC’ steps of the framework (1 – 3) used to generate the remainder of the patient themes are *not* shown in the rest of the discussion (*i.e. the remaining 22 questions*) due to the large volume of qualitative data. Therefore, for the remaining discussion concerning the analysis of the patient transcripts, *only steps 4 and 5 are shown* to identify sub-themes and themes that emerged from the data. The process of thematic analysis outlined above in conjunction with the construction of the 23-item semi-structured interview patient questionnaire in a bid to answer the key research question (RQ 3) assisted the researcher in the identification of the themes. This questionnaire was developed in a very similar fashion as declared in the previous chapter (*i.e. academic literature, patient-staff interactions, and the cardiac rehabilitation process*).

Using step 4 from the ‘BBC’ framework above, in conjunction with the patient semi-structured questionnaire (see appendix VII), five sub-themes (below) emerged from the data.

Step 4 (‘BBC’ framework): five sub-themes (cardiac patients – all remaining 22 Qs – semi-structured patient interview questionnaire – see appendix VII)

- *Meaning of QOL before and after the cardiac event (Q1 - 3).*
- *Bio-psycho-social and spiritual elements of QOL (Q4 - 8 and Q10).*
- *Making choices, independence, retirement and QOL (Q9 and 12).*
- *Culture, upbringing (Q11) and gender (Q21) in relation to QOL.*
- *Becoming older and QOL (Q20).*

Arising from the above process, *one over-arching theme* emerged from the data which incorporated the *‘five sub-themes’* above. This over-arching theme was the *‘Older cardiac patient’s definition and constituent elements of QOL on a CRP’*.

(a) Step 5 ('BBC' framework): One over-arching theme: Older cardiac patients' definitions of QOL on a CRP: domains of physical, psychological, social and spiritual health (Incorporating the above five sub-themes)(see semi-structured patient interview questionnaire – appendix VII and cardiac patient interview transcript – appendix XXIII)

Patients defined their QOL in a number of different ways but mainly within the realms of the bio-psycho-social and spiritual model – the latter only relevant to some. Generally, the cardiac patients felt that QOL was associated with being in a 'reasonable state' of:

“Physical and mental health to be able to carry out their ordinary activities of living e.g. getting up in the morning, feeling well mentally, sorting out the house work, going shopping and looking after the grand-children, meeting friends and socializing and keeping interested in your hobbies”.

In relation to physical health particularly associated with both males and females who suffered an MI, they described their QOL as being adversely affected. This occurred especially if they suffered from a post-MI complication such as angina, which displayed symptoms of moderate to severe intensity of intermittent chest pain and breathlessness. Once these problems were controlled with appropriate analgesia and medication by CHCP interventions, patients felt better about their QOL. However, the patients (three females and two males) diagnosed with an MI (STEMI or NSTEMI with or without PCI) stated that:

“This ‘heart attack’ shocked us as it came on suddenly. We had a severe attack, called a STEMI. Since then, we have slowed down quite a lot physically. We are not as active as we used to be. But thanks to the hospital staff, we have learnt to control this with the health advice, pain relief (GTN) and the medication we take. We get easily tired and fatigued which we didn't have before the ‘heart attack’. Since we started on the CRP at the hospital, we feel much better, more confident and we have learnt to balance exercise with enough rest. We have now decided to devote more time to 'US', instead of running around after others all the time.”

Two patients who had a PCI or Angioplasty (with/without a stent) and the two patients who had a CABG (i.e. reperfusion therapies for severe unstable angina and/or primary angioplasties for acute MIs), described their QOL as being much better post-intervention than before.

“We very worried about the heart surgery as it was it was a major operation with the risk of some serious complications. We couldn't go on with this angina as we were getting regular chest pains, even at rest, which was destroying our QOL. We went through with the surgery at hospital X. It wasn't easy trying to recover. We are so glad now we did as the operation has given us a 'new lease of life': we can go walking and swimming, and do our chores without any chest pain or breathlessness. Mentally, we feel much better as we have no pain and we feel

'cured' as a result of the operation. The whole experience has changed our outlook as it has made us realize about the fallibility of life."

Six of the patients interviewed perceived their retirement time, once they acclimatized to the experience of so much free time, as a *'real bonus to our QOL'*. (There was one exception to this rule: one female patient found retirement *'boring and quite lonely'* and went back to work part time for two further years and then retired contented). One male, named *'Kes'*, aged 82 years old and diagnosed with a NSTEMI, seemed to echo what the other six patients felt:

"Retirement gives you time and independence, which takes a bit of getting used to, as sometimes you miss work and friends. Being in 'reasonable health' is important. I don't expect 'perfect health' as I am getting old, becoming arthritic and now I have had a heart attack recently. The important thing to me is to have 'choices and freedom' – to choose where to go, when to go and who to see. Me and Mary (my wife) have children and grandkids and we go to see them regularly. I like playing nine holes of golf and I am a member of the Masonic Lodge where we raise money for charity. Living in a good neighbourhood, owning a car and having enough money to get by are also important to my QOL."

Concerning the concept of religion/spirituality, *'Kes'*, from a Church of England denomination, stated that:

"Me and 'Mary' (wife) like attending church on Sundays which we try to never miss. It's a bit like the Masons, you know. It's about being in a social situation and helping others as we all try to raise money for charity. Also, my belief and religion has been valuable to me when I was poorly with 'me' heart attack. The vicar came to see me in hospital X. Funnily enough, we didn't speak about religion very much at all but spoke about other things like other people we mutually know. This was a great comfort to me, a source of solace, a diversion from thinking about your own health problems. It (religion) really helped me – you know! That was important to me."

Similar to Kes above, Majina, from an Asian culture, found great comfort in practising her Muslim religion. In her own words (she spoke several languages, including fluent English), she said:

"Practicing my religion is important to me as I pray five times a day, every day, in the Muslim faith. I found it a source of comfort and guidance whilst I had the heart attack which I found frightening. It's not just that, as you know; I am also under investigation for bowel problems – everything seems to happen all at once."

Her QOL, in terms of definition and elements, did not appear any different to the Caucasian culture. Her QOL structure was multi-dimensional in nature, consisting of bio-psycho-social and spiritual elements. Similar to some other cardiac patients in the sample, she perceived that the cultural practice of her religion was important to her:

“At the moment I am very busy; I have just come back from seeing my son in a ‘certain’ African country. I am not in good health, as you know, but I have to keep going. The religious festival of Ramadan is coming up soon and I am preparing for that with help from my daughter. I like to go shopping with her and going to see some female friends near where I live.”

For the other five patients interviewed, spirituality influenced their QOL and not so much organized religion where people display their faith in public by regular attendance at a place of worship. They defined their spirituality in terms of moral codes and righteous principles or Victorian values by which they were reared. They believed that it was not mandatory for them to attend Church as they attempted to practice their moral customs in their journeys through life. They go on to say:

“We feel we don’t have to go to Church (of England) to be a good Christian. We live by good old-fashioned Victorian values and principles. We were brought up very well by our parents – strictly but fairly. We had a good childhood. We went to Church regularly when we were young, sometimes two or three times a week. We are not churchgoers any more, but we never do anybody a ‘bad turn’.”

Culture, upbringing and gender were perceived by patients as important in shaping a person’s personality, character, ethical behavior and overall QOL. This is what the three male patients, originating from Yorkshire, said about culture, upbringing and gender:

“Coming from Yorkshire is important to us as we know nothing else. We all like sport e.g. cricket and supporting the local football team. We came from stable happy backgrounds. Our upbringing was important to us in building character, learning good manners, morals and standards from our parents, learning how to deal and communicate with different folk from different cultures. Roughly, we were born in the mid-war years where the tradition then was that women stayed at home, cooking, and looking after the house and children. Men went to work in the factories, mills and ‘down the pit’ or wherever you could earn a ‘few bob’ to make ends meet to support the family.”

The patient sample views of gender and gender roles seemed to be reasonably well traditionally defined in terms of male and female roles, but the boundaries disappeared or were heavily blurred for both sexes when illness struck. The four female patients stated that:

“Generally, we have our own little jobs and the men have theirs. The men, generally, do the gardening and look after the cars and the bills so they are mostly out of our way (laughed) when we do the house work – cleaning, washing, ironing and shopping. But when we became ill with the heart problems, the men ‘mucked in’ and did the housework and all the things we did. If they were unwell, we would do the same for them. Really, at the end of the day, it doesn’t matter who does what.”

Majina's culture and upbringing was different to the English western tradition but it still had no less strength in shaping her QOL. She was reared in South India to an African father and an Indian mother within an Islamic tradition. She spent most of her youth in South India. Both parents with Majina and her sister immigrated to an African country when she was 13 years old. Eight years later she was married by arrangement to an Islamic Indian husband. They spent ten years working and living in Africa and then decided with her husband and siblings (three boys and one girl) to move to Yorkshire in England and has lived there up to the present time. In light of this, she said:

"I am proud of my Asian culture with its customs, traditions and beliefs in the Muslim faith. I have also been influenced by a certain country in Africa where I have learned to speak different languages and fluent English. I have also been influenced by the English culture where I integrate well with people. I look after my husband and grandchildren as best I can, although my health is not good. I feel that my background had been varied and interesting, which has influenced me as a person and shaped my QOL."

Generally, patients had a mixed reaction as regards the impact of ageing on QOL. Mainly, their views were positioned in two camps. The first camp saw the positive aspects of getting older portrayed by 'Frank', age 63 years:

"Getting older does not really affect my QOL. I might be 63 years of age but up here (pointing to his head – psychologically or mentally) I am 32. I have a young outlook and this keeps me young. If you mix with people who have a young outlook then it will rub off on you. It's associated with how you think; it's an attitude of mind. Age is just a number, it's all in the mind, if you think old, then you will be old."

The second camp, portrayed by 'Jo', aged 68 years old, reflected the negative aspects of ageing, as she said:

"Getting older does influence your QOL; you slow down physically and start to lose some freedom of getting around like you used to; for example, arthritis and stiffening legs makes you physically less mobile. Mentally, you start to lose some memory. You tend to get more forgetful especially for names and you find yourself going through the alphabet in trying to remember the person's name that you're talking to. It seems to me that as you get older, diseases seem to come together with one thing after another. However, you still have to keep positive despite all this or otherwise the whole thing would get you down."

In conclusion, the meaning and definitional aspects of the cardiac patients' QOL from their own perspectives reflected the multi-faceted aspects of the concept. This incorporated physical, psychological, social and spiritual boundaries. QOL seemed to be very much owned and defined by the particular patient's life circumstances in relation to the type and severity of the cardiac

event, retirement and financial status in terms of independence, choice and freedom. For all patients in this sample, culture, upbringing and gender impacted on QOL in a positive fashion. Their QOL was connected to their particular generation, in the post Second World War era, so their QOL took on a temporal framework. Practising organised religion and 'becoming older' affected some patients QOL in a major way. This was evident with the association of the Islamic religion with the Asian culture and, for some, the association of Christianity with the white Caucasian English culture. For others, these made little or no difference to QOL at all. Living by moral credos and principles, in terms of ethical and spiritual influences, had a positive impact on all the patients' QOL.

In summary, this section has attempted to answer the third research question in relation to '*how the older patients with an MI/CABG/PCI define QOL*'. In this context, they perceive QOL as unique and individual to them. Their QOL was molded and owned by their own hopes and expectations, character, culture and time, temporality and generation. These notions are closely associated with the concepts of choice, independence and autonomy within life's journey. The next section continues the story with the examination of the final research question related to the bio-psycho-social impact of the programme on the patient's QOL with a cardiac event.

SECTION C: RQ 4: CARDIAC PATIENTS: THEMATIC ANALYSIS ('TA'): FINDINGS/RESULTS

Introduction

The main purpose of Section C of this chapter is to perform 'TA' of the patient transcripts generated from answering the final research question (RQ 4) of this research study: *RQ 4: what are the older cardiac patient's perceptions, meanings and experiences of the bio-psycho-social-spiritual impact of the CRP on their QOL?* Answering RQ 4 is an extension or a continuation of the previous section concerning RQ 3 on definition, meanings and elements of QOL. It should be pointed out that the focus and emphasis now turns towards the bio-psycho-social impact of the programme on the patient's QOL. This process of answering the research questions (RQ 3 and RQ 4) in these two overlapping sections addresses all the remaining questions left on the 23-item semi-structured patient questionnaire (see appendix VII). The semi-structured interviews, based on the 23-item patient questionnaire (one hour in length and audio-taped), were carried out on the same non-purposive sample of seven cardiac patients as RQ 3 in a quiet location at the patients' homes. All the key ethical issues were applied and upheld by the researcher.

The individual 'BBC' steps of the analytical framework (steps 1 – 3) (see *previous chapter*) used to generate the remainder of the patient themes are *not* shown in the rest of this discussion (*i.e. the remaining eight questions identified below*) due to the large volume amount of data generated. Therefore, for the remaining discussion concerning the analysis of the patient transcripts, *only steps 4 and 5 are shown* to identify sub-themes and themes that emerged from the data.

Using step 4 from adaptations of Burnard's (1991) and Braun and Clarke's (2006) 'BBC' framework, in conjunction with the patient semi-structured questionnaire (see appendix VII), *five sub-themes* were identified, which consisted of the following:

- *Impact of health promotion activities, lifestyle change and dietary advice (Q13, Q15, and Q19).*
- *Impact of stress management and relaxation schedules (Q16).*
- *Impact of exercise schedules (Q17).*
- *Impact of medication advice and knowledge gain (Q18).*
- *Impact and improvements of the CRP to the patient's QOL (Q22 and Q23).*

Arising from the above process, 'one over-arching theme' emerged from the data which incorporated the *five sub-themes* above. This one over-arching theme was identified as '*learning to live with and manage CHD, recuperation from the event, learning to adapt to a changing lifestyle*'.

Step 5: 'BBC' framework: One over-arching theme: 'Learning to 'live with' and to manage CHD: recuperation from the cardiac event and learning to adapt to a changing lifestyle' (incorporating the five-sub themes above) (see appendix VII –semi-structured patient interview questionnaire and appendix XXIII – cardiac patient interview transcript).

The CRP consisted of a number of health promotion activities focused around reducing the individual's cardiac risk factors (smoking, diet, obesity, inactivity, high blood pressure, high cholesterol levels). The seven patients interviewed agreed that the CRP gave them direction and guidelines on '*how far they could push themselves physically*', particularly in relation to exercise performance.

"We were very surprised with the level of exercise that we were allowed to do. It was good to do the exercises on a gradual basis, building on them each week. It

wasn't easy at first but you got a good feeling afterwards mentally; you feel more energetic, the exercises gave you confidence and we knew that they were practised them in a safe environment under staff supervision. The exercises were varied enough with 15 different ones done at 2-minute intervals so weren't bored. We learned how to continue them at home in our own time and at our own pace."

All the patient participants on the CRP had, to a greater or lesser extent, begun to engage with lifestyle change e.g. change in diet. For instance:

"We are more conscious of eating healthier foods. We have changed to drinking more semi-skimmed milk as we used to drink full fat milk. We try to avoid fatty foods and grill more foods now, as opposed to frying it. We eat more vegetables and fruit now than before our heart disease and try to eat fish once a week now, even though it's expensive, but we know it's healthy. We keep a close eye on our cholesterol levels now, whereas before it didn't cross our minds that much."

Patients with a CABG notice a dramatic change in the need for angina medication, as most notice a sudden reduction in the quantity of drugs or the need to take none at all as the surgery tends to be 'curative' for up to ten years or more in some people. In the short term (6 weeks), the patient in the immediate post-operative period may complain of fatigue, tiredness, chest pain and numbness from the incision, sleep problems and wound drainage which may adversely affect their QOL (Miller and Grindel 2004). In the longer term, as the early postoperative symptoms disappear, CABG surgery enhances the patient's QOL physically and mentally (Miller and Grindel 2004). It is regarded as an effective invasive re-perfusion therapy in which it relieves patients of intermittent or constant chest pain and breathlessness related to angina at rest and/or exercise and decreases their risk of long-term mortality (Miller and Grindel 2004).

However, patients with a cardiac event, especially MI and PCIs, are prescribed a necessary 'cocktail' of medication regimes to either stop, delay or prevent the re-occurrence of further cardiac events. This situation is consistent with NICE (2007) guidelines and medical practice based in the hospital or community. Accordingly, the majority of patients were on a steep learning curve with regard to medicine management in relation to acquisition of basic knowledge about mechanisms of drug action, dosage, frequency of intake and basic side effects. Knowledge and learning about heart medication derived from a number of sources. This included health professionals (coronary care units, CRP, hospital physicians and GPs), patient booklets originating from the British Heart Foundation (BHF) and, finally, drug information leaflets from pharmacies. Three out of the seven patients in the sample used the internet as a source of medication knowledge. Patients generally requested information about their heart disease, drugs and disease prevention in a clear jargon-free language delivered in a staged fashion, with re-enforcement and re-iteration from time to time by health professionals.

This is what the patient participants diagnosed with heart attacks and PCIs said about medicines:

"We are on a lot of medication now since our heart attack and PCIs. We take about eight different tablets or so a day, which we are told, by the consultant, that we have to take them for life. We know their names (tablets) and what they do, which we have learnt from doctors and nurses when they use simple language to explain things. Aspirin is a blood thinner; Simvastatin – a drug that lowers cholesterol – this one can give you muscle cramps; Metoprolol – a beta-blocker to slow the pulse; Ramipril – an ACE inhibitor – I am not sure what ACE stands for but I know it's a tablet that helps to prevent high blood pressure but it can give you a an annoying cough."

The majority of patient interviewees (four) thought positively about the stress and relaxation schedule on the CRP. They said:

"It enables you to slow down and relax and it gives you a good feeling. I even bought my own relaxation tape (sea shore, lapping music) which I use at home which helps me to learn to relax, although I sometimes find it hard."

Three patients found the relaxation useful for 'cooling down' after the exercise regimes but it had no effect on them in terms of inducing feelings of relaxation. All patients wanted the relaxation sessions to continue but more time was required to be devoted to them instead of the allocated 10 – 15 minutes towards the end of the exercise schedules.

All the seven patients interviewed perceived that the CRP was beneficial and worthwhile, with a strong, clear and positive impact on their QOL. The following is a summary of the patients' views and perceptions of the CRP:

"We have nothing but praise for this programme. It was important for us to be part of it. It gave us knowledge of what we could and couldn't do. The CRP had a very positive impact on our QOL. It gave us confidence in ourselves. We learnt a lot about medication, diet, health promotion, and exercise. We were surprised with how much exercise we could do, especially after a heart attack, but now we know we need to get those joints and muscles moving and to get the heart pumping. Socially the programme was good fun and enjoyable and we have made some friends. We also discovered that we weren't suffering alone. Nothing was too much trouble as staff said, 'if anything troubles you, just pick up the phone and ring us anytime.' We know for a fact that our QOL would have been worse off without this programme."

Five out of the seven patients were content and more than satisfied with the structure and timing of the programme and could not think of further improvements, as they said:

“This is a well-structured and excellent course where we have learnt a lot and we enjoyed it as it guides and advises us and we would be lost without it. We would highly recommend this programme to any patient to help them live with their heart disease.”

Two of the patients advised extension of the programme to nine weeks instead of the present six, but they were aware that that very much depended on human and material resources which the trust did not possess. They perceptively advocated more staff concentration on managing stress and relaxation where more time and focus should be devoted to teaching patients how to systematically relax over time, with perhaps the inclusion of a specialist stress advisor to thoroughly address the issue.

In summary, this section has attempted to answer the fourth and final research question guiding this study about the perceptions and meanings that cardiac patients attach to the bio-psycho-social aspects of a CRP on their QOL. They unanimously agreed that the programme was strongly positive, beneficial and effectual and where much learning took place from the CHCPs in learning how to manage their heart disease from physical, psychological and social perspectives.

In the next section of this chapter, it is useful to begin the process of synthesis or triangulation of the data from both the qualitative and quantitative domains of the study. Data derived from answering the four guiding research questions will be integrated in an attempt to create a coherent picture or conceptual framework in relation to the impact that the CRP had on the QOL of older cardiac patients.

SECTION D: DISCUSSION OF THE RESEARCH FINDINGS (ALL FOUR RESEARCH QUESTIONS): CONTRIBUTIONS TO NEW KNOWLEDGE

In the final section of this chapter, discussion of the research findings, generated from answering all four research questions, will be located within the existing body of cardiology and QOL literature, using critical realism as the theoretical basis of the study.

Secondly, the purpose of this section is to introduce the last two phases of Morse's and Field's (2002) framework for thematic analysis by way of *theorizing* and *re-contextualizing* the empirical data. The first two phases (*comprehending and synthesizing data*) of their framework has been addressed in the above chapter (see p.157). The process of theorizing the empirical data included the use of methodological triangulation. This process resulted in the construction of a new conceptual model entitled '*The Ripple Impact Model of QOL for older cardiac patients with CHD' (MI/CABG/PCI)*. This work has contributed to the generation of new knowledge within the theoretical field of cardiac rehabilitation practice. Finally, re-contextualizing of the data took place

using Morse and Field's (2002) framework, which involved quality checks of the data, which included discussions of credibility, dependability, and transferability of findings to other populations and settings (Morse and Field 2002).

Methodological triangulation of the '*between-method*' variant has been used in this mixed methods study in order to synthesize the different types of data (Polit and Beck 2008). Both concepts are defined as the integration of different methods of data collection converging on the same subject of phenomenon (Denzin 1989). Methodological triangulation in relation to this study occurred by the use of a three-fold approach designed to '*pull together*' the research findings or results of the study. These included: (i) use of the research questions; (ii) triangulation or integrative themes; and (iii) the development of a new conceptual QOL framework for the older patients with CHD (MI/CABG/PCI) (see appendix IV).

Theorizing and triangulating the qualitative and quantitative data: CHCPs and patient participants

The third phase of Morse and Field's (2002) framework incorporates the interrogation of the data for explanations and possible counter-explanations directly and indirectly related to the subject material. This involves the systematic selection and the fitting of alternative models to the data by '*speculation, conjecture, falsification and verification*' (Morse and Field 2002, p.106). The phase is about discovering the '*insignificance of the significant and the significance of the significant*'. It is an active cognitive process of discovering the obvious and explicit to the latent and implicit knowledge buried in the data '*to form a coherent, comprehensive theoretical framework or simple model*' (Morse and Field 2002, p.106). This phase is about the use of inductive and deductive reasoning powers used for the purposes of theory-building as it emerges from the data through an active intellectual process on behalf of the researcher.

The combination of all three cognitive processes of *comprehending, synthesizing and theorizing* phases the data occurred (Morse and Field 2002). Triangulation of quantitative and qualitative data derived from the cardiac research study occurred in this phase. Quantitative and qualitative data has been generated from the study's four main sources in relation to addressing the study's research questions. The four sources are:

(a) *Quantitative data (on patients physical impact of a CRP on older patient's QOL);*

(b) *Qualitative data (from CHCPs' perceptions of the impact of CRP on patient's QOL);*

(c) *Qualitative data (on the patient's definitions of QOL on a CRP); and, finally,*

(d) *Qualitative data (on patient perceptions, meanings and experiences of the bio-psycho-social-spiritual impact of the CRP on their QOL.*

At this point, the data has grown, developed and matured from prior inter-connecting concepts, items, categories, sub-themes and themes and to form a coherent conceptual framework.

The broader level of thematic analysis in the context of this study referred to two issues:

- Firstly, **(i)** the process of identification of overlapping staff and patient themes followed by cross-referencing to identify triangulation or integrative themes.

Secondly, **(ii)** the development of a new conceptual framework for the older cardiac patient's QOL. There were respectively as follows:

CARDIAC HEALTH CARE PROFESSIONAL (CHCPs) SUB-THEMES AND THEMES

- *Meaning and definitions of QOL: domains of physical, psychological, social and spiritual health.*
- *Learning to 'live with' and to manage CHD from physical and psycho-social perspectives and patient adaptations to a changing lifestyle.*

Impact of ageing or 'becoming older' on QOL.

CARDIAC PATIENT SUB-THEMES AND THEMES

- *Older cardiac patients' definitions of QOL on a CRP: domains of physical, psychological, social and spiritual health.*
- *Learning to 'live with' and to manage CHD: recuperation from the cardiac event, learning to adapt to a changing lifestyle and its impact on QOL.*

FIVE OVER-ARCHING TRIANGULATION or INTEGRATIVE SUB-THEMES AND THEMES:

The combination of the CHCP and the cardiac patient themes generated the five key triangulation or integrative sub-themes and themes, identified as follows:

1. *Definitions, meanings and structural elements of QOL, professional-patient holistic perspectives of QOL and the acute management of CHD.*
2. *QOL – domain of physical health, objective and subjective impact of CRP on QOL, activities of living (ADLs) – independence, autonomy and exercise.*
3. *QOL – domain of ‘becoming older’ and adaptation to a changing lifestyle, patient empowerment, choice and learning.*
4. *QOL – domain of psycho-social health, coping mechanisms (stoicism) and QOL as a temporal construct.*
5. *QOL – domain of leading a spiritual/religious/moral life.*

Each of the above triangulation or integrative sub-themes and themes are discussed in turn with reference to the relevant body of literature as follows:

1. *Definitions, meanings and structural elements of QOL, professional-patient holistic perspectives and the acute management of CHD.*

CHCPs and patients defined and perceived QOL from a ‘multi-structural’ perspective consisting of interactions between physical, psychological, social and spiritual structures. This multi-faceted definition of the concept remains consistent with the picture reflected in the existing literature, although only a few authors acknowledge the importance and relevance of spiritual structures in connection with health/illness and QOL (Bowling 2001; Garratt et al. 2002; Armstrong et al. 2007; Fayers and Machin 2007).

Both groups in the study, either implicitly or explicitly stressed, respectively, that the definition of ‘QOL *belonged to the patient*’, that it existed in the ‘*eye of the beholder*’. They agreed with the literature that the concept should be ‘*owned and defined by the patient or person*’ (O’Boyle et al. 1995; Fayers and Machin 2007). Patients and staff recognized that QOL was a highly subjective concept and that it was personal and individualistic and related to their culture, upbringing, social conditioning, individual personality and psychological well-being (O’Boyle et al. 1995; Fayers and Machin 2007).

Similarly, staff and patients provided a wider definition of QOL than the existing literature where the latter tended to focus on the narrower concept of health or disease often termed ‘Health-Related Quality of Life’ (HR-QOL) (Puts et al. 2007). A large randomized controlled trial with older

patients (mean age = 63 years, n = 1,331) with a chronic metabolic bone disorder (*Paget's disease*) was performed recently (Fayers et al. 2007; Robertson et al. 2009). Their findings suggested that when 21 patients (mixed gender) were extracted from the trial sample for interview as to how they evaluated self-reported HR-QOL (they had previously completed these QOL instruments in the trial), half of the patients in the sample had difficulty with interpretations of the meaning of HR-QOL (Fayers et al. 2007; Robertson et al. 2009). Patients were also unclear about how to discriminate or disentangle HR-QOL from the general/global or the wider aspects of QOL (Fayers et al. 2007; Robertson et al. 2009). These findings had similar implications for cardiac patient definitions in this research study where they perceived that QOL '*contained more components than just a health-related domain*'. Besides, the importance of physical health or functional status in terms of '*patients being reasonably able to independently or autonomously perform activities of living*', cardiac patients (and CHCPs) in this study attached equal importance to the non-medical aspects of QOL. This included the emotional well-being and satisfaction gained from effective social functioning and the formation of healthy family relationships e.g. '*good/satisfactory spouse/partner/family relationships*' (Bowling 2001; Garratt et al. 2002; Fayers et al. 2007; Robertson et al. 2009).

Other components of QOL for cardiac patients, which overlapped with the domain of 'social health', included a safe and respectable neighbourhood in which to live and the possession of some financial security and, if possible, owning a car – in the words of one of the cardiac patients, '*It gives you a bit of independence and freedom to get around.*' QOL also meant striving for a contented retirement and the freedom and choices that it brought in terms of their grand-parenting roles if appropriate and for others, spending quality time with their spouse and/or pursuing leisure and hobbies (Walker and Hennessy 2004; Bond and Corner 2004).

Some differences in perspectives of definitions of QOL emerged with the different roles played by the different CHCPs involved in the CRP. Within the spirit of Foucault's (1973) medical /clinical gaze, the medical staff, though not exclusively, tended to emphasize the physical and functional aspects of the cardiac patient's QOL. The 'gaze' was couched in terms of their medical focus on the physical body vis-à-vis signs and symptoms of CHD, pharmacological management of the patient's condition, pain control, breathlessness and managing cardiac-related oedema (Armstrong et al. 2007). The nurses and physiotherapists in the study acknowledged the importance of functional status as long it was located within a '*holistic (bio-psycho-social-spiritual) model of patient care*'. This approach acknowledges a whole-person orientation rather than a medical reductionist perspective that often emphasizes their bias towards physical disease, disorder and pathology (Nettleton 2006).

Those patients with an MI condition (STEMI and NSTEMI) were prone to experience a poorer QOL than those with a CABG and/or PCI. The former situation was related to a poorer physical outcome associated with MI complications with the experience of symptoms like *'fatigue and tiredness, feeling drained, chest pain related to angina, breathlessness and cardiac oedema'*. Whereas, in this cardiac research study, CABG and PCIs tended to alleviate or abolish the patient's symptoms so that the patients *'felt cured, physically good, with little or no physical symptoms'*. These reperfusion therapies (CABG/PCI) significantly enhance the appropriate cardiac patient's physical health with little or no chest pain, increased ability to perform regular exercises, reductions in anxiety and depression and improvements in their overall QOL (Miller and Grindel 2004; Rothenhausler et al. 2005). These benefits are further evidenced in the literature in the form of longitudinal studies, which suggests that a CABG improves the patient's QOL and diminishes morbidity for the majority of cardiac patients who undergo this type of surgery (Rumsfeld et al. 2004).

2. QOL – domain of physical health, objective and subjective impact of CRP on QOL (activities of living (ADLs) – independence, autonomy and regular aerobic exercise)

The quantitative physiological parameters in relation to this study for the thirty-five patients in the larger sample seemed to indicate a positive physical impact of the CRP on the patient's QOL. This was evidenced by statistical significant differences in such physiological variables as lowered systolic blood pressure (SBP), lowered diastolic blood pressure (DBP), lowered heart rate (HR) and increased exercise tolerance in terms of graduated aerobic exercise levels. Tipton et al. (2006) describe the physiological mechanisms of an efficient left ventricular myocardium operating with increased heart muscle bulk related to increased aerobic exercise. These mechanisms, in turn, produce a lowered cardiac output which ultimately produces the outcomes of lowered systolic and diastolic blood pressures (Tipton et al. 2006). A similar picture emerged with the seven patient interviewees as their physiological variables of HR and DBP were reduced by similar physiological mechanisms described above with an increase in aerobic exercise levels (Tipton et al. 2006). A cautionary tale needs to be expressed with the interpretation of the physiological data, as anti-hypertensive and beta-blockade medication may act as contaminating mechanisms in reducing the patient's blood pressure and heart rate (NICE 2007; BNF 2010).

In a synergistic fashion, the patients' and CHCPs' subjective accounts from the interviews matched the objective indices in terms of the physical impact of the CRP on the patient's QOL. Patients and staff stipulated the physical benefits of the CRP, where patients were able to perform a sustained and often a strenuous exercise programme. Patients stated that they:

"Felt better on the programme, that their mobility, gait and walking was much better and that they could perform their physical activities and activities of living e.g. shopping, moving, walking and hobbies more freely than before entry to the CRP".

The CHCPs were equally positive about the patient's physical well-being. As one Senior Nurse stated:

"Do you know, he/she has done really well on this programme and, for example, Jo /Tom/Majina and others support me when they say they are feeling physically better and fitter than before they came (to the CRP)."

Both the objective and subjective indices and mechanisms of overall improvements in the physical, psycho-social and vocational/retirement aspects of the patient's QOL is congruent with the literature with respects to the goals of CRP. As Wenger puts it:

"The goal of a multi-disciplinary comprehensive CRP is to limit adverse physiological and psychological effects of cardiac illness, to reduce the risk of sudden death or re-infarction, to control cardiac symptoms, to stabilize or reverse the atherosclerotic pathological process, and to enhance the patient's psycho-social and vocational status."
(Wenger 2008, p.1619)

This movement is a relatively recent shift of emphasis of QOL from the professional to the patient's perspective where the patient's views, opinions, 'voices and choices' of how medical, health care interventions and treatment regimes impact on their QOL (Doward et al. 2010). In terms of a more patient-centered perspective or approach to QOL, the relatively new broad umbrella concept of '*patient-reported outcomes (PROs)*' embraces the notion of QOL (*inter alia*, e.g. *symptoms, functioning and health status*) that is reported directly from the patient without interpretation by clinicians (Doward et al. 2010; Darzi 2008; Fayers and Machin 2007). This health and social policy movement, refreshingly, is becoming increasingly important in the modern health care environment, particularly with the advent of complex chronic diseases such as CHD where there is, as yet, no sign of a medical cure(s) (Doward et al. 2010). In this context, medical recourse and direction is channelled towards disease management and secondary prevention in partnership with educated patient input and empowerment analogous to the concept of the 'expert patient' (DH 2001; Darzi Report 2008).

In this study, relative physical and psycho-social independence and autonomy were perceived by both patients and staff alike as occupying a central notion in experiencing a good QOL. Relative independence and autonomy in this context was defined as 'not' the possession of 'near perfect' physical and mental prowess that might belong to a younger person, but, more so possessing

age-related 'reasonable' physical and cognitive ability to perform their activities of living (ADLs) in order to meet their holistic needs for the purposes of survival. The cardiac patients in the study, without exception, seemed to have a tacit and/or an expressed fear of:

"Ending up being dependent on someone or some person, be it family or health professional or being placed in some hospital or nursing home and worse still – left to fade away, forgotten and alone".

This scenario of potential loss of physical and psycho-social independence with ensuing loss of individuality and the possible threats of institutionalization and loneliness was perceived to hold a devastating effect on a person's QOL, particularly from the patient's perspective (Perrig-Chiello et al. 2006). Indeed, this negative situation equally applied to the health professional's perception of QOL if they were to lose their own independence and autonomy through disease and illness. Maintaining functional autonomy and independence is viewed as a prized possession in terms of individual locus of control and self-determination over one's life events. This ranges from the 'micro-individual level' to the 'macro-socio-political arena' in the process of successful ageing and the possession of a good QOL (Perrig-Chiello et al. 2006). This picture should be seen against the backcloth of modern demographic changes in the population structure. In the modern era, people live much longer, where there are more older in the population than ever before, where chronic disease is becoming the norm and where physical and psycho-social dependence tends to exponentially increase with age (Perrig-Chiello et al. 2006).

Wray (2004) analysed the concept of empowerment in older women in her study consisting of a sample of 170 British women from different ethnic backgrounds who had an age range of 60 – 80 years. In her discussion on empowerment, she invited the contextually-based and the relational notions of independence and autonomy into the academic debate. Similarly, the older male and female patients in this cardiac study '*perceived independence and autonomy as the possession of valuable assets*', which may be likened to the metaphor of '*delicately made expensive fine china*' prone to fragmentation by age-related disease processes such as CHD. Both notions were considered important constituent elements that contributed positively to and augmented the quality of life of these patients. In the UK and worldwide, central governments and health departments clearly have a keen and vested interest in preserving and maintaining people's autonomy and independence for as long as possible, particularly from a cost-effective perspective as the world health care systems face tough economic times for the foreseeable future (DOH – Healthy Lives, Healthy People 2010).

3. QOL – domain of ‘becoming older’ and adaptation to a changing lifestyle, patient empowerment, choice and learning

The concept of ‘expert patient’, or ‘patient empowerment programmes’, defined as lay-led self-management programmes of six-week duration led by lay tutors for people living with long-term conditions, has arisen due to a changing demographic picture in the UK with the growing and increasing number of older people in the population (DH 2001). In a parallel fashion, the epidemiological landscape of disease is changing rapidly from acute to chronic conditions related to people leading a better global QOL influenced by better living conditions, better technological, scientific and medical care and, finally, better socio-economic conditions compared to the historical past (DH 2009). The current tendency in health care provision is to give the patient more choice and decision-making in their own chronic disease management, with access to health care structures, processes and information systems (DH 2009; Healthy Lives, Healthy People 2010; NHS Outcomes Framework 2010). However, it remains unclear as to whether these patient ‘empowerment (expert)’ patient programmes, evidenced by robust controlled clinical trials, will reduce the use of health care resources, deliver cost-effectiveness, improve patient’s satisfaction with NHS health care and, most importantly, enhance the patient’s QOL in the long term (Griffiths et al. 2007).

Learning to adapt to a changing more-healthy lifestyle and QOL took time, energy and effort on behalf of the respective patients who suffered from a cardiac event who were enrolled on the CRP based in the hospital and the community. Patients referred to the fact that they were engaged in *‘changing their dietary habits to healthier choices of dietary habits e.g. use of semi-skimmed milk, less saturated animal fat intake, more intakes of fish, fruit and vegetables’*. They were observing and controlling their weight and participated in a variety of exercise regimes learnt from the CRP or related to their hobbies, although, at times, they admitted these tasks were *‘not always easy in terms of motivation but once done they were really worth it in terms of feeling good both mentally and physically’*. They had gained knowledge of their medication regimes and knew the common side effects of drugs e.g. cholesterol-lowering drugs. They had stopped smoking, with the exception of one patient (*‘Tom’*) who had considerably reduced his pipe tobacco intake, which was related to the anxiety created by the cardiac event and the health promotional advice delivered by health professionals. Four of the patients admitted verbally to staff about feeling anxious (*‘not knowing what to expect’*) and lacking in confidence (*‘related to their cardiac event’*) before the start of the CRP. However, the same patients admitted that once the CRP was completed *‘they were more confident, were less anxious about their condition and armed with sufficient knowledge to manage their CHD for the future’*.

In this cardiac study, the process of learning, in terms of the acquisition of knowledge to adapt to a healthier behavioural lifestyle change, was a two-way teaching/learning interactive process that existed between the CHCPs and the patients. The multi-disciplinary team, with the cardiac patient as the focal point, involved many different streams of health promotion interactions by various means in different geographical settings. For example, these settings included clinics, out-patient appointments, invasive interventions (surgery, angioplasty), verbal/written communication systems, family discussions and the use community health care facilities and resources. The purpose of health promotion and disease prevention, as an embedded component of this CRP, was designed to assist and to empower the patient to focus on their individual cardiac risk factors (e.g. high blood pressure, smoking, high cholesterol, lack of exercise, obesity, and so forth) to enable them to make healthy choices and decisions about changing their lifestyle as a result of CHD.

It should be noted for some that 'patient empowerment' is regarded as an idealistic notion which has limitations (Patterson 2001; Nyatanga and Dann 2002). A power differential exists between the health professional and the patient in terms of hierarchical professional status and power, the level and extent of medical knowledge and the use of esoteric technical language to describe and analysed disease (Patterson 2001; Nyatanga and Dann 2002). This is where unequal power relations between both parties in what might be referred to as 'professional dominance and lay subservience' (Patterson 2001). Additionally, Patterson (*op. cit.*) suggested that patient empowerment is a 'buzz-word' where the concept is a myth in chronic disease management; where patient's experiential knowledge in his study was discounted by health professionals in chronic disease management; and, finally, where insufficient resources (time, information, money) were not provided to patients to make informed decisions (Patterson 2001).

There is evidence of 'ageism' and discriminatory practices towards older people at the wider societal level and within the health care system (Bowling 1999; O'Neill 2009; Kmietowicz 2009). This is evidenced by the unjustified exclusion of older patients in clinical trials on the tentative grounds of frailty, being on the receiving end of second-rate health care and where older cardiac patients do not receive the appropriate medication regimes based on current evidence-based medical practice (Bowling 1999; Orme 2000; Davies and Jheeta 2001). In these contexts, it might be argued that older people are perceived in a negative way, with negative attitudes held about their value and social worth, where, for instance, they have lost their social usefulness and roles cocooned by a 'disempowering model' (*decrement model*) that depicts human decay, decline and dependence (Gross 2010).

Despite this stereotypical ageist view of older people in society at large, the alternative perspective of the '*personal growth model*' reflects older people as having social value, who are citizens that possess wisdom, learning and experience who have much to offer and share in society (Gross 2010). This could be coined as an 'empowering perspective' that sees the older as a heterogeneous group who possess a range of diverse skills, abilities, attributes and knowledge waiting to be tapped, shared and bestowed on others (Johnson et al. 2005). This 'empowering perspective' was clearly evident with the small group of older cardiac patients (n = 7) that were selected for interview in this research study. In this study, the '*personal growth model*', to a greater extent, matched the concept of '*becoming older*' in the cardiac patient's life cycle. For this well-motivated group of patients, ageing, or 'becoming older', was perceived as an enabling or an empowering concept associated with a positive outlook and attitude which was exemplified by Kes, one of the cardiac patients, who said:

"Age is just a number; it mostly depends on your mental outlook, your attitude and how you see things; it gives you time, freedom and choice to do what you want to when you are retired. I might be 82 years old but up here (head) but I feel 35 as long as I can keep my independence."

4. QOL – domain of psycho-social health, coping mechanisms, and QOL as a temporal and generation-specific construct

Any cardiac event, particularly an MI and heart surgery, can induce a range of psycho-social problems, such as high patient anxiety, apprehension, fear of impending death and/or fear of the unknown, loss of control and/or depression or social withdrawal (Stephoe and Whitehead 2005). Patients with an MI in this research study spoke about their:

"Psychological shock when I got the heart attack; for a while I thought I was going to die, it was really frightening".

Those patients in this study who were preparing for heart surgery (CABG) pointed out:

"They were anxious and/or low in mood and pondered if they would survive such major surgery with the risk of many potential complications."

This psychological phenomenon is consistent with the literature which testifies to moderate to high patient anxiety levels and episodes of depression in the early pre- and post-cardiac operative period in some cardiac patients (Cheok et al. 2003). Patients with an MI/PCI can also suffer similar psychological morbidity (Thow 2009). Subsequently, these symptoms tend to

diminish over time with a concomitant enhancement of the patient's QOL with the assistance of health care stress management regimes and family supportive structures and mechanisms (Cheok et al. 2003; Thow 2009).

These literature findings were reflected in this cardiac study as, after patient exposure to health care interventions (e.g. staff advice and information, stress management, family support), patients learned to relax, became less anxious and gained a greater sense of control over their cardiac event (Yohannes et al. 2010). The CRP augmented the patient's sense of psychological well-being when they became more confident with enhanced self-esteem as they progressed through the various components of the programme, which included relaxation schedules. Most patients in the study mentioned that they '*enjoyed this regime where it helped them to relax which was followed up at home by self-purchase of a relaxation tape or CD*'. One of the goals of CRP is to enhance the patient's psycho-social aspects of their QOL, which was evident in this programme (Thow 2009). From an holistic perspective, the spirituality/religion domain of QOL must not be overlooked, as this is linked, directly or indirectly, to the psychology of human coping mechanisms (Koenig et al. 2004).

All health professionals except the medical staff perceived the temporal aspects of QOL where the concept was linked to a specific generation. Nurses and physiotherapists called this sample of patients:

"The post-war babies' where their QOL were shaped by Victorian values and customs with relatively strict rearing by generally a nuclear family, where they faced adversity such as illness with grit and determination, the stereotypical stoical-stiff-upper-lip phenomenon and getting on with the business of living".

King et al. (2002) refer to diabetic complications of renal disease in their phenomenological study on a sample of 22 patients (age range 36 – 69 years, mean age = 49 years) where stoicism was linked to the process of 'good adaptation', which was evidently used as a major coping strategy in both older and younger patients. Coping, in this context, was defined as the conscious or subconscious use of a repertoire of emotional and cognitive processes, human actions, outlooks and behaviours in learning to live and deal with diabetic renal disease with its inherent uncertainty related to its chronic progressive nature with the passage of time (King et al. 2002).

CHD is also progressive and chronic in nature with an uncertain prognosis, and the sample of patients (n = 7) in this study (mean age = 69 years) displayed clear stoical and fatalistic attitudes similar to King et al.'s (*op.cit*) work. In King's study, patients did not appear to use the alternative psychological coping strategy of self-confession or self-disclosure in learning to manage their chronic illness. Similar to this cardiac study, possible reasons for the use of 'stoical' coping

mechanisms and a fatalistic attitude may be related to sample characteristics such as social class and geographical area. King et al's (*op.cit.*) study was performed in northern England, where patients originated from working and lower middle class backgrounds (similar to the researcher's study), whose coping mechanisms might differ to a well-educated upper middle class sample perhaps based in a city cosmopolitan area in the UK (King et al. 2002).

It is commonly accepted that the concept of life satisfaction is related to the notion of QOL, although the nature of this relationship between the two concepts remains complex and unclear (Rapley 2002). Hagerty's (2002, p.115) work is one of the few studies that links people's life satisfaction to notions of time or temporality by posing the questions:

"How satisfied are you with your life these days compared to five years ago or was life better in the 'good old days'?"

Hagerty (*op.cit.*) defines temporality in terms of:

"Inter-temporal judgments' which are paired comparisons between the present time and some time ago".

"The majority of people's survey reports indicated that they were 'happier now than in the past.'" However, when people were asked about the "quality of life of the 'average' person, the majority stated that they were happier in the past." (Hagerty 2002, p.115)

Accordingly, a somewhat paradoxical situation arises where the status quo is that the majority of people are satisfied with life in the 'here and now' but they were happier with their QOL in the past (Hagerty 2002). A possible explanation for the existence of this paradox may relate to people's feelings of life satisfaction or happiness existing as an inner unstable fleeting emotional or mental concept at specific moments in time (Hagerty 2002). When this situation is set against comparisons to the arguably more stable and broader notion of QOL with the benefits of the passage of time as a reference standard, consequently, QOL may become more of a stable constant concept which is judged with the benefits of the processes of reflection, experience and retrospection (Hagerty 2002). Another possible explanation for the apparent paradox might be the role of memory and the forgetting process which enables the person to recall only the good things in life (not the advertent or inadvertent recollection of negative life events) from the past which may bias the person's responses towards reporting positive events that create a happier QOL (Hagerty 2002).

It seemed apparent in this cardiac study that patients were happier with their QOL in the past than the present, which echoed Hagerty's (*op.cit.*) views, although, in reality, the concept of 'life

satisfaction' was not directly explored with the patients in this study. All patients, except the Asian lady, in the sample mentioned that:

"We wouldn't swop our lives for anything. Life had it hardships with its ups and downs in the past, especially in the post war years with food rationing. There was plenty of work, plenty to do, we were always outdoors playing some sport. We hadn't much material possessions but we were happier than people in this present generation who seem to have all the 'mod cons' - but are they happier - I wonder? There seems to be more 'violence and drugs' nowadays and more family breakups compared to the past, although it might be that we hear about these things more often these days."

5. QOL - domain of leading a spiritual, religious, or moral life

The concept of spirituality and/or organized religious practice was important in different ways for all patients in this research work. However, patients and staff also recognized that for some other people, spirituality and religion might have little to no impact on their QOL even with the experience of illness. In this study, a subtle distinction was made between the notions of spirituality and organized religious practice despite the nature of these overlapping concepts and the thorny area of a consensus of clear definitions and distinctions between them (McFadden et al. 2003). Within the light of an holistic model of health care, Dyson et al. (1997) argue that to interpret spirituality and religion as being synonymous or coterminous concepts is to adopt a restrictive perspective which may impede or be unhelpful in the provision of individualized care.

Although it is difficult, if not impossible, to fully disentangle the concepts of spirituality and religion from each other, Dyson et al. (1997, p.1183) define spirituality as consisting of three closely related elements of '*self, others, and God*' with the encompassing themes of '*meaning, inner strength, hope and belief systems*'. Religion, on the other hand, according to Koenig et al. is:

"A social institution or an organized system in which a group of people participate rather than an individual search for meaning. Religion seems to be more concerned with systems of practice and beliefs within which a social group engage".
(Koenig et al. 2004, p.554)

In light of the inextricable entanglement of the two concepts, others argue that religion can provide a fulcrum for the expression of spirituality and meaning in life, which may be the case for some people and not for others depending on their unique subjective interpretations of both concepts set against their cultural backgrounds (Ridge et al. 2008).

This problem of a lack of consensus of definition of spirituality is partly related to the dichotomy that exists between scientific/technological advances and spirituality and religion, where the former relies on rational explanations to understand natural and social phenomena and in doing so tends to exclude 'God' from the equation (Dyson et al. 1997). This definitional problem leads to a clear lack of a theoretical framework in nursing and other health care professions to guide individualized care and practice. There is also implicit speculation as to who might provide such spiritual care: is it doctors, nurses, priests/vicars, chaplains or other appropriate ecumenical or non-ecumenical people, or should the role be inter-disciplinary and shared? (Dyson et al. 1997).

In the context of this cardiac study, the broader concept of spirituality, with similar tones to Dyson et al's (op.cit) definition, reflected the patient's possession of moral codes and customs whose purpose gave meaning to QOL belonging to five out of the seven cardiac patients in the sample. These principles of rectitude inherent in spirituality were linked to upbringing, culture and English Victorian values of moral living and:

"Being upright with people, having a strict upbringing, never doing people a 'bad turn' (wrong), providing hope and courage in the face of the uncertainty of disease and illness, especially a cardiac event such as a 'heart attack' or waiting for major heart surgery (CABG)".

This sense of patient morality evident in this cardiac study strikes similar notes to Aristotle's concept of 'eudaimonia' or 'happiness', synonymous with 'the good life' which was 'not' defined as the hedonistic pursuit of materialistic self-interest. Instead, the 'good life', for the classical philosophers, invited virtuous behavior, the possession of moral and ethical values practiced in an altruistic fashion in the quest for human justice and righteousness (Barnes 2004; Chekola 2006).

On the other hand, organized religious practice (practiced in public – Christian religion) or at home as a group (Muslim religion) or the practice of one's faith took on a deeper meaning for two of the cardiac patients in the study, one (*Kes*) of whom suffered with a NSTEMI and the other (*Majina*) with an NSTEMI and PCI with a stent implant. *Kes* (82 years) derived from an English Caucasian culture and *Majina* (69 years) originated from an Asian culture. For them, regular practice of their religion in public (Church of England) or privately at home (Muslim religion) was deemed important to their QOL. It provided them with:

"Solace and comfort, gave them a sense of direction to their lives and provided a means of distraction from cardiac illness in terms of ameliorating fear, uncertainty and anxiety".

It also gave them a sense of helping others in terms of a social support network (e.g. 'raising funds for charity and the church') and belonging to a tight-knit group of respective communities of

disciplined worshippers. Similarly, Koenig et al. (2004) suggest that religious beliefs helps patients to cope psychologically as they confront serious medical/heart disease as they seek to make lifestyle changes to conserve and promote their health. Practice of a person's religious faith assists him/her from becoming socially withdrawn and isolated by the promotion of companionship and social cohesion and acts as vehicle to promote relaxation and distraction from the disease/illness experience (Koenig et al. 2004).

In a cross-sectional survey of over 800 older medical hospitalized patients in the US (aged 50 years and older – mixed gender – one third of the sample suffered from heart and circulatory diseases), which utilised a series of quantitative measurements scales (religiosity, social support, depression, cognitive and physical status) and 1-hour qualitative interviews for assessment of patient-defined 'spirituality' as there is no widely accepted measure of spirituality (Koenig et al. 2004). The study findings revealed (regardless of whether these patients practised religion and/or used spiritual beliefs in the face of co-morbid serious medical disorders) a positive impact on the patient's implicit global QOL, though the concept itself was not directly or explicitly assessed in this study. This was evidenced by:

"Greater social support, better psychological health (i.e. less depressive symptoms and better cognitive function), and to some extent, better physical health in terms of performance of activities of living."
(Koenig et al. 2004, p.554)

A New Conceptual QOL Model - "The Ripple Impact Model (TRIM) of QOL for Older Patients with CHD' (MI/CABG/PCI)": New Contributions to Knowledge

The first two processes of methodological triangulation designed to synthesize the various sources of data derived from this mixed methods study for the purposes of '*pulling together*' the study's findings have been discussed. This discussion included (i) the use of the four research questions and (ii) the use of triangulation or integrative themes. The creation of the new conceptual model entitled '*The Ripple Impact Model (TRIM) of QOL for Older Cardiac Patient's QOL with CHD' (MI/CABG/PCI)*' (see appendix IV) represents the final phase (iii) of methodological triangulation in relation to this research study. In addition, the development of this conceptual model for older cardiac patients represents the development of new knowledge in the field of cardiac rehabilitation. Firstly, it is useful to point out the meaning of a conceptual model or framework.

Polit and Beck (2008, p.141) perceive that frameworks, models, conceptual schemes/maps and theories are overlapping terms '*partly because they are all interrelated, and partly because*

different researchers use the terms differently'. They use the term conceptual framework or conceptual model interchangeably as evident in their definition of a conceptual model:

"A set of interrelated concepts (or abstractions) assembled together in a rational scheme by virtue of their relevance to a common theme: sometimes called a conceptual framework."
(Polit and Beck 2008, p.141)

Polit and Beck (2008, p.141) go on to argue that the role of a conceptual model is to provide an *'understanding of the phenomena of interest and reflects the assumptions and philosophical views of the model's designer'*. Miles and Huberman provide support to the above authors with a relatively similar definition of a conceptual framework:

"A written or visual presentation that explains either graphically, or in narrative form, the main things to be studied – the key factors, concepts or variables – and the presumed relationship among them. Frameworks can be rudimentary or elaborate, theory-driven or commonsensical, descriptive or causal."
(Miles and Huberman 1994, p.18)

The creation and development of the conceptual model *'The Ripple Impact QOL Model'* (TRIM) reflects the fluidity and the inter-connecting nature of the mechanisms, structures and contexts attached to CRP and how it impacted on the older cardiac patient's QOL (see appendix IV). QOL is perceived by patients and health professionals as a valued and important outcome in cardiac care as it provides a milieu or channel to hear the *'patient's voice'* in terms of a patient-reported outcome about how chronic illness, treatments or interventions delivered by multi-disciplinary health professionals impacts upon the whole arena of the cardiac patient's QOL (Fayers and Machin 2009; Yohannes et al. 2010).

Using the metaphor of a *'still and deep pond of spring water on a sunny day'* where, if a person drops a small pebble from about two feet in height, one can see the *'rippling effect'* of the water in a series of meandering, overlapping, concentric circles. This scenario is analogous to the multi-faceted and complex nature of QOL in relation to bio-psycho-social-spiritual structures and mechanisms that form the basis of the model where they reflect inter-dependence as one structure and mechanism of life impacts on the other. This picture can be equally compared to the physiological systems of the human organism where each system inter-plays upon the next, where one relies upon the other, where they combine to form a *'complex-simplicity'* of beauty in health (Marieb 2009). In the diagrammatical representation of this QOL model, the circular flow of *'blue'* arrows around the concentric circles reinforces the interactions and fluidity that exists between the different life structures or domains, mechanisms, contexts and outcomes in how older patients with CHD experienced QOL on this CRP (see appendix IV).

The model reflects the end-product of triangulation or integration of the quantitative and qualitative research data in this research mixed methods study guided by the formation of the four research questions generated at the outset of the study and the philosophical theory of critical realism. More specifically, the model reflects the key structures, mechanisms, contexts and outcomes of this research study in relation to previous discussions of the over-arching triangulation or integrative sub-themes or themes below:

1. *Definitions, meanings and structural elements of QOL (professional-patient holistic perspectives and the clinical management of CHD).*
2. *QOL – domain of physical health, objective and subjective impact of CRP on QOL (activities of living (ADLs) – independence, autonomy and exercise).*
3. *QOL – domain of ‘becoming older’ and learning to adapt to a changing lifestyle (patient empowerment and choice).*
4. *QOL – domain of psycho-social health, coping mechanisms (stoicism) and QOL as a temporal construct.*
5. *QOL – domain of leading a spiritual/religious/moral life.*

In relation to this context, the model reflects the generation of new knowledge and insights that provides a deeper theoretical and practical understanding of the QOL of older cardiac patients on CRPs. Contributions to advancing knowledge and practice as a result of this in-depth mixed methods study on QOL within the cardiac rehabilitation field are evident in the model in the following ways:

- An eclectic and wide perspective of the definitions of QOL has been delivered ‘*through the eyes*’ of both the cardiac health care professionals (CHCPs) and the cardiac patients with an MI/CABG/P.
- The definition of QOL of an older cardiac patient is complex, unique and individualistic – it ‘*rests in the eye of the beholder*’, but it is closely connected to the concepts of independence and autonomy from a bio-psycho-social-spiritual viewpoint.

- Older cardiac patients and CHCPs defined QOL from a broader perspective than health. Both parties do not separate the importance of '*being in reasonable health*' from other equally important notions such as culture, psycho-social well-being, religion/spirituality structures, socio-economic structures and mechanisms.
- QOL with older cardiac patients appears to be related to temporality and time vis-à-vis connections to a specific generation and epochs e.g. '*The post war generation of patients in this study.*'
- Older cardiac patients tend to use stoical and fatalistic coping mechanisms and social support structures as they recuperate from their cardiac event.
- Older cardiac patients on a CRP value choices, participation and involvement in an empowerment model of chronic disease management.
- The retirement phase in life, with its provision of freedom and choice and the pursuit of hobbies, living in a decent and safe neighbourhood with appropriate financial security, is valued by older cardiac patients as it impacts positively on their QOL.
- Close family relationships and grand-parenting roles are viewed by older cardiac patients as important notions that impact positively on their QOL.
- Lifestyle change with CHD represents a process of learning, adaptation, and adjustment, where teaching and learning is an interactive dynamic process of informed choice of 'taking on board' health advice exchanged between respective patients and CHCPs within diverse health care contexts.

In summary, qualitative and quantitative data originating from both cardiac professionals and cardiac patients has been triangulated at the point of conceptual synthesis of a QOL model entitled '*The Ripple Impact Model of QOL (TRIM) for Older Patients with CHD (MI/CABG/PCI)*'. Identified areas where the model offers contributions to new knowledge in the field of cardiac rehabilitation have been demarcated in the above discussion. In the subsequent final chapter, it is useful to evaluate the research design and methods using the criteria of credibility, dependability and transferability within the final phase of Morse and Field's (2002) framework under the rubric of '*recontextualisation*'.

CHAPTER 7: CONCLUSIONS, REFLECTIONS AND RECOMMENDATIONS

Introduction

This final chapter will discuss the quality assurance criteria of credibility, dependability, and transferability associated with this research study. This involves the process of '*re-contextualization*' – the fourth and final phase of Morse's and Field's (2002) framework. The process of researcher reflexivity will be considered and the limitations of the study will be addressed. A summary of the research work will receive attention together with the study's conclusions. Finally, appropriate recommendations for further research work in the future will be declared.

The fourth and final phase of Morse's and Field's (2002) framework involves the quality checks of credibility, dependability and transferability or '*re-contextualization*' of the developed QOL conceptual model to other populations and settings. Importantly, this phase involved these quality checks to ensure trustworthiness or rigour of the qualitative and quantitative data generated in relation to this research study.

From the constructivist perspective, Lincoln and Guba (1986) advocate the utilisation of different criteria to replace the concepts of 'validity, reliability and generalizability' which they perceive as belonging to the positivist tradition in social science. Instead, to assess the soundness or the quality of qualitative research work, they suggest that '*credibility as an analogue to internal validity, transferability as an analogue to external validity, dependability as an analogue to reliability and confirmability as an analogue to objectivity*'. In combination, they view these criteria as addressing the broader concept of '*trustworthiness*' used for qualitative assurance purposes in qualitative research which in itself is a parallel concept for '*rigour*' used for quality assurance purposes in quantitative research (Lincoln and Guba 1986, p.76 – 77 – *see summary table overleaf*).

Traditional and alternative criteria for the assessment of quality in quantitative and qualitative research (Lincoln and Guba 1986)

'Rigour' – Quantitative Research: Traditional criteria for Judging Quantitative Research.	'Trustworthiness' – Qualitative Research: Alternative Criteria for Judging Qualitative Research.
Internal validity	<i>Credibility</i>
External validity	<i>Transferability</i>
Reliability	<i>Dependability</i>
Objectivity	<i>Confirmability</i>

In this cardiac study, the researcher used the 'respondent validation technique' to ensure credibility of the data with both the cardiac health care professionals (CHCPs) and the patient participants (Mays and Pope 2000; Gerrish and Lacey 2006). Each member (n = 10) from the health professions (doctors, nurses and physiotherapists) were asked to check the accuracy of a full interview transcript within one week post interview. In the cardiac environment, the researcher personally gave the transcripts with instructions, with a copy of the semi-structured interview schedule, to each health professional by hand and they were requested to return them within one week. Two of the health professionals returned them to the researcher on time, whilst it took another week, with prompting, for the doctors to return the transcript. Minor adjustments to areas related to their interpretation and definition of the older person's QOL were reported by three health professionals (doctor, nurse and physiotherapist). Accordingly, the researcher in person clarified and amended this area with the appropriate health professional at the hospital.

In the same way as the health professionals, the researcher requested the cardiac patients (n = 7) to check the credibility of the data. The transcript documents were handed to the patient participants with instructions and the semi-structured questionnaire at the follow-up cardiac clinics three weeks post cardiac rehabilitation. They were requested to send them back to the researcher by post with a stamped addressed envelope within one week. After some telephone prompts to two patient participants, the researcher received all the documents by post within a ten-day period. Minor adjustments to area of spirituality and worship and elements that constituted QOL were reported by four patient participants (two male patients (CABG and PCI) and two females (PCI and CABG). These were, accordingly, clarified and amended by a telephone conversation between the researcher and the patient participant.

In using triangulation in the context of this cardiac study, the researcher created a position to cross-validate the findings/results between two distinct data sources that had emerged from the worldviews of both subjective and objective realities. This was in the interest of completeness, comprehensiveness and corroboration with the breadth and depth of insight that it offered to the understanding of older people's QOL on CRPs (Mays and Pope 2000). These authors suggest that the concept of 'fair dealing', arguably related to triangulation in some way, is a mechanism to ensure:

"That the research design explicitly incorporates a wide range of different perspectives so that the viewpoint of one group is never presented as if it represents the sole truth about any situation".
(Mays and Pope 2000, p.4)

Fair dealing, as a validation mechanism, was applied to the researcher's mixed methods study under the umbrella of a critical realist philosophy. This allowed an exploration of the subjective and objective realities of cardiac staff and patient participants in a real-world health care context (Mays and Pope 2000). This was designed to obtain an eclectic perspective of the impact that a CRP has on the QOL of older cardiac patients (Mays and Pope 2000).

The compilation of a well-structured rigorous research design is clearly important to help bestow credibility and dependability to research results (Mays and Pope 2000). The researcher involved in this study has strived to meet these criteria. This entailed the utilization of a clear philosophical or theoretical framework (critical realism) that built into the study strong cohesive elements existing between notions of epistemology, methods, methodology, data collection and data analysis to direct and guide the research study (Crotty 1998). This involved clear exposition of all stages of the process of data collection and analysis, how data was coded and analysed and how the data sequentially evolved to form a coherent conceptual framework, explanatory model or theory (Mays and Pope 2000). In a similar way, Mason (2010) alludes to the importance of devising a rigorous research design as she speaks about ways to enhance the credibility of researcher interpretation of qualitative data:

"In my view, validity of interpretation in any form of qualitative research is contingent upon the 'end product' including a demonstration of how interpretation was reached. This means that you should be able to, and be prepared to, trace the route by which you came to your interpretations."
(Mason 2010, p.191/192)

The concept of transferability in qualitative research refers to the extent to which research findings/results can be applied beyond the setting in which they were generated (Quinn-Patton 2002). The concept of 'relevance' is one mechanism utilised to assist researchers to achieve

transferability in research work (Mays and Pope 2000). Relevance refers to the process of either generating new and relevant knowledge to illuminate an area (or areas) of a specific field, or increases the confidence of adding a different perspective(s) to an area (or areas) of existing knowledge (Mays and Pope 2000). With relevance in mind, they suggest that the research study should contain sufficient detail so the reader can make a judgment or decision as to whether the findings apply to similar and/or diverse settings. The 'reader' in this context is not defined, but by inference seems to refer to a reader who might possess detailed knowledge of the research process, and who is experienced in performing robust research studies in order to be in a position to pass this kind of professional/academic judgment (Mays and Pope 2000). In light of Mays' and Pope's (op.cit.) argument, it might be suggested that the concept of transferability, defined in the context of academic/clinical relevance in relation to this research study, applies to 'similar' cardiac settings and participant samples in other hospital/community trusts within the West Yorkshire region of the UK. This is based on the rationale that this cardiac study has attempted to create a new relevant conceptual model to develop a deeper understanding and knowledge of how CRPs impact on the QOL of older cardiac patients within this geographical area.

Reflexivity

The concept of reflexivity is another important mechanism for the validation of data (Ritchie and Lewis 2006). This refers to an attribute of conscious awareness and sensitivity that the researcher should possess about his/her influences, personal and intellectual biases, assumptions and experiences that are brought to bear upon the researched topic and the research participants that are involved, to some extent, in shaping the data (Robson 2002; Ritchie and Lewis 2006). Personal and professional researcher- influencing characteristics such as age, sex, class and professional status, combined with the ability to recognize the influence that the different roles of the researcher and participants play in the research process, needs to be declared in research work to enhance the credibility of the findings (Mays and Pope 2000; Ritchie and Lewis 2006).

The process of reflexivity has been applied to this cardiac research study in the following way using an adapted form of Gibb's model of reflection (1988). In essence, this model can be abridged to a triadic cycle of 'cognitive and affective' events applied below (*in italics*) to the research experience which is characterized by the use of the personal pronoun 'I' in reflective accounts (Gibbs 1988):

- *Thoughts, feelings and emotions (Affective domain)*
- *Analysis and evaluation of the experience (Analytical domain)*

- *Conclusion, action plan and learning (Cognitive domain)*

I was aware of my researcher role and the possible psychological influences that it brought to the research context, the researched topic and the research participants (cardiac staff and patients) within the cardiac rehabilitation environments that I attended over the duration of the study. My early background was in health care environments where I practiced as a professional nurse in the NHS at junior and senior level in both Mental Health and Medical/Cardiac hospital settings.

My interest in recent years has become closely aligned to cardiac care and all that it entails, but particularly from teaching and research perspectives at university level over the past two decades. My research interest and focus within the field of cardiac rehabilitation care was to explore the impact of a CRP on the QOL of older cardiac patients with an MI/CABG/PCI. This included an in-depth understanding of the mechanisms, structures, contexts and outcomes that the programme might have on cardiac patients' lives. My professional/historical past has brought potential biases and assumptions that might influence the research process. From a personal perspective, CHD has a genetic tendency to occur in my own family, culminating in the fact that my late father had to undergo a CABG after an MI about three years ago.

I should also acknowledge that the purposive sample of patients (n = 7) {and staff (n = 10)} whom I chose to interview in order to fulfill the research study's inclusion criteria may also have been biased. It was noticeable the patient respondents were well- motivated and positive about the impact that the CRP had on their QOL. They may have been a self-selected group and well-motivated regardless of the study. It was not possible to avoid this situation, as all the patients I encountered in hospital/community settings were also well-motivated. The cardiac staff noted that some of the less motivated patients tended to drop out of the CRP or, more frequently, did not join the CRP from the outset, despite well-informed professional advice to the contrary.

Awareness, analysis and evaluation of these personal, professional and contextual aspects led me to study, learn and apply a number of mechanisms that would alleviate, but not necessarily eliminate, these sources of potential bias. These included the aforementioned validation mechanisms of my use of respondent validation, use of triangulation, use of fair dealing, reflexivity and, finally, my attempt to produce a robust research design upon which the research findings are based.

Finally, I have learnt much about the research process in terms of learning to be competent in performing research work and learning the value of performing an in-depth mixed methods study on the QOL of older cardiac patients under the guidance of a critical realist theoretical framework.

Limitations of the research study

Despite the mechanisms discussed above to limit the threats to this cardiac research study in relation to credibility, dependability and transferability, *de rerum natura*, a number of inherent limitations exist. It is difficult to transfer the findings beyond the local cardiac context in which the study was set. This is based on the notion of the small sample size of the cardiac population selected in both the quantitative (n = 36) and qualitative components (n = 7) of the study (Polit and Beck 2008). Moreover, the type of sampling chosen by the researcher, vis-à-vis a non-probability sample based on ethical grounds, in contrast to a selection of a stratified random sample based on mathematical probability, limits the transferability of the results (Mays and Pope 2000). However, transferability of the results may apply to other similar older cardiac populations with an MI/CABG/PCI within cardiac rehabilitation settings in the Yorkshire region on the grounds of relevance and generation of new knowledge (Mays and Pope 2000).

Semi-structured interviews and audio-taped recordings were used as data collection instruments with both cardiac staff and patients in this study. Both have limitations in the context that they may invoke biases in what is referred to as the 'Hawthorne effect' (Gerrish and Lacey 2006). This relates to the idea that research participants will 'tell the researcher what he/she wants to hear wittingly or unwittingly', rather than focusing on the 'real truths' of the phenomena under investigation (Gerrish and Lacey 2006). The audio-tape recorder, as part of the interview process itself, tends to reinforce this potential problem in terms of '*big brother*' phenomena recording the details of the verbal conversations between interviewer and interviewee. The researcher attempted to allay the problem by commencing the interview with the use of light humour, general conversation and by attempting to put the patient at ease by lowering their anxiety levels and by asking the patient to be as honest as possible in describing their own realities as they existed for them (Ritchie and Lewis 2006).

Due to a lack of randomization and a control group inherent in this particular study for ethical reasons, it is therefore plausible to propose a weakened confidence in making causal assertions in view of the independent variable (CRP) influencing the dependent variable in terms of the bio-psycho-social effects and QOL structures, mechanisms and outcomes of the CRP (Polit and Beck 2008). It should be noted that the critical realist framework does not accept the 'successionist' notion of cause and effect relationships characteristic of the positivistic paradigm (Robson 2002). However, it should be acknowledged that this theoretical framework advocates rigorous forms of scientific measurement in attempting to understand the natural and social world (Pawson and Tilley 2003). Instead, realism looks towards the multi-layered perspective of '*reality (-ities)*' within a real-world context which analyses mechanisms, structures, contexts and outcomes occurring

within a clinical environment (Pawson and Tilley 2003). This contrasts with the narrower 'singular' positivistic perspective of social and natural phenomena that relies on 'causality' (Pawson and Tilley 2003). There are a number of recognized threats to the credibility attached to pre-test/post-test designs which include history, maturation, testing and instrumentation (Polit and Beck 2008).

The concept of history refers to events occurring during the pre and post testing of the physiological variables. With this study, the researcher attempted to keep the intervening history between pre and post measures as similar as possible for all subjects. However, it is still recognized that some other phenomenon other than the independent variable may have occurred between pre-test and post-test that may have biased the results (Polit and Beck 2008).

In terms of maturation, the subjects themselves could have changed during the testing phases and the extent and degree of change is dependent upon the length of time between pre and post testing. In other words, the subjects could have become biased and/or fatigued between pre and post testing with this study, which may have biased the results (Polit and Beck 2008).

It is recognized that the results of the post-test may have been influenced and biased by the pre-test, especially as the study took the form of an examination that was repeated (Polit and Beck 2008). However, it should be stipulated that this type of bias cannot totally be eliminated, but it was mitigated by testing all subjects in a consistent way within a comparable timeframe and, moreover, a gain of a few points was expected with this study when the test was re-administered (Polit and Beck 2008). It should also be pointed out that memory exerts a powerful influence when the researcher attempts to separate the testing session with the recommended two- to four-week time intervals (Robson 2002). For these reasons, it is understandable why the usual criticism of the pre-test - post-test design is that it results in an overestimate of dependability (Robson 2002).

As regards physiological instrumentations and measurements, precision and accuracy may have changed or the researcher and participants may have been influenced by previous physiological recordings between measurements (Polit and Beck 2008). However, this threat to credibility was mitigated with this study, as standardization or calibration procedures were used prior to each measurement period. For example, blood pressure and heart rate for each patient in the pre and post testing phases was measured consistently by cardiac staff using a digital electronic recorder (*Omicron Syphomanometer 250*) (Polit and Beck 2008).

It should be acknowledged also that all measurements contain either systematic error (defined as orderly error which does not influence outcomes to the same extent as random error) or random

error, defined as unorderly error, which has the potential to distort, colour or contaminate the study's outcomes and findings (Polit and Beck 2004). Possible random error crept into this study as the physiological measurement of each patient's body mass index (BMI), for example, was assessed by both the researcher and cardiac staff, which was an essential part of the treatment process on the CRP. This situation potentially brought in random errors to the study which may also fluctuate (Robson 2002). In essence, errors are ubiquitous, as they are associated with investigators, patients, environment and the rating scales themselves. However, random error in this case was beyond the researcher's control due to the small sample size and the necessity to collect relatively large volumes of data at the same time and at two different points in time (pre-test versus post-test) (Polit and Beck 2004).

In summary, this chapter focused on research quality control mechanisms where the trustworthiness of research work is judged by the concepts of credibility, dependability and transferability. Various mechanisms were described and analysed to help achieve these criteria through the researcher's action and analysis of possible ways to mitigate the contaminating biases that may influence research methods, data collection, data analytical processes and the production of research findings. Limitations of the study have been outlined which identified its strengths and weaknesses. The whole process of performing research as a systematic form of human enquiry, associated particularly with human participants, is recognized to be an imperfect act performed within an imperfect real-world context (Robson 2002).

Summary, conclusions and recommendations

In the course of this research work, the researcher set out to determine the impact of a CRP on the QOL of older cardiac patients who suffer from a MI/CABG/PCI. The programme had a strong, positive and beneficial impact on the older cardiac patient's QOL across the physical, psychological, social and spiritual/religious 'structures' of life. The cardiac patients in the study had learned, and were continuously learning, how to adapt to the impact of coronary heart disease and how to adjust to a healthy lifestyle change e.g. healthier diet and more aerobic exercise (Bare and O'Connell-Smeltzer 2010). They had begun to learn about how to manage their CHD disease process, including adequate understanding and adherence to prescribed medication regimes and the prevention of re-occurrence of another cardiac event through modifications of unhealthy personal behaviors e.g. smoking tobacco (Bare and O'Connell-Smeltzer 2010).

For cardiac health care practitioners, this research study draws attention to the needs of older people with CHD and the positive impact that cardiac rehabilitation had on the quality of their

lives. The cardiac rehabilitation process, in the context of multi-disciplinary health care practice in this study, underlines and emphasizes the value, importance and worthiness of the active involvement of 'older people' with CHD (aged 60 years and beyond) in cardiac rehabilitation in view of the beneficial outcomes that it confers on this age group.

Four guiding research questions, under the rubric of a critical philosophical framework, were utilised to direct the study to maintain cohesion between epistemological assumptions, methods, methodology and data analytical processes (Crotty 1998). The research design incorporated a mixed methods research approach that took account of both quantitative and qualitative perspectives of patient participants and cardiac health professionals where each approach was ultimately dictated by the research questions.

In summary, using an SPSS statistical package for quantitative data analysis on the first research question regarding the physical aspects of QOL and thematic analysis for qualitative data analysis (assisted by Morse and Field's (2002) framework), in answering the other three research questions, a new QOL conceptual model entitled '*The Ripple Impact Model (TRIM) of QOL for Older Patients with CHD (MI/CABG/PCI)*' was created using triangulation of quantitative and qualitative data.

This model paved the way towards a contribution to new knowledge from theoretical, empirical and methodological perspectives in relation to:

- The definitional aspects of QOL have been widened from an eclectic perspective which included cardiac staff and cardiac patient perspectives with an MI/CABG/PCI. Further theoretical and empirical evidence from this study suggested that the definition of QOL embraces not just the important concept of bio-psycho-social health, but the equally important non-medical structures and contexts e.g. the importance of family relations, retirement, quality of neighbourhood, sufficient income and religion/spirituality structures.
- QOL with older cardiac patients appear to be related to temporality and time vis-à-vis connections to a specific generation and epochs e.g. '*The post war generation of patients in this study.*' Generational mechanisms seem to be linked to the older cardiac patient's psychological tendency to use stoical, fatalistic coping mechanisms and social support structures as they recuperate from their cardiac event.
- Older cardiac patients on a CRP, regardless of culture, value choices, participation and involvement in an empowerment model in their adjustments to chronic disease management.

- Using a critical realist theoretical framework, qualitative structures, mechanisms, contexts and outcomes of QOL should be considered at least as equally important for the sake of richness, depth and completeness of understanding of QOL development as quantitative approaches.
- Finally, lifestyle change with patients with CHD represents a process of learning, adaptation, and adjustment, where teaching and learning is an interactive dynamic process of informed choice of 'taking on board' health advice exchanged between respective patients and health professionals within diverse health care contexts.

Recommendations for further research work include:

- The performance of a longitudinal mixed methods study designed to determine the long-term impact of a home-based cardiac rehabilitation programme on the QOL of older cardiac patients.
- Further similar research work is necessary on larger samples of cardiac patients with an MI/PCI/CABG and those patients with other cardiac conditions e.g. heart failure and stable angina, to determine the dependability of patient-reported outcomes of the definitional and constituent elements of QOL on cardiac rehabilitation programmes.
- The construction of a clinical quantitative QOL tool that is simple and rigorous yet easy to use, which is also sensitive, credible, dependable and applicable to older cardiac patients with an MI/CABG/PCI in the cardiac rehabilitation field.
- To determine whether stoical and fatalistic attitudes exist as main psychological coping mechanisms in learning to adjust to and live with other chronic cardiac conditions, such as those patients who suffer with heart failure and stable angina.
- To determine whether QOL is temporally-bound and generational-specific by testing whether a similar mixed methods study design on a larger stratified random sample would yield similar results with a '*new/different generation*' of 60- year-old cardiac patients.

- Finally, it is important to perform research work in the future solely on the QOL of ethnic minority patients on CRPs as definitional and structural aspects of their QOL may differ to the Westernized Caucasian population.

In conclusion, the newly created QOL conceptual model reflects the dynamic nature of an older cardiac patient's QOL on CRPs in view of how it demonstrates the positive interactions and impacts that exist between the physiological and psychological structures, cultural and spiritual, generational and temporal, economic and social and, finally, retirement and relationships 'watched' closely in health by the 'three QOL guardians' of personal independence, choice and autonomy.

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APPENDICES

APPENDIX I: BORG SCALE

Rating of Perceived Exertion (RPE)	
6	No exertion at all
7	
8	Extremely light
9	Very light
10	
11	Light
12	
13	Somewhat hard
14	
15	Hard (heavy)
16	
17	Vey hard
18	
19	Extremely hard
20	Maximal exertion

Source: (Noble and Robertson 1996): Borg Rating Scale of Perceived Exertion (RPE)

APPENDIX II: LITERATURE REVIEW SUMMARY TABLE

LITERATURE REVIEW: SEARCH STRATEGY: SEARCH TERM: “QUALITY OF LIFE” FROM THE “SUMMON” SEARCH ENGINE RANGING FROM 31ST APRIL 1980 – 31ST APRIL 2011:

MEDICINE AND PUBLIC HEALTH (198 ARTICLES) – (i.e. THE TOTAL NUMBER OF ARTICLES RETRIEVED USING THE INCLUSION AND EXCLUSION CRITERIA BELOW)

Inclusion criteria	Exclusion criteria	Subject terms and number of articles	Search terms/items	Examples of Journals and web sites searched
Limit to articles from scholarly publications, including peer review	Articles written in non-English languages	Surgery (73 articles)	<u>CHD, cardiac rehabilitation</u> Coronary heart disease and epidemiology; coronary heart disease and statistics: myocardial infarction rehabilitation: percutaneous coronary intervention (PCI) and rehabilitation; myocardial ischaemia rehabilitation: Acute Coronary Syndrome (ACS) and rehabilitation and older people: health profile and Kirklees Metropolitan Council and West Yorkshire and UK; Association Public Health Observatories (APHO) and Yorkshire and Humberside; ageism in cardiology; cardiac rehabilitation: comprehensive cardiac rehabilitation and prevention; heart-disease-patients-rehabilitation; elderly patients cardiac rehabilitation; coronary artery bypass surgery and rehabilitation; and, finally, the concepts of prevention of coronary heart disease and stroke; and treatment of coronary heart disease and stroke'	<u>Journals:</u> 'Quality of Life Research; Health and Quality of Life Outcomes; Social Indicators; Journal of Advanced Nursing; The Lancet; British Medical Journal; Nursing Philosophy; Physiotherapy; Physiotherapy Theory and Practice; Nursing Inquiry; Nursing Research; Age and Ageing; Heart; Qualitative Research; Journal of Mixed Methods Research (new from January 2007); 'Journal of Cardio-pulmonary Rehabilitation and Prevention (JCPR)'. <u>Web Sites:</u> Medline, Cinahl, PsycINFO, Cochrane library, Web of knowledge and Science Direct and the NHS evidence databases. Department of Health, UK; British Heart Foundation (BHF); British Heart Foundation Statistics
Add results beyond your library's collection	Newspaper articles	Cancer (36 articles)		
Journal article	Aetiology/biopsy/diagnosis/survival	Analysis (18 articles)		
Book chapter	Stomach neoplasms and related concepts	Quality of life (15 articles)		
Conference Proceeding	Rectal cancer/neoplasm/surgery/faecal incontinence/colon cancer	Quality-of-life (13 articles)		
Book Review	Breast cancer and related concepts Carcinoma /adenocarcinoma	Health aspects (11 articles) Management (11 articles)		

			<p>QOL.....</p> <p>Patient satisfaction scales; measuring patient satisfaction; quality of life measures in health care: generic quality of life tools; utility quality of life tools; quality of life tools and disease; patient reported quality of life measures and older patients; health related and quality of life and older cardiac patients; and finally measurement of quality of life'.</p>	<p>Database; Association for Public Health Observatories (APHO); Health care commission; British Association for Cardiovascular Prevention and Rehabilitation (BACPR); the local Kirklees Metropolitan Council: and finally, the Cardiac Care and Rehabilitation web site at the University of York, UK.</p>
	Radiotherapy/chemotherapy	Care and treatment (10 articles)		
	Mastectomy	Therapy (5 articles) / treatment outcome (2 articles)		
	Ulcerative colitis	Randomised trial (2 articles)		
	Pathology/lymph node pathology	Middle aged (2 articles)		
	Gastroenterology and hepatology	Aged (0 article) Women (0 article)		

APPENDIX III: Literature review – Cormack’s (2000) framework for critical analysis and its application to a selected research paper entitled:

‘Clark A, Whelan H, Barbour R, MacIntyre (2005): A Realist Study of the Mechanisms of Cardiac Rehabilitation’, *Journal of Advanced Nursing*, 52 (4), pp. 362 – 371.

Heading	Questions to be asked	Yes (y): (overall comments by VF)	No (n): (overall comments by VF)
Title	<ul style="list-style-type: none"> - Is the title concise? - Is the title informative? - Does the title clearly indicate the content? - Does the title clearly indicate the research approach used? 	<p>y</p> <p>y</p> <p>y</p> <p>y</p> <p>A good clear section is evident which stipulates a concise, clear and informative title with a clear identification of the proposed research approach (Cormack 2000).</p>	
Author (s)	<ul style="list-style-type: none"> - Does the author(s) have appropriate academic qualifications? - Does the author(s) have appropriate professional qualifications and experience? 	<p>y</p> <p>y</p> <p>Two of the authors are highly qualified academic researchers with PhD qualifications in Schools/Faculties of Nursing. One of the author’s is a medical doctor with an MD – a well respected medical research degree. The research assistant possesses a Master’s degree in Science who will have some experience of academic research in her</p>	

		<p>role as research assistant. At least, one of the authors is a professional registered nurse. Another author holds a professional medical degree. They are appropriately professionally qualified to undertake research on health care topics. Gerrish and Lacey (2006) suggest that highly qualified academic researchers lend credence and value to the performance of academic research. Professional qualifications lends clinical worth, value and credence to the performance of clinical research studies (Polit and Beck 2008)</p>	
Abstract	<ul style="list-style-type: none"> - Is there an abstract included? - Does the abstract identify the research problem? - Does the abstract state the hypotheses (if appropriate)? - Does the abstract outline the methodology? - Does the abstract give details of the 	<p>y – clear and detailed</p> <p>y --- An examination of patient perceptions /experiences of cardiac rehabilitation (CR) and how its mechanisms and contexts influence its long term effectiveness (Clark et al 2005).</p> <p>Not applicable (n/a)</p> <p>y - Use of a realist methodology with focus groups designed to explore participant perceptions and experiences of the long term effectiveness of CR (Clark et al 2005)</p> <p>y - Sample number totals 47 patient participants (30 males and 17 females) diagnosed with CHD who</p>	

	<p>sample subjects?</p> <ul style="list-style-type: none"> - Does the abstract report major findings? 	<p>attended a CRP (Clark et al 2005).</p> <p>Y - Participant Perception's regarding the content of CR was not strongly linked to modifications' of health behaviours in the long term. Positive effects of CR included enhanced social mechanisms (social comparisons, building of friendships and relationships, and social capital) (Clark et al 2005). Positive effects of CR on body focused mechanisms e.g. enhanced knowledge of personal physical boundaries, more trust placed on the body which has CHD. Greater participant confidences on a CR programme (CRP) to positively assist health behavioural change (Clark et al 2005)</p>	
<p>Introduction</p>	<ul style="list-style-type: none"> - Is the problem clearly identified? - Is the rationale for the study 	<p>No sub-heading exists as an 'introduction' in this section of the paper. However, it seems to be subsumed under the sub-titles of '<i>background, contemporary cardiac rehabilitation' and 'clinical effectiveness and cardiac rehabilitation'</i>(Clark et al 2005)</p> <p>y Concerns exist in the literature over the effectiveness of CR on participant health outcomes particularly the unexplained variations in the long term effectiveness of CR (Clark et al 2005)</p> <p>y. The rationale appears to be more implicit rather than</p>	

	<p>stated?</p> <ul style="list-style-type: none"> - Are the limitations of the study clearly stated? 	<p>being explicitly stated. The need for this study is addressed e.g. to explain CRP variations / inconsistencies in facilitating health promotion activities in modifying behavioural change in cardiac risk factors (Clark et al 2005).</p>	<p>No – the study’s limitations, at this point, are not evident.</p>
<p>Literature Review</p>	<ul style="list-style-type: none"> - Is the literature review up-to-date? - Does the literature review identify the underlying theoretical framework(s) 	<p>Y There is no evidence of a ‘literature review’ sub-heading per se. There is reference made to the appropriate literature. It appears to exist under the guise of ‘<i>Background and the clinical effectiveness of cardiac rehabilitation</i>’. The review is short and terse but it is current for the time when it was composed in 2005 (e.g. Department of Health 2000, Balady 2000, Christakis 2004)</p>	<p>n. The underlying theoretical framework is not made clear at this point. However, reference is made to realist theoretical framework in the abstract. But it does not explicitly state whether it is a qualitative or quantitative or mixed methods framework. Focus groups are</p>

	<ul style="list-style-type: none"> - Does the literature review present a balanced evaluation of material both supporting and challenging the position being proposed? - Does the literature clearly identify the need for the research proposed? 	<p>y. There is some evidence of a balanced review, though short, which stresses the strengths and limitations of some of the important literature on the clinical effectiveness of CR e.g. Clark et al (2005, p.363) point out that "<i>distinctions should be made between criticisms that CR is a flawed concept and the poor implementation of CRP</i>"</p> <p>Meta – analysis and systematic reviews demonstrate the clinical effectiveness of comprehensive CRPs <i>versus</i> the existence of variations in effectiveness of CRP interventions influencing changes in health behaviours related to CHD modifiable risk factors (Loveman et al 2003, Riemsma et al 2003 – this is regarded as good quality evidence derived from systematic reviews (Polit and Beck 2008)</p> <p>y. The literature points out, in conjunction with these authors, that there is a need to comprehend and to understand the reasons for variations in CRP effectiveness. This includes the impact(s) that these CR</p>	<p>mentioned which lends itself to the assumption and the authors adoption of a realist qualitative framework (Clark et al 2005).</p>
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	<ul style="list-style-type: none"> - Are important references omitted? 	<p>interventions have on participant well being from a health promotion perspective related to managing and controlling CHD risk factors (Thompson 2002, Clark et al 2005).</p> <p>Key references are present in the article.</p>	<p>n. References to key authors present (e. g. Thompson 2002, Bethell 2000, Balady 2000, Loveman et al 2003, Mc Allister Pawson and Tilley's (1997) seminal work on 'Realistic Evaluation' is present . So also is the appropriate government health document i.e. NSF for CHD (DOH 2000). This framework is recognised as a major driver or blueprint for quality improvement in CHD care across the UK (DOH 2000)</p>
<p>The hypothesis</p>	<ul style="list-style-type: none"> - Does the study use an experimental approach? - Is the hypothesis capable of testing? - Is the hypothesis unambiguous? 	<p>N/A (Not applicable)</p> <p>N/A</p> <p>N/A</p>	

<p>Operational definitions</p>	<ul style="list-style-type: none"> - Are all terms used in the research question / problem clearly defined? 		<p>n. There is no clear evidence of operational definitions of concepts present in the article. The reader is left to assume the meaning of a '<i>realist study</i>' or what realism means. The same situation applies to the realist concepts of '<i>mechanisms and contexts</i>'. The concept of CR warrants a definition to enhance conceptual clarity and to avoid confusing the reader e.g. what length was the CRP ? aerobic exercise or not ? specific diagnosis of patient participants? comprehensive CRP or not ? (Polit and Beck 2008)</p>
<p>Methodology</p>	<ul style="list-style-type: none"> - Does the methodology section clearly state the research approach to be used? - Is the method appropriate to the research 	<p>y. Under the sub-title '<i>Design</i>', the methodology is clarified and justified in relation to a qualitative design. This approach was used to explore patient perspectives of CR and how it assisted beneficial changes in health behaviours in relation to cardiac risk factors (Clark et al 2005).</p> <p>y. There is an appropriate match and synchrony between the research problem and the chosen</p>	

	<p>problem?</p> <p>- Are the strengths and weaknesses of the approach stated?</p>	<p>methodology i.e. examination of subjective concept (experiences /perceptions) of CR and the use of a qualitative design (Gerrish and Lacey 2006). However, a justification and rationale for choice of a realist theoretical framework is not evident. This is an important omission as the theoretical framework drives the study across the research process from conceptualisation to conclusion and recommendations (Proctor 1998)</p> <p>Under the '<i>Design</i>' and the '<i>Data Collection</i>' sub-headings, the strengths of the qualitative and the realist approach are made evident (e.g. authors interest in service user perspectives; what factors supported or mitigated against health behavioural changes; "allowing a wide range of responses to be gathered"; the justification of a realist approach in explaining why programmes do or do not work by exploring CR mechanisms and contexts (Pawson and Tilley 1997). These are defined as user/participant choices, capacities and reactions (mechanisms) that CR programmes offer in different circumstances (contexts) and at different times (Pawson and Tilley 1997, Clark et al 2005). However, the inherent weaknesses of the above methodologies are not made clear. A critical review of the literature should contain a balanced evaluation of concepts in terms of a clear announcement of both strength and limitations of the appropriate</p>	
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		methodologies (Gerrish and Lacey 2006, Polit and Beck 2008)	
Subjects	- Are the subjects clearly identified?	<p>y. There is a clear explanation of the study's participants. The final sample selection consisted of 47 subjects (30 males and 17 females). The age range of the participants was 51 – 84 years; mean age = 68.1.</p> <p>Under the '<i>Study setting</i>' sub-heading, the authors declare the specific patient diagnoses (MI and CABG). The CRP was 12 weeks in length set in an OPD gymnasium in a district general hospital in the West of Scotland. This geographical region has a higher incidence of CHD in comparison to the rest of the UK (PHIS 2001). Therefore, it is particularly important to target these areas with effective secondary prevention programmes such as CR to treat, delay and to prevent further CHD development and progression (Thow 2009).</p>	

	<p>- Has the validity and reliability of any instruments or questionnaires been clearly stated?</p>	<p>framework (1997) to structure the data that emerged form the focus groups. The section is limited in this section in so far as the authors do not adequately discuss how they used the framework (Pawson and Tilley 1997). However, the realist concepts of '<i>mechanisms</i>' and '<i>contexts</i>' as related to the practice and effects of the CRP are well described. This is useful as some authors do not adequately define these concepts when using a realist methodology (Pawson and Tilley 1997, Robson 2002). Use of a questionnaire is also mentioned based on prior empirical work re: the participant views of CRP. The purpose of this instrument is well justified. However, the type of questionnaire is not made clear. It is left to the assumption of the reader that it is qualitative in nature. Also, the questionnaire does not feature in the appendix for inspection by other readers / researchers/academics (Polit and Beck 2008)</p>	<p>n. The validity and reliability of the aforementioned tools are not discussed. This is a limitation of this research work as this kind of analysis enhances the trustworthiness, consistency and rigour of the data and gives credence to the research findings</p>
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			from empirical, theoretical, and practical perspectives (Polit and Beck 2008)
Ethical considerations	<ul style="list-style-type: none"> - If the study involves human subjects has the study ethical committee approval? - Is informed consent sought - Is confidentiality and anonymity assured? 	<p>y. LREC permission was granted to undertake the study. Ethical principles are important to maintain whilst undertaking research work to ensure that no harm comes to the participants (non-maleficence), and to uphold justice/fairness, veracity and righteousness (Gerrish and Lacey 2006)</p> <p>y. Written consent was assured prior to undertaking focus group interviews (Clark et al 2005).</p> <p>y. Anonymity was assured by the use of pseudonyms. Participant identities were kept confidential (Clark et al 2005)</p>	
Results	<ul style="list-style-type: none"> - Are results presented clearly? 	<p>y. The findings are clearly presented across 3 major sub-headings:</p> <ol style="list-style-type: none"> (1. The process of attending CR: the self and the group, the outsider and the insider: 2. Views of the content of the CRP (e.g. health education/health promotion re: CHD risk factors, exercise schedules, and participant perceived fitness levels. 3. The mechanisms of cardiac rehabilitation: how 	

	<ul style="list-style-type: none"> - Are the results internally consistent? - Is sufficient detail given to enable the reader to judge how much confidence can be placed in the findings? - Does graphic material enhance clarity of the results being presented? 	<p>(<i>participant health behavioural</i>)change re: (<i>cardiac risk factors</i>) was promoted or inhibited (Clark et al 2005)</p> <p>y. The results are internally consistent in relation to the appropriateness and choice of methodology the data collection tools, and the data analytical process. The notion of Internal consistency adds , depth, credibility and rigour to the study's findings (Robson 2002, Polit and Beck 2008)</p> <p>y. A good level of conceptual detail is evident without adding confusion and complexity to the arguments presented. This tends to produce confidence in the findings (Polit and Beck 2008).</p> <p>Graphic material is not present in this study. But the material presented in 'direct quotation format' by the CR participants is stylistically attuned to a qualitative approach (Gerrish and Lacey 2006)</p>	
Data analysis	<ul style="list-style-type: none"> - Is the approach appropriate to the type of data collected? 	<p>y. Data was transcribed and analysed after each focus group. A thematic approach to the analysis of the data was used (common themes were identified re: experiences, mechanisms and contexts of the 12 week CRP. The thematic approach was appropriate and consistent with the utilisation of the realist qualitative methodology</p>	

	<ul style="list-style-type: none"> - Is any statistical analysis correctly performed? - Is there sufficient analysis to determine whether significant differences' are not attributable to variations in other relevant variables? - Is complete information (test value, df, and p) reported? 	<p>(Pawson and Tilley 1997). Transcripts were independently coded by two of the researchers who performed the study – then comparison and contrasting of emergent themes and categories – then categories were subsequently refined to develop an agreed coding framework then used to code each transcript (Ritchie and Spencer 1994, Barbour and Featherstone 2000)</p> <p>n/a : This study used a realist qualitative methodology. Statistical analysis does not apply in this context.</p> <p>n/a</p> <p>n/a</p>	
Discussion	<ul style="list-style-type: none"> - Is the discussion balanced? 	<p>This is an interesting and balanced discussion of CR effectiveness (body focused and social mechanisms) on a group of CR patients who</p>	

<p>Conclusions</p>	<ul style="list-style-type: none"> - Does the discussion draw upon previous research? - Are the weaknesses of the study acknowledged? - Are clinical implications discussed? 	<p>suffered an MI/CABG. Strengths of CR (the majority) and limitations (for some) are highlighted across physical, psycho-social and continuing health change (re: cardiac risk factors) perspectives (Clark et al 2005).</p> <p>y. The discussion makes links to relevant previous research in the field e.g. Clark et al 2002, Christakis 2004, Lillie 2003 and so forth)</p> <p>The study's limitations are disclosed towards the end of the study e.g. restriction of a study to a single site (may affect transferability of the study's findings to the wider cardiac population (Cormack 2000). Another limitation is the three year retrospective recall of participant views of CR and its effects. This adds potential difficulties with accurate recall and memory of events, mechanisms, effects and contexts of CR (Polit and Beck 2008)</p> <p>y. The clinical implications for health care provision by nursing and the multi-disciplinary team to participants who attend CRPs are discussed. This entails the 'formal curricula' that CR participants learn from the multi-disciplinary team. This is closely connected to the formal and</p>	
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	<ul style="list-style-type: none"> - Are conclusions supported by the results obtained? 	<p>informal theoretical and practical knowledge of health promotion gained by users. This situation assists CR participants to make continuing long term health behavioural change across relevant modifiable cardiac risk factors (Clark et al 2005). Nurses, in particular, should take account of (and to harness) the many sources of knowledge and mechanisms (formal and informal) that cardiac patients use to enhance their health promotion activities (Clark et al 2006). Nurses, in particular, should display greater awareness, to acknowledge and to understand the embodied nature of existence (e.g. physical capacity and physical boundaries attached to patient exercise and fitness schedules) (Clark et al 2005)</p> <p>y. There is no clear evidence of a sub-title '<i>Conclusion</i>' but the concept is implicitly present in the work's '<i>Discussion</i>' and study's '<i>Limitations</i>' section. Implicitly, the conclusions are supported by the results obtained – there are close connections between the findings and the conclusions of the study (Clark et al 2005)</p>	
<p>Recommendations</p>	<ul style="list-style-type: none"> - Do the recommendations suggest further areas for research? 	<p>y. No sub-heading for recommendations exists in the article. It is implicit rather than being clearly explicit. A further area for research work is more tacit in nature than overt. However, Clark et al (2005) suggest that nurses and other relevant cardiac health</p>	

	<p>- Do the recommendations identify how any weaknesses in the study design could be avoided in the future?</p>	<p>professionals should instigate and encourage the development of informal educational mechanisms and structures for CR users. This is defined as the formation of personal and social relations between CR service user members after the completion of the CRP. This designed to foster motivation, camaraderie and continued learning in health behavioural modification across cardiac risk factors. (Clark et al 2005)</p> <p>Nurses should have greater awareness and insight into the different views and experiences of the cardiac diseased body (<i>embodiment</i>) with CR patients. This phenomenon is related to a greater knowledge of personal physical boundaries amongst nurses when caring for CR patients and how the notion of embodiment is associated with short and long term health behavioural change in CR patients (Clarke et al 2005)</p>	<p>n. This is a limitation of the authors research work. Reflection is an important process of research work to avoid future pitfalls in academic research work, including the avoidance of weaknesses , where possible, in the design in</p>
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			future studies (Polit and Beck 2008, Howatson-Jones 2010).
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Summary and conclusion

Critical appraisal, in the research context, is defined as the assessment or the evaluation of the strengths and weaknesses of research work that traverses the research process (Cormack 2000, Gerrish and Lacey 2006). Critical appraisal involves the active use of the intellectual process of critical analysis or review that systematically ranges from the title of the study, literature review, theoretical framework, data collection and analysis through to the research study's recommendations and conclusions (Cormack 2000 Gerrish and Lacey 2006)

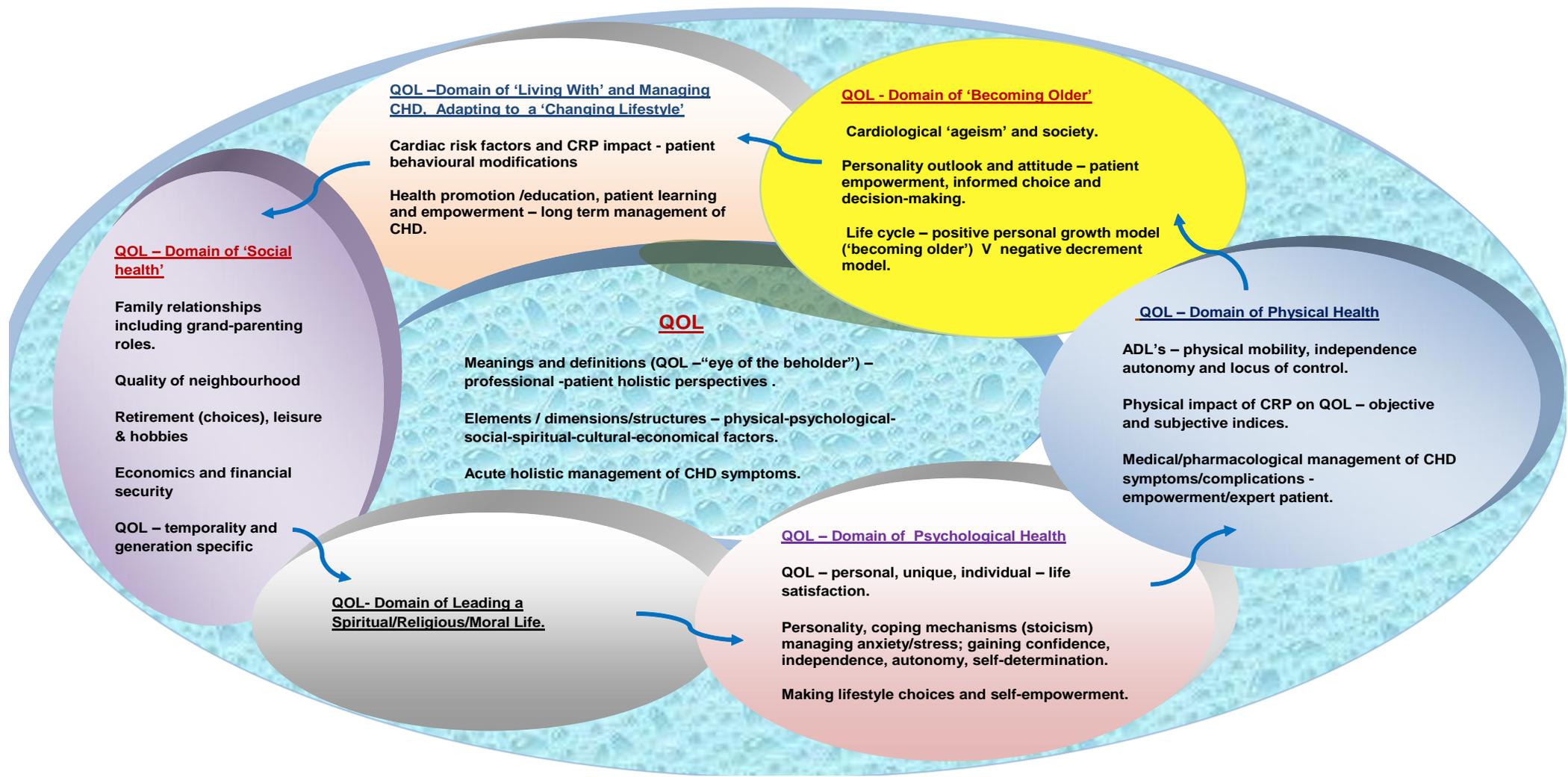
The researcher selected a seminal research paper which was relevant and theoretically, and clinically applicable to the subject matter of this research thesis. The selected paper provided an exemplar for the researcher's approach to the technique of critical analysis of the literature, related to this thesis, using Cormack's (2000) analytical framework. The research paper was entitled:

'Clark A, Whelan H, Barbour R, MacIntyre (2005): A Realist Study of the Mechanisms of Cardiac Rehabilitation', *Journal of Advanced Nursing*, 52(4), pp. 362 – 371.

The researcher has provided a detailed critical review of the paper above using Cormack's (2000) framework for the critical review of research literature. In summary, this is an academically robust paper where its various strengths are outlined in the above critical review framework using Cormack's conceptual framework. Despite evidence of a relatively small number of limitations, (in relation to the paper's operational definitions, data collection, validity and reliability and recommendations outlined above), the research paper informed the researcher's work from conceptual, empirical, and

methodological perspectives. In particular, it provided him with guidance on the application of a critical realist framework to the theory and practice of cardiac rehabilitation. Clark et al's (2005) work is one of the few studies in the health literature to utilise and apply a realist theoretical framework to the field of cardiac rehabilitation. In conclusion, Clark et al's (2005) conceptual approach in their research paper assisted the researcher in question to critically review, analyse and apply concepts and methods to his research work on the 'impact of CRP on the QOL of older patients with CHD (MI/CABG/PCI).

APPENDIX IV: The Ripple Impact Model (TRIM) of QOL for Older Patients with CHD



APPENDIX V:**Demographic table with medication regimes for four patients with CHD**

Patient identity and gender	1: Male patient	2: Female patient	4: Female patient	5: Male patient
Diagnosis	CABG	CABG	STEMI/PCI	NSTEMI/PCI/ STENT
Year of birth	1941	1944	1939	1932
Family history	Angina. Diabetes Mellitus (DM). High B/P. Macular degeneration. Positive history of CHD.	Acute Coronary Syndrome (ACS); MI; Negative family history of CHD.	Positive family history of CHD: Father – MI.	None, Transient Ischaemic Attack (TIA).
Occupation	Retired accountant	Retired labourer	Retired café worker	Retired teacher
Medication	Statin Ramipril Amiodarone Insulin, Doxazosin	Aspirin, Statin, Clopidogrel, Metoprolol, Amidarone, Paracetamol	Aspirin, Ramipril, Statin GTN, Atenolol	Aspirin, Clopidogrel, Statin, Atenolol

**APPENDIX VI: CARDIAC HEALTH CARE PROFESSIONAL (CHCPS) – QUALITY OF LIFE:
SEMI-STRUCTURED INTERVIEW SCHEDULE: {1HR TAPE RECORDED INTERVIEW}**

Aims:

To answer research question two (RQ 2) of the research study:

RQ 2: What are Cardiac Health Care Professional's (CHCP's) perceptions of the impact of the CRP on the older patient's QOL who suffers from a cardiac event (MI/CABG/PCI)?

AIM OF THE SEMI-STRUCTURED INTERVIEW SCHEDULES:

- To elicit knowledge, data or information in relation to the older person's quality of life on a CRP from key health professionals from the multi-disciplinary team in the hospital and community cardiac services.
- 1. **MEANING OF QOL TO YOU AS A CARDIAC HEALTH PROFESSIONAL** (Well being, happiness, life satisfaction, how you feel about your life)?
- 2.
- 3. **COMPONENTS/ELEMENTS OF QOL** for **you** as a Cardiac Health Professional?
- 4. **YOUR MEANING/INTERPATION** of **QOL** for an **older cardiac patient** (60yrs +) with MI/CABG – your view?
- 5. **YOUR VIEWS** on the **COMPONENTS/ELEMENTS OF QOL** for the **older cardiac patient** ?
- 6. **IMPORTANCE OF DIFFERENT VIEWS ON QOL** (patient, health professional, spouse) – how important?
- 7. **IMPORTANCE OF QOL AS AN OUTCOME MEASURE** on the older patient's QOL?

8. INFLUENCE OF **AGE** ON OLDER CARDIAC PATIENT'S *QOL on CRP's?*
9. DIFFERENCES IN **GENDER** (older cardiac patients) IN HOW THEY VIEW THEIR *QOL on CRP's?*
10. **IMPACT/EFFECT/INFLUENCE OF LIFESTYLE CHANGE & HEALTH PROMOTION** on older patient's *QOL on CRP's?*
11. **IMPACT OF EXERCISE** (HOSPITAL/COMMUNITY/PALS) on older patient's *QOL on CRP's?*
12. **IMPACT OF RELAXATION/STRESS MANAGEMENT** on older patient's *QOL – psychological effects on CRP's ?*
13. **IMPACT OF HEALTHY DIET** on older patient's *QOL on CRP's on CRP's?*
14. **IMPACT OF STOPPING SMOKING** on older patient's *QOL on CRP's?*
15. **IMPACT OF PATIENT INFORMATION** (verbal, written, telephone) on older patient's *QOL on CRP's?*
16. **IMPACT OF CRP AS SOCIAL NETWORK/SUPPORT GROUP** on older patient's *QOL on CRP's?*
17. **IMPACT OF TAKING APPROPRIATE MEDICATION** on older patient's *QOL on CRP's?*
18. **IMPACT OF HOBBIES/LEISURE ACTIVITIES** on older patient's *QOL on CRP's?*
19. **IMPACT OF WORSHIP/RELIGION/PATIENT'S BELIEF SYSTEM** on older patient's *QOL on CRP's.?*

20. **IMPACT OF CRP PROGRAMME AS A WHOLE** on older patient's *QOL* including patient's from ethnic minority groups?

21. **IMPROVEMENT OF** older cardiac patient's **QOL** on **CRP's** in **X location** – HOW would you improve the patient's **QOL** as a health professional particularly if you had a “wish list”?

Thank you.

**APPENDIX VII: THE MEANINGS OF THE CARDIAC PATIENTS' QUALITY OF LIFE (QOL)
IN RELATION TO THE CARDIAC REHABILITATION PROGRAMME (CRP)**

PRIVATE AND CONFIDENTIAL

NAME:

AGE:

DIAGNOSIS:

UNIT NUMBER (please ignore).....

DATE/PLACE OF PROGRAMME ATTENDANCE

DATE OF INTERVIEW

CARDIAC PATIENT INTERVIEW SCHEDULE:

Aims:

To answer research questions three and four of the research study:

- *RQ 3: How does an older cardiac patient, enrolled on a CRP, define QOL in relation to their cardiac event (MI/CABG/PCI)?*
- *RQ 4: What are older cardiac patient's perceptions, meanings and experiences of the bio-psycho-social-spiritual impact of the CRP on their QOL?*

INTERVIEW SCHEDULE

1. What does **Quality of Life (QOL) mean** to you now after you have had heart event? (i.e. heart attack, angioplasty or heart surgery?)
2. What did QOL mean to you before your heart event?
3. Why do you think there is a **difference in QOL**, if any, before and after your heart event?
4. From your own experience /opinion, what are the '**building blocks**' that make up your own QOL before or after your heart event?
5. How do feel about your **physical health** (e.g. carrying out daily activities of living) since your heart event?
6. How do you feel about your **mental health** (e.g. feeling well, relatively happy and anxiety-free) to you since your heart event?
7. How do you feel about your **social health** (e.g. enjoying retirement, hobbies, family, grand children, relationships) since your heart event?
8. How do you manage your **physical, mental and social health** since your heart event?

9. 'Being able to make **choices** and being reasonably **self caring / independent**' – how do these ideas affect your QOL since your heart event?

10. How much does **worship, religion or spirituality** affect your own QOL if any, before and after your heart event?

11. How much does **culture, ethnic origin or upbringing**, if any, affect your own QOL before and after your heart event?

12. In what way does **retirement**, if any, (or if still working), affect your QOL before and after your heart event?

13. What changes, if any, have you made to your **lifestyle** since your heart event?

14. What differences, if any, have these changes made to your QOL since your heart event?

15. What did you feel about the **health promotion activities** / advice (e.g. on smoking, diet, exercise, etc) given to you by health care staff on the Cardiac Rehabilitation Programme (CRP) since your heart event?

16. What did you feel about the **stress relieving activities or relaxation** classes given to you by health care staff on the Cardiac Rehabilitation Programme (CRP) since your heart event?

17. What did you feel about the **exercise schedules** taught to you by health care staff on the CRP since your heart event?
18. What did you feel about **medication advice or knowledge or awareness** taught to you by health care staff on the CRP since your heart event?
19. What did you feel about the **dietary advice** taught to you by health care staff on the CRP since your heart event?
20. How does '**getting**' older, if any, affect your QOL?
21. How does your **gender or gender roles** affect your QOL?
22. What contribution has the CRP programme made to your own QOL (**effect of CRP on QOL**) in what you will do to maintain your own health in the future?
23. What **improvements** would you make to the CRP programme here in this area to benefit your own QOL as well as others?

COMMENTS

Please Provide Any Helpful Advice On Any Aspects Of The Questions Outlined Above. e.g.

- What questions would you like to ask me – the interviewer?
- What questions have I (the interviewer) missed out in asking you?

THANK YOU VERY MUCH FOR YOUR TIME, HELP AND CO-OPERATION.

APPENDIX VIII: ETHICS: PATIENT INFORMATION FORM

THE RESEARCH PROJECT

THE IMPACT OF A CARDIAC REHABILITATION PROGRAMME ON THE QOL OF AN OLDER CARDIAC PATIENT WITH AN MI/CABG/PCI

Within the hospital and the community, there is a need to discover how cardiac rehabilitation programmes affects the quality of life of older cardiac patients. Research work is one effective way to do this.

The main aim of this research study is to assess the effects of a cardiac rehabilitation programme on the quality of life of an older cardiac patient with a heart event.

WHAT WILL HAPPEN IF YOU AGREE TO TAKE PART?

My name is Vincent Finn, Senior Lecturer at the University of Huddersfield, School of Human & Health Sciences. I am the researcher working on this project.

With your permission and co-operation, there are a number of activities that I will ask you to participate in. It is important to remember that these activities are given to you at stages throughout the six-week hospital exercise programme. These activities include the following:

- With your participation, the first activity that I would like to do is to record your blood pressure, pulse, smoking history, weight and height, and exercise ability levels. If you had any of these tests done recently, it will not be necessary to repeat them.
- The second activity, which I would like you to do, is to fill in a short anxiety/depression scale.

You will be asked to complete these activities at the beginning and at the end of the six-week exercise programme whilst you are at the hospital or community. With your

permission, I would like to interview a small number of you who are undergoing cardiac rehabilitation at the hospital or in the community.

The purpose of these interviews is to explore your experiences, feelings and thoughts of the hospital rehabilitation programme. This aspect of the study will be done using a 1 hr tape-recorded interview. The interviews are taped to help me with the accurate recall of the information. During the course of the study, the tapes will be stored in a locked container and they will be destroyed at the end of the study. You will be offered a copy of your own interview schedule up until the end of the project.

WHAT WILL HAPPEN TO THE INFORMATION THAT WE SHARE

Any information that is shared with me will not be used for any other purpose other than this research study. Your identification will not be made known to any persons within the cardiac rehabilitation programme that occurs at the hospital or community.

WHAT WILL THE COLLECTED INFORMATION BE USED FOR?

The information collected from the study will have one key purpose. The local participating centres in the hospital and community will receive a report, with relevant discussions together with teaching and educational sessions, to inform the growth and development of future cardiac rehabilitation programmes.

WHAT DO I DO IF I AM INTERESTED IN TAKING PART IN THE RESEARCH STUDY:

If you are interested in taking part in this research work, please complete the attached reply slip and give it, either, to me personally (Vincent Finn), or drop it in the reply box provided in the exercise gym on the first day of your exercise programme at the hospital.

If you change your mind about taking part in the study, you are free to withdraw at any time. You do not have to give a reason for your withdrawal and it will in no way affect your present or future treatment in any way.

To withdraw from the study all you need to do is to contact me either in writing or by phone at the address provided below. There will be opportunities to ask further questions before you agree to take part in the study. I will do this, in person, when I meet you all as a group at the cardiac rehabilitation exercise schedule at the local hospital.

However, if you are still unsure about any aspect of this study or that you would like to clarify any issue in this leaflet, please do not hesitate to contact me at the address below.

CONTACT ADDRESS AND NUMBERS: -

Vincent Finn,
Senior Lecturer,
School of Human & Health Sciences,
Harold Wilson Building,
Queensgate,
Huddersfield HD1 3DH.

- Tel: 01484- 473402 (Answerphone):
- E-Mail: v.finn@hud.ac.uk

**APPENDIX IX: LETTER TO NURSE ADVISOR SEEKING ETHICAL CLEARANCE AT THE
HOSPITAL TRUST**

Nov 20, 2001

Senior Nurse Advisor,
Dept. of Quality and Practice Development,
Health Care Trust,
A Hospital,
Some Road,
Anonymous Town

Dear Senior Nurse Advisor,

I enclose the application form and the relevant documentation for the attention of the research and development committee who are due to meet in the near future. I also enclose my application form, which has recently been sent to the university's research committee for registration. This document contains my abridged curriculum vitae and the names of my supervisors and the research supervision expertise that they possess. I also enclose the patient consent form and the patient information leaflet, which is necessary for ethical clearance.

Thank you,
Yours Sincerely,
Vincent Finn,

Senior lecturer,
School of Human & Health Science,
Queensgate,
University of Huddersfield.

Tel: 01484 - 473402.

E-mail: v.finn@hud.ac.uk

E.MAIL COMMUNICATIONS RE: TRACING ETHICAL CLEARANCE LETTER

{NB: Fictitious names are used bar research supervisor and candidate}

SREP was set up in 2001. I was a member of SREP from the very beginning when 'this lady' was the inaugural Chair, but I have no idea where any records were kept. June ??? (sorry - age is getting the better of me) was the original SREP secretary.

Best wishes

Tom

From: A Person

Sent: 18 October 2011 16:27

To: Vincent Finn

Cc: Peter Bradshaw; B;M;O.

Subject: RE: University Research Ethics Committee - about Oct 2001

Hi Vinny,

I will take a look through the SREP archives tomorrow and see if I can find anything – I joined the Uni in 2007, so it's well before my time.

I will get back to you tomorrow.

Regards,

A Person

University of Huddersfield,

Queensgate,

Huddersfield.

HD1 3DH.

From: Vincent Finn

Sent: 18 October 2011 15:59

To: Kirsty

Cc: Peter Bradshaw; Vincent Finn

Subject: FW: University Research Ethics Committee - about Oct 2001

Hi A,

Please have a look at the request below. Could you please send me a copy, if possible, of the University Research Ethics Committee clearance letter. I was cleared by the committee in approx Oct 2001 when P. ? was here – very well know in HHS re: ethics (retired about 2 yrs ago). I was cleared at the time and I need a copy of the letter for the PhD thesis, if possible. I cannot find my own copy

Regards

Vinny

Vincent Finn

Senior Lecturer,

University of Huddersfield,

Queensgate,

Huddersfield,

HD1 3DH.

From: Vincent Finn

Sent: 18 October 2011 15:26

To: 'XXXXXXXXX'

Cc: Peter Bradshaw; Vincent Finn

Subject: re Local Research Ethics Committee (LREC) – approx. Dec 2001

Hi Jane,

This request is related to 'a person' (some time ago now) who was a Senior Nurse in X location around that time in charge of research ethics, quality, governance etc. Do you

hold any of her records as I am looking for a copy of the clearance letter re: ethics clearance to do a PhD? Everything was passed at the time, I just need a copy of the letter for the PhD thesis. I would imagine that LREC would keep some track record of permission granted to do research. If you have no record, could you please let me know who leads out on the LREC for X location?

I have already spoken to B. in 'Nurse Management' at X location who has referred me to you. She is unable to help me.

Many Thanks

Vinny

APPENDIX X: PATIENT CONSENT FORM

THE IMPACT OF A CARDIAC REHABILITATION PROGRAMME ON THE QUALITY OF LIFE OF OLDER PATIENTS WITH CHD (MI/CABG/PCI)

PATIENT CONSENT FORM

Please read this form carefully

Researcher: **Vincent Finn**

Organisation: **University of Huddersfield**

This form is for my records to confirm that you voluntarily give consent to be interviewed and for me to use relevant medical/nursing information collected on your records as part of this research study. If you feel unable to complete any parts or have further questions please discuss them with the researcher.

The research project being undertaken has been fully explained to me. Yes No
In addition a leaflet has been provided. I have read and understood this.

I have been given the opportunity to ask questions and to discuss the study. Yes No

I understand that any information shared with the researcher shall remain confidential, unless what you disclose is considered harmful to yourself or to others, and that I shall not be identified in any report, publication or by any other presentation resulting from this research. Yes No

I understand that I am free to withdraw from the study at any time, without giving any reason, and without affecting any current or future medical care Yes No

I agree to allow the researcher to tape record my interview and to collect relevant medical/nursing information from my records as part of the research study (tapes will be erased once they has been written onto paper).

I agree to the researcher taking fieldnotes during the interview process and I agree to take part in this study

SIGNATURE OF PARTICIPANT Date.....

NAME OF PARTICIPANT (Capitals)

I, Vincent Finn (the researcher performing this study and therefore seeking this person's consent) have fully explained the nature and purpose of this research study and I declare that the above named person has given their consent to participate in this study of their own free will.

SIGNATURE OF RESEARCHER

APPENDIX XI: McNEW'S QOL TOOL AFTER AN MI (QLMI SCALE)

Source: (Hillers et al 1994)

This questionnaire is designed to find out how you have been feeling during the last 2 weeks. The questions that you will be asked all relate to problems or feelings that patients often have after a heart attack. You will be asked about some of the symptoms you may have experienced, how tired you have been feeling and how your mood has been.

1. How much time during the last two weeks have you felt frustrated, impatient or angry? Please indicate how often you have felt frustrated, impatient or angry by choosing one of the following options: (BLUE CARD)
2. How often during the last two weeks have you felt worthless or inadequate? (BLUE CARD)
3. In the last two weeks, how much time did you feel very confident and sure that you could deal with your heart problem? (YELLOW CARD)
4. In general how much of the time did you feel discouraged or down in the dumps during the last two weeks? (BLUE CARD)
5. How much of the time during the last two weeks did you feel relaxed and free of tension? (YELLOW CARD)
6. How often during the last two weeks have you felt worn out or low in energy? (BLUE CARD)
7. How happy, satisfied, or pleased have you been with your personal life during the past two weeks? (GREY CARD)
8. How often during the last two weeks have you felt restless, or as if you were having difficulty trying to calm down? (BLUE CARD)
9. How much shortness of breath have you experienced during the last two weeks while doing your day-to-day physical activities? (GREEN CARD)
10. How often during the last two weeks have you felt tearful, or like crying? (BLUE CARD)

11. How often during the last two weeks have you felt as if you are more dependent than you were before the heart attack? (BLUE CARD)
12. How often during the last two weeks have you felt you were unable to do your usual social activities, or social activities with your family? (BLUE CARD)
13. How often during the last two weeks have you felt as if others no longer have the same confidence in you as they did before the heart attack? (BLUE CARD)
14. How often during the last two weeks have you experienced chest pains while doing your day-to-day activities? (BLUE CARD)
15. How often during the last two weeks have you felt your heart problem limited or interfered with sexual intercourse? (BLUE CARD)
16. How often during the last two weeks have you felt unsure of yourself or lacking in self-confidence? (BLUE CARD)
17. How often during the last two weeks have you been bothered by aching or tired legs? (BLUE CARD)
18. During the last two weeks how much have you been limited in doing sports or exercise as a result of your heart problem? (PINK CARD)
19. How often during the last two weeks have you felt apprehensive or frightened? (BLUE CARD)
20. How often during the last two weeks have you felt dizzy or lightheaded? (BLUE CARD)
21. During the last two weeks how much have you been restricted or limited as a result of your heart problem (PINK CARD)
19. How often during the last two weeks have you felt apprehensive or frightened? (BLUE CARD)
20. How often during the last two weeks have you felt dizzy or lightheaded? (BLUE CARD)
21. During the last two weeks how much have you been restricted or limited as a result of your heart problem? (PINK CARD)
22. How often during the last two weeks have you felt unsure as to how much exercise or physical activity you should be doing? (BLUE CARD)
23. How often during the last two weeks have you felt as if you are no longer a real man/woman? (BLUE CARD)
24. How often during the last two weeks have you felt as if your family is being overprotective towards you? (BLUE CARD)

25. How often during the last two weeks have you felt as if you were a burden on others? (BLUE CARD)
26. How often during the last two weeks have you felt you could manage your chest pain or discomfort when, or if, it occurred? (YELLOW CARD)

Domains

Symptoms: 6, 9, 14, 17, 20

Restriction: 12, 15, 18, 21

Confidence: 3, 19, 22, 24, 26

Self-esteem: 2, 11, 13, 16, 23, 25

Emotion: 1, 4, 5, 7, 8, 10

Response options

BLUE CARD

1. ALL OF THE TIME
2. MOST OF THE TIME
3. A GOOD BIT OF THE TIME
4. SOME OF THE TIME
5. LITTLE OF THE TIME
6. HARDLY ANY OF THE TIME
7. NONE OF THE TIME

YELLOW CARD

1. NONE OF THE TIME
2. A LITTLE OF THE TIME
3. SOME OF THE TIME
4. A GOOD BIT OF THE TIME
5. MOST OF THE TIME
6. ALMOST ALL OF THE TIME
7. ALL OF THE TIME

GREY CARD

1. VERY DISSATISFIED, UNHAPPY MOST OF THE TIME
2. GENERALLY DISSATISFIED, UNHAPPY
3. SOMEWHAT DISSATISFIED, UNHAPPY
4. GENERALLY SATISFIED, PLEASED
5. HAPPY MOST OF THE TIME
6. VERY HAPPY MOST OF THE TIME
7. NONE OF THE TIME

GREEN CARD

1. EXTREME SHORTNESS OF BREATH
2. VERY SHORT OF BREATH
3. QUITE A BIT OF SHORTNESS OF BREATH
4. MODERATE SHORTNESS OF BREATH
5. SOME SHORTNESS OF BREATH
6. A LITTLE SHORTNESS OF BREATH
7. NO SHORTAGE OF BREATH

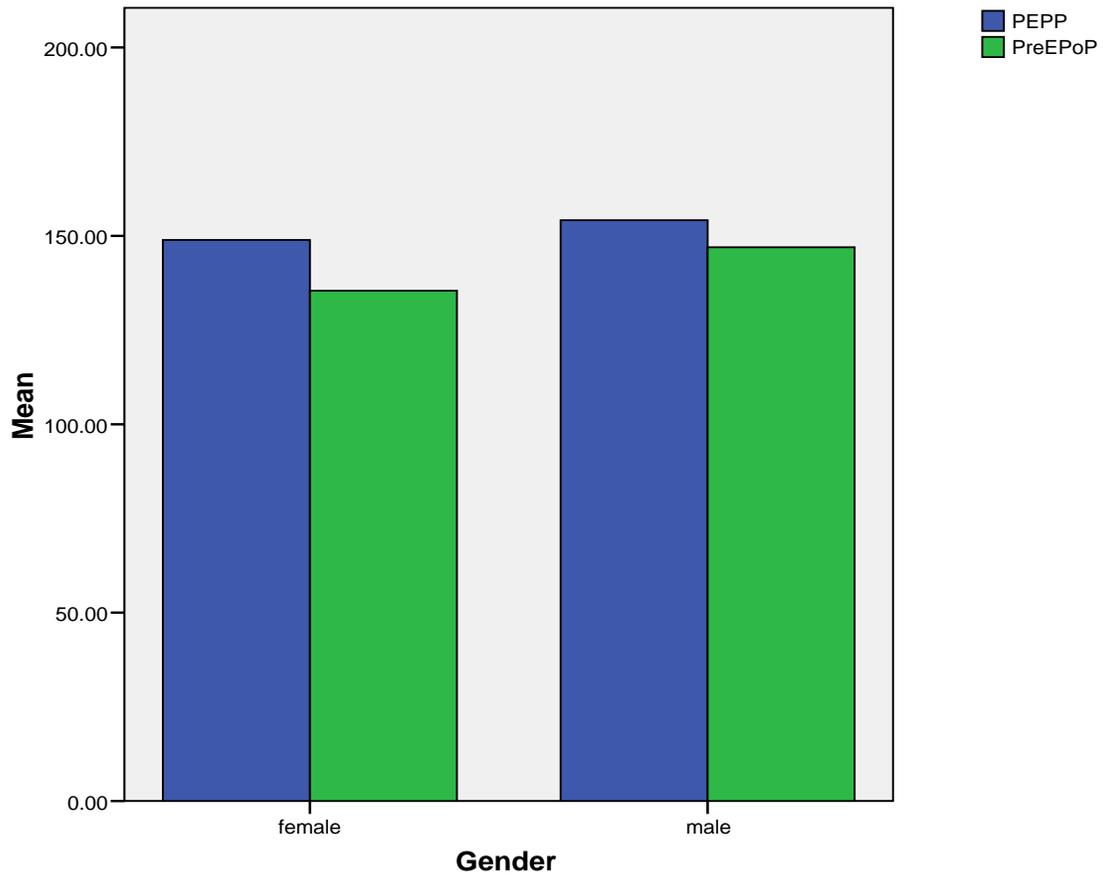
PINK CARD

1. EXTREMELY LIMITED
2. VERY LIMITED
3. LIMITED QUITE A BIT
4. MODERATELY LIMITED
5. SOMEWHAT LIMITED
6. LIMITED A LITTLE
7. NOT LIMITED

APPENDIX XII: 1(A) SYSTOLIC BLOOD PRESSURE (SBP) BY GENDER:

BAR GRAPH

BAR (GROUPED) = MEAN (PreSysBP) v (PostSysBP) by Gender



{Key = (PEPP = pre exercise pre programme)

(PreEPoP = pre exercise post programme)

DESCRIPTIVE STATISTICS - MEAN (PreSysBP) v (PostSysBP) by Gender

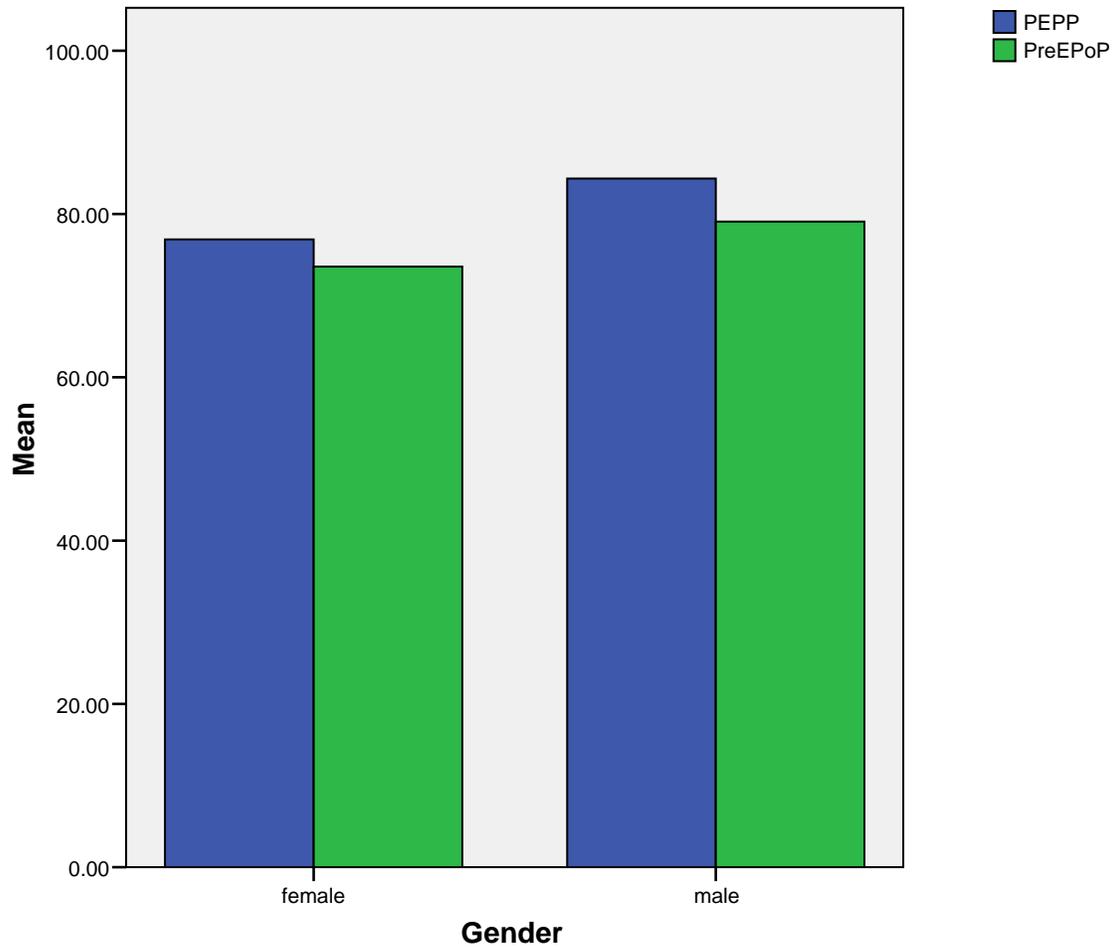
	N	Minimum	Maximum	Mean	Std. Deviation
PEPP	35	100.00	193.00	152.8000	20.88033
PreEPoP	35	98.00	194.00	144.0000	20.62694
Valid N (listwise)	35				

Paired Samples T Test (PreSysBP) v (PostSysBP) by Gender

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		Mean	Std. Deviation	Std. Error Mean
		Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Pair 1	PEPP - PreEPoP	8.80000	18.14128	3.06644	2.56825	15.03175	2.870	34	.007

APPENDIX XIII: 1(B) DIASTOLIC BLOOD PRESSURE (DBP) BY GENDER:

BAR CHART (GROUPED) = MEAN (PreDiasBP) MEAN (PostDiasBP) by Gender



DESCRIPTIVE STATISTICS - MEAN (PreDiasBP) MEAN (PostDiasBP) by Gender

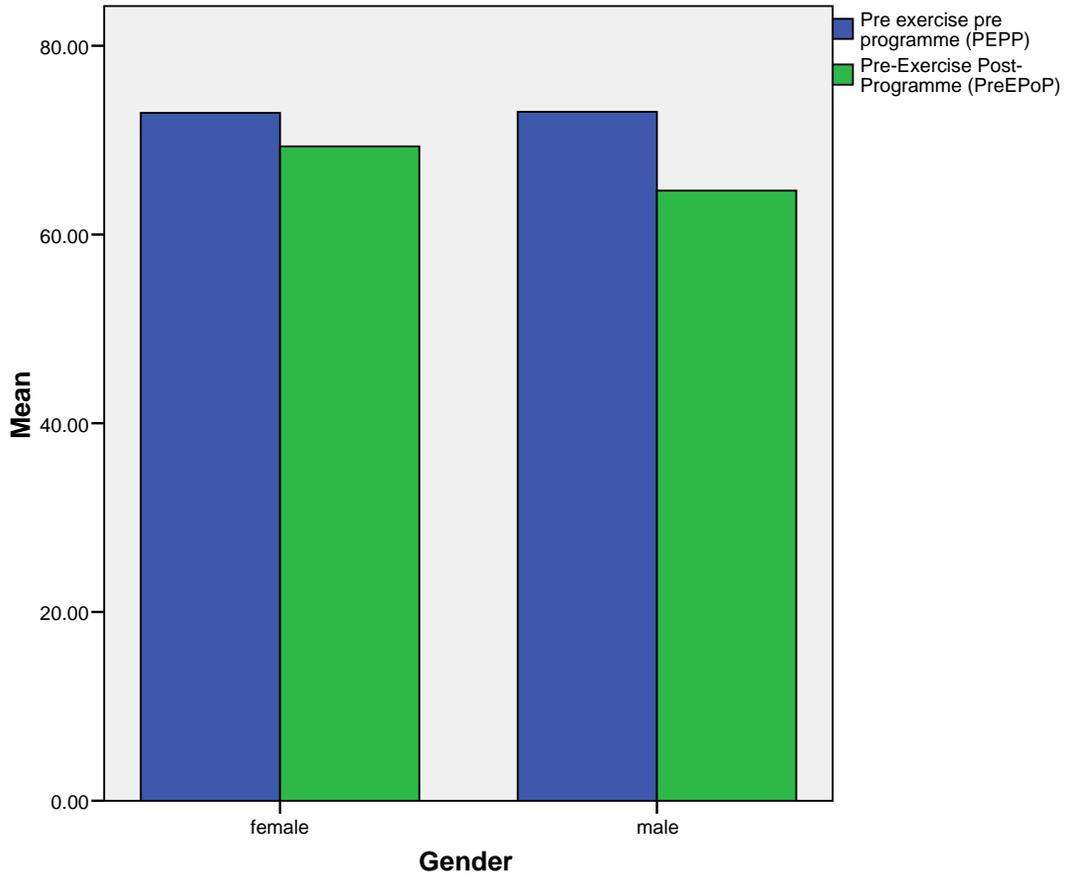
	N	Minimum	Maximum	Mean	Std. Deviation
PEPP	35	62.00	101.00	82.4286	10.48889
PreEPoP	35	49.00	100.00	77.6571	12.74396
Valid N (listwise)	35				

Paired Samples Test - MEAN (PreDiasBP) MEAN (PostDiasBP) by Gender

	Paired Differences						t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		Mean	Std. Deviation	Std. Error Mean	
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	
Pair 1 PEPP – PreEPoP	4.77143	10.37272	1.75331	1.20828	8.33458	2.721	34	.010	

APPENDIX XIV: 1(C) HEART RATE BY GENDER:

BAR GRAPH (GROUPEd) = (PreHR) v (PostHR) by Gender



DESCRIPTIVE STATISTICS - PreHR v PostHR

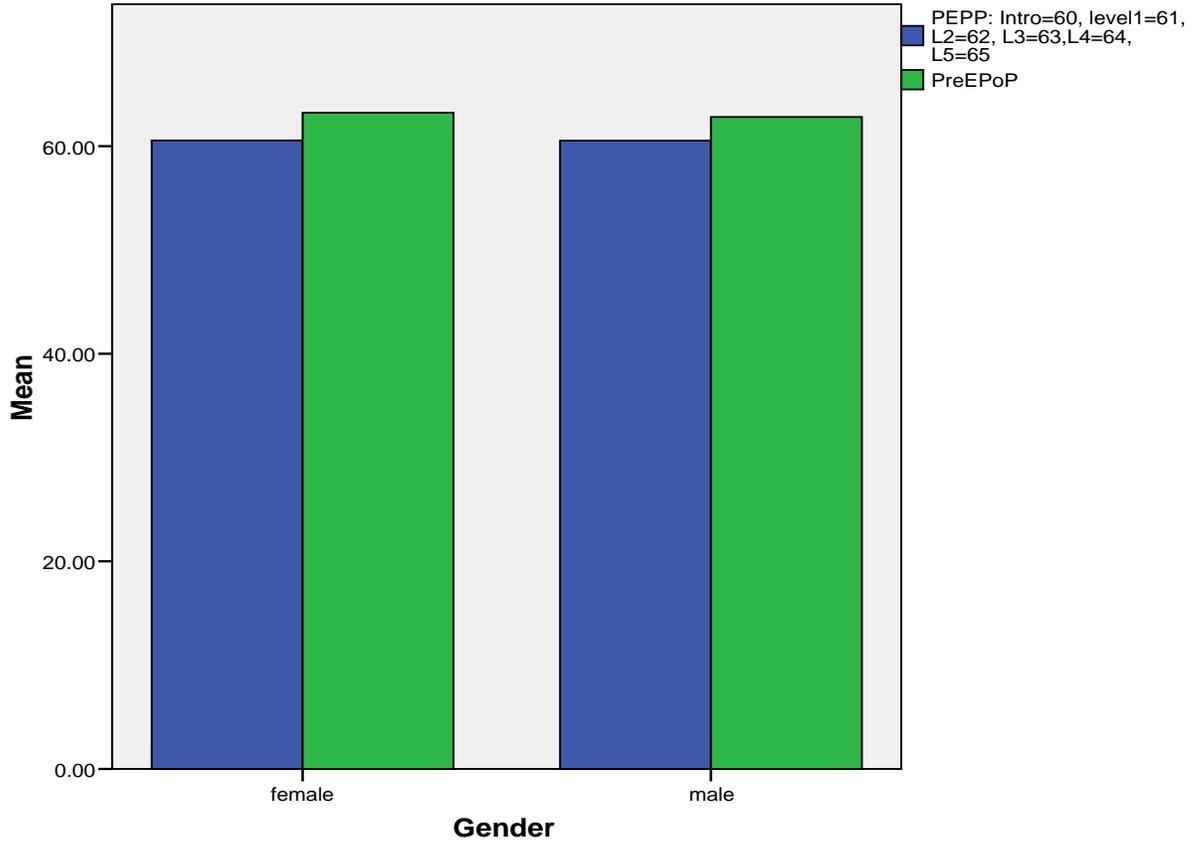
	N	Minimum	Maximum	Mean	Std. Deviation
Pre exercise pre programme (PEPP)	35	42.00	98.00	72.9714	14.23435
Pre-Exercise Post-Programme (PreEPoP)	35	44.00	97.00	65.8571	12.22135
Valid N (listwise)	35				

Paired Samples T-Test - PreHR v PostHR

	Mean	Std. Deviation		Std. Error Mean		95% Confidence Interval of the Difference		Mean	Std. Deviation		Std. Error Mean			
		Lower	Upper	Lower	Upper	Lower	Upper		Lower	Upper				
Pair 1 Pre exercise pre programme (PEPP) - Pre-Exercise Post-Programme (PreEPoP)	7.11429		11.60317		1.96129		3.12846	11.10011		3.627		34		.001

APPENDIX XV: 1(D) AEROBIC EXERCISE BY GENDER:

BAR GRAPH (GROUPED) = MEAN (PreExer) MEAN (PostExer) BY Gender



DESCRIPTIVE STATISTICS: VARIABLES = PreExer v PostExer BY Gender

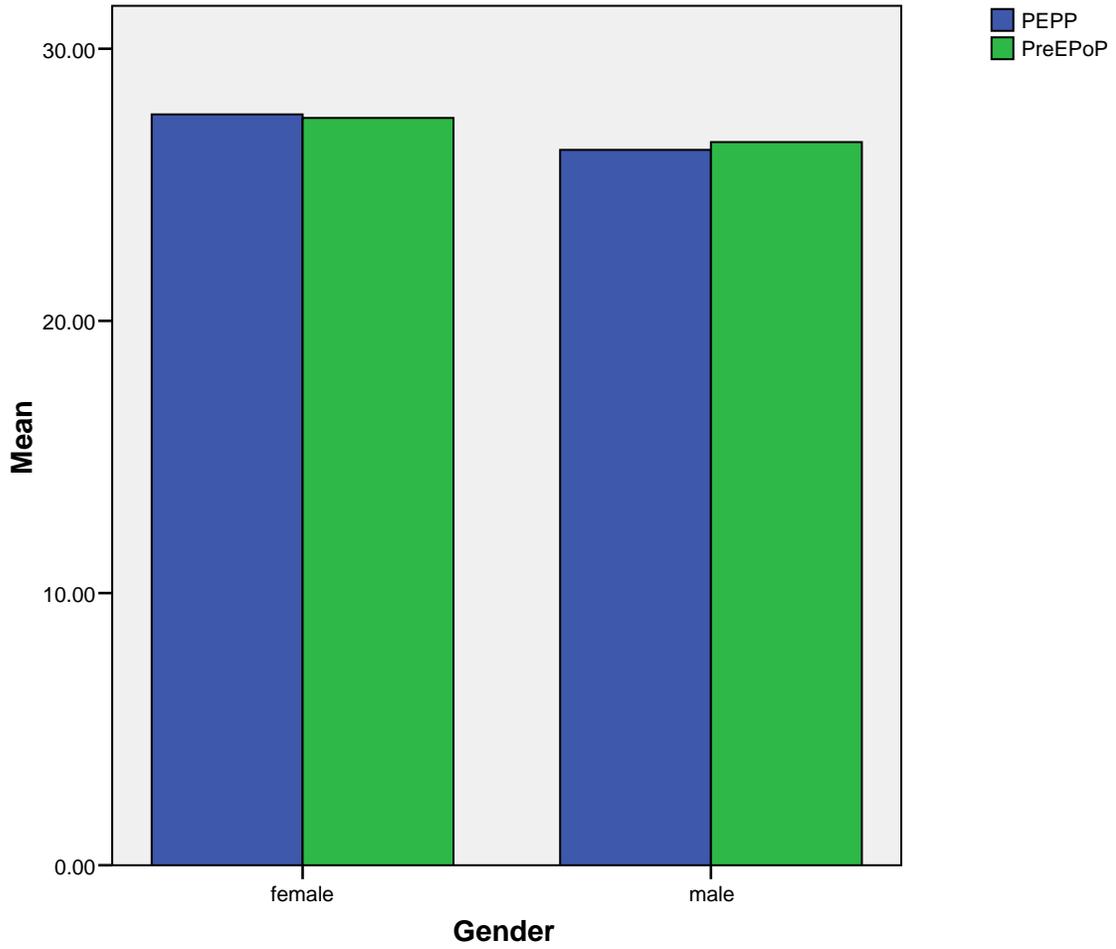
	N	Minimum	Maximum	Mean	Std. Deviation
PEPP: Intro=60, level1=61, L2=62, L3=63,L4=64, L5=65	35	60.00	61.00	60.5429	.50543
PreEPoP	35	61.00	66.00	62.9143	1.29186
Valid N (listwise)	35				

T-TEST = PreExer v PostExer (Paired)

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		Mean	Std. Deviation	Std. Error Mean
		Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Pai r 1	PEPP: Intro=60, level1=61, L2=62, L3=63,L4=64, L5=65 - PreEPoP	-2.37143	1.28534	.21726	-2.81296	-1.92990	-10.915	34	.000

APPENDIX XVI: 1(E) BODY MASS INDEX (BMI) BY GENDER:

BAR GRAPH (GROUPED) = (PreBMI) v (PostBMI) by Gender



Descriptive Statistics: Variables = PreBMI v PostBMI

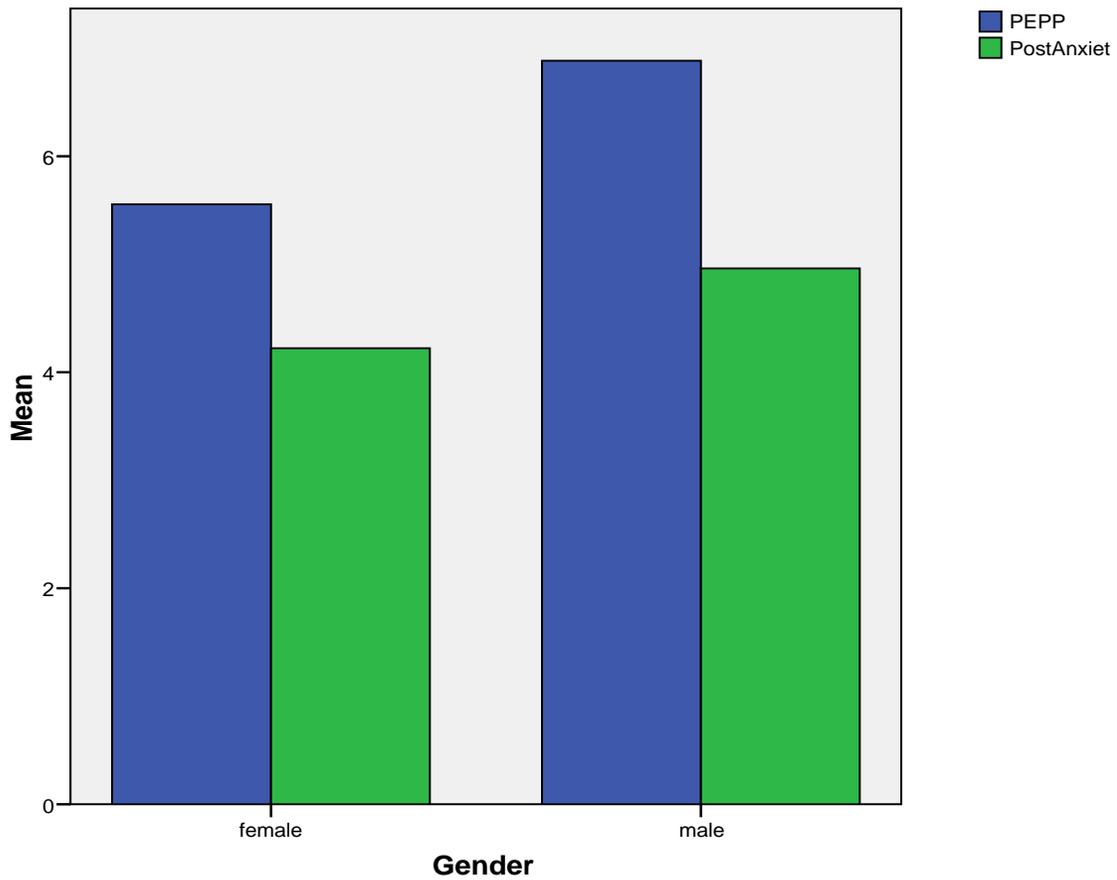
	N	Minimum	Maximum	Mean	Std. Deviation
PEPP	35	19.60	33.20	26.6200	3.15444
PreEPoP	35	19.60	37.40	26.8000	3.50596
Valid N (listwise)	35				

Paired Samples T-Test: VARIABLES = PreBMI v PostBMI by Gender

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		Mean	Std. Deviation	Std. Error Mean
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
PEPP - Pair 1 PreEPoP	-.18000	1.36485	.23070	-.64884	.28884	-.780	34	.441

APPENDIX XVII: 1(F) HOSPITAL ANXIETY and DEPRESSION SCALE (HADS) – ANXIETY COMPONENT

BAR GRAPH (GROUPED) = MEAN (PreAnxiety) v (PostAnxiet) by Gender



Paired Samples T Test- MEAN (PreAnxiety) v (Post Anxiety) by Gender

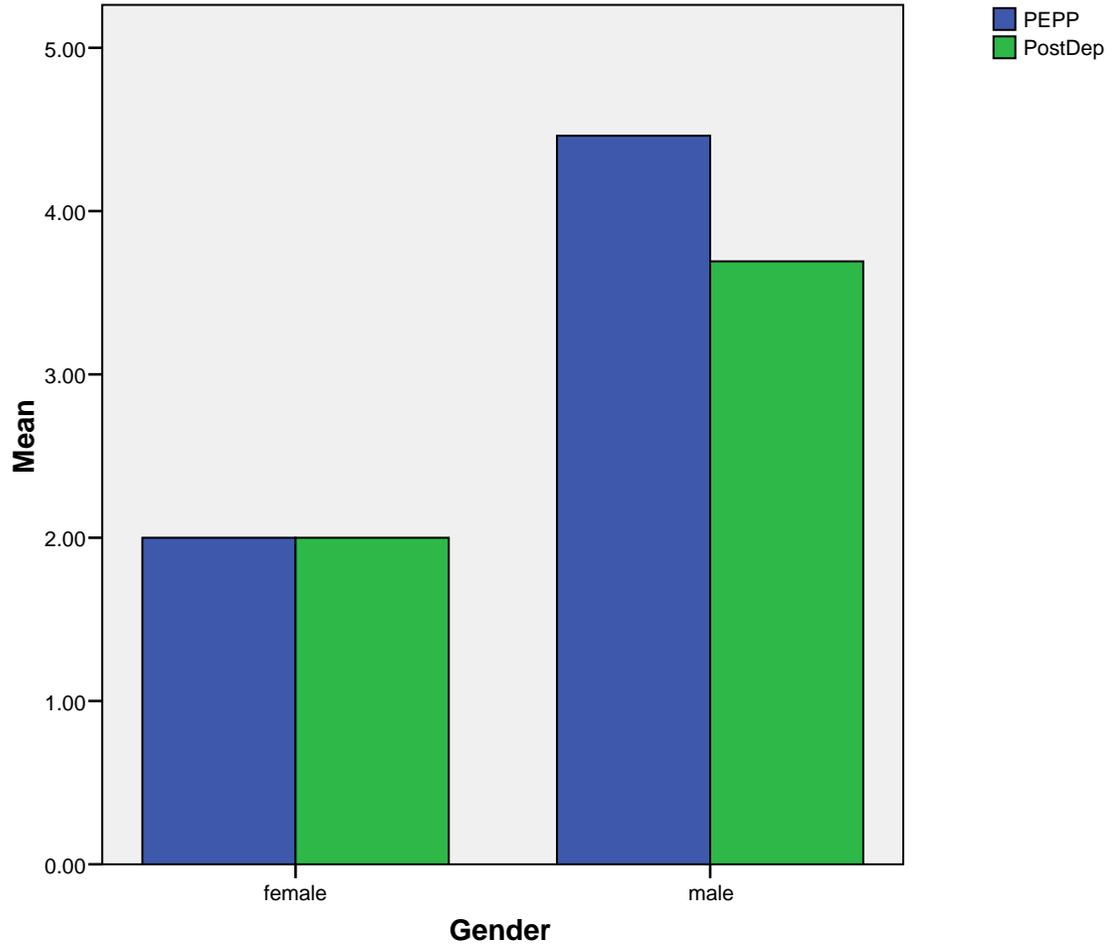
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		Mean	Std. Deviation	Std. Error Mean
		Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Pair 1	PEPP - PostAn	1.77143	2.90117	.49039	.77484	2.76802	3.612	34	.001

Descriptive Statistics - MEAN (PreAnxiety) v (PostAnxiety) by Gender

	N	Minimum	Maximum	Mean	Std. Deviation
PEPP	35	.00	13.00	6.5429	3.38980
PostAnxiety	35	.00	9.00	4.7714	2.26334
Valid N (listwise)	35				

APPENDIX XVIII: 1(G): HADS SCALE – DEPRESSION COMPONENT:

BAR GRAPH (GROUPED) = (PreDep) v (PostDep) by Gender



Paired Samples T Test - (PreDep) v (PostDep) by Gender

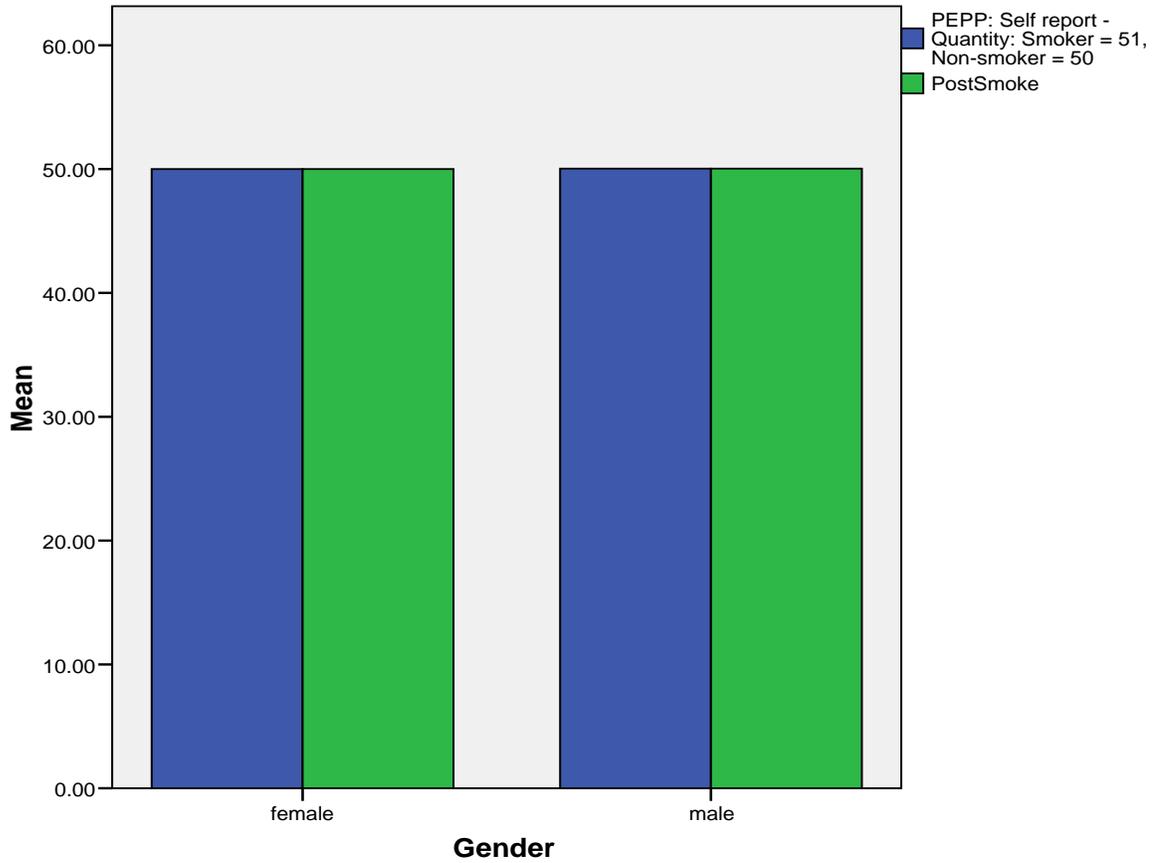
	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		Mean	Std. Deviation	Std. Error Mean
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Pair 1 PEPP - PostDep	.57143	2.52384	.42661	-.29554	1.43840	1.339	34	.189

Descriptive Statistics - PreDep) v (PostDep) by Gender

	N	Minimum	Maximum	Mean	Std. Deviation
PEPP	35	.00	9.00	3.8286	2.65115
PostDep	35	.00	8.00	3.2571	2.35575
Valid N (listwise)	35				

**APPENDIX XIX: 1 (H) SELF-REPORTED TOBACCO/CIGARETTE SMOKING
QUANTITY PER DAY:**

BAR GRAPH (GROUPED) = (PreSmoke) v (PostSmoke) by Gender



Descriptive Statistics: PreSmoke v PostSmoke (PAIRED)

	N	Minimum	Maximum	Mean	Std. Deviation
PEPP: Self report - Quantity: Smoker = 51, Non-smoker = 50	35	50.00	51.00	50.0286	.16903
PostSmoke	35	50.00	51.00	50.0286	.16903
Valid N (listwise)	35				

PAIRED T-TEST = PreSmoke v PostSmoke (PAIRED)

Warnings

<p>The Paired Samples Correlations table is not produced. The Paired Samples Test table is not produced.</p>
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Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 PEPP: Self report - Quantity: Smoker = 51, Non-smoker = 50	50.0286(a)	35	.16903	.02857
PostSmoke	50.0286(a)	35	.16903	.02857

A) The correlation and t cannot be computed because the standard error of the difference is 0.

APPENDIX XX: QUALITATIVE DATA ANALYSIS: CARDIAC HEALTH CARE PROFESSIONALS (CHCP's)THEMATIC ANALYSIS:

Comprehending and Synthesizing phases (Field and Morse 2002) and 6 sequential practical steps – (adaptations Burnard 1991, Braun and Clarke 2006 – ‘BBC’ framework)

1. Transcription of 'each' CHCP transcript *ad verbatim*.
2. Re-read '*each*' CHCP interview transcript and full CHCP data set and make notes.
3. (a) Perform open coding of concepts/items of '*each*' entire patient transcript (i.e. use of different colour codes for each question, underline/highlight concepts e.g. Q1 blue, Q2 purple and so forth. (b) Tag/label identified codes (i.e. assign meanings to words/concepts phrases, paragraphs and underline/highlight concepts and make notes.
4. Collate concepts, items and code cluster 'amongst' CHCPs.
5. Create categories and over-arching sub-themes 'amongst' CHCPs - look for conceptual links, patterns, relationships, connectivity between code categories and sub-themes.
6. Summary, re-view, reduce, & finalise over-arching sub-themes and themes '*amongst*' CHCPs.

(Main RQ 2): “What are CHCP’s perceptions of the impact of the CRP on the older patient’s QOL who suffers from a cardiac event (MI/CABG/PCI)”?

Sample = Non-random purposive sample -10 CHCP’s (Dr’s, Nurses, Physiotherapists). **Note:** 6 CHCPs from a total of10 shown in table below (i.e. 2 Senior Nurses, 2 Doctors, and 2 Physiotherapists).

Re: Q1: Semi-structured interview questionnaire: (1hr - audio-taped recorded interview): “*Meaning of QOL to you as a CHCP?*” (i.e. well-being, happiness, life satisfaction, how you feel about your life?)

Thematic Analysis using identified frameworks (see below points 1 - 6).	<u>CHCP 1</u> Senior Nurse	<u>CHCP 2</u> Dr (GP)	<u>CHCP 3</u> Junior Physiotherapist	<u>CHCP 4</u> Senior Nurse	<u>CHCP 5</u> Senior Dr	<u>CHCP 6</u> Senior Physiotherapist
1.Transcription of <u>each</u> CHCP transcript.	Each CHCP interview transcript was transcribed <i>ad verbatim</i> by the researcher – close attention to the data; early knowledge and familiarisation of the data; informs early stages of analysis; read each CHCP transcript carefully; read the entire CHCP data set carefully; researcher immersion in the data; familiarisation with breadth and depth of content.					

<p>2. Re-read ‘each’ CHCP transcript and ‘full’ CHCP data set: make notes.</p>	<p>Further data immersion; re-read each transcript and the entire CHCP data set and begin search for meanings and patterns; make notes and mark ideas for coding.</p>					
<p>3. (a) Perform open coding of concepts / items of each entire CHCP transcript (i.e. use of different colour codes for each question (Q1 – green); and (b) Tag/label identified codes.</p>	<p><u>Green Colour Coded Concepts (GCCC) =</u> QOL – personal; Independence; good health; financial security; having purpose; safe & happy family.</p>	<p><u>GCCC = QOL –</u> independence; ability to self care; carrying out activities of living; physical activity and mobility; to make a choice; enjoyment; independence; freedom; absence/minimum of medication (“poisons”) side-effects (e.g. ACE inhibitors, B blockers); if present – negative QOL (e.g. tired, impotence, persistent cough); cardiac complications</p>	<p><u>GCCC =QOL –</u> Enjoyment (good friends, family life - support); activities of daily living; hobbies; good health; being happy; active role in society; choices (e.g. “to see family when I want to”.</p>	<p><u>GCCC =QOL –</u> Self –achievement in life: self –fulfilment; different QOL for different people; QOL individualistic; health; wealth; happiness; contentment; caring for grandchildren</p>	<p><u>GCCC =QOL –</u> Functional or physical well-being; psycho-social well-being; activities of living; leisure activities; restrictions of activities re: cardiac problems – negative QOL; good family/friends relationships.</p>	<p><u>GCCC =QOL –</u> “Doing things you want to”; happiness; QOL components different from person to person; leisure activities; watching sport; happy family life; happy working life if not retired.</p>

		(e.g. cardiac insufficiency – breathless and tired – negative QOL.				
4. Collate concepts, items and code cluster ‘amongst’ CHCPs.	<p>QOL – personal concept; independence; good health; financial security; safe and happy family; ability to self care; carrying out activities of living; physical activity and mobility; to make choices; enjoyment, freedom; watching sport; absence/ minimum of medication (“<i>poisons</i>”) side-effects; cardiac complications (e.g. cardiac insufficiency – breathless and tired – negative QOL); hobbies; active role in society; self –achievement/fulfilment/purpose in life: happiness/ contentment; caring for grandchildren; ; psycho-social well-being; QOL components different from person to person; happy working life if not retired.</p>					
5. Create categories and subthemes ‘amongst’ CHCPs.	<p>QOL – personal and individual concept; mental, physical and social health: freedom and independence; ability to make and carry out choices; perform activities of daily living (ADL’s); family relationships (adult children and grandchildren); financial security/sufficient wealth; minimum cardiac complications and side-effects from medication; self-fulfilment - active role in society.</p>					
6. Summarise, re-view, reduce, and finalise overarching sub-themes and	<p style="text-align: center;"><u>QOL</u></p> <p><u>Physical health</u> – ADL’s and mobility; absent/ minimum cardiac complications and side-effects from medication.</p> <p><u>Psychological/mental health</u> - freedom, independence, choices, self-fulfilment.</p>					

themes <u>'amongst'</u> CHCPs.	<p><u>Socio-economic health</u> – family relations, hobbies, finance, active role in society.</p> <p><i>Please see table re: data analysis of 'cardiac patient transcripts 're: merging of sub-themes and themes between CHCPs and cardiac patients generated for the construction of the QOL model.</i></p>
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APPENDIX XXI: QUALITATIVE DATA ANALYSIS: CARDIAC PATIENT INTERVIEWS: THEMATIC ANALYSIS: Comprehending and Synthesizing phases (Morse and Field 2002) and five sequential practical steps – (adaptations from Burnard (1991), Braun and Clarke (2006) – 'BBC' framework.

1. Transcription of 'each' patient transcript *ad verbatim*

2. Re-read 'each' cardiac patient transcript and full patient data set make notes.

3. (a) Perform open coding of concepts/items of 'each' entire patient transcript (i.e. use of different colour codes for each question, underline/highlight concepts e.g. Q1 blue, Q2 purple and so forth. (b) Tag/label codes (i.e. assign meanings to words, phrases, paragraphs, underline/highlight concepts and make notes.

4. (a) Collate concepts 'amongst' cardiac patients; (b) collate concepts "amongst" CHCPs; (c) collate concepts and form code clusters 'between' cardiac patients and CHCPs; and finally, (d) create categories and over-arching sub-themes 'between' both groups - look for conceptual links, patterns, relationships, connectivity between code categories and sub-themes.

5. Summarise, re-view, reduce, & finalise over-arching sub-themes and themes 'between' CHCPs and cardiac patients.

(Main RQ 3): “How does an older cardiac patient, enrolled on a CRP, define QOL in relation to their cardiac event (MI/CABG/PCI)”?

Sample = Non-random purposive sample – 7 cardiac patients (MI/CABG/PCI). **Note:** 6 from 7 patients shown in table below diagnosed with MI and CABG and PCI.

Re: Q1:Semi-structured interview questionnaire (1hr - audio-taped recorded interview):

“What does Quality of Life (QOL) mean to you now after you have had your heart event”?

(i.e. heart attack, angioplasty or heart surgery?)

Thematic Analysis using identified frameworks (see below)	<u>Patient 1</u> Kes (k) - Male, 82 yrs, Diagnosis = NSTEMI	<u>Patient 2</u> “Jean” Female, 75 yrs, Diagnosis = Angina/CABG.	<u>Patient 3</u> “Frank” - Male, 63 yrs, Diagnosis = Angina /STEMI PCI (Angioplasty with stent)	<u>Patient 4</u> ‘ Tom’ – Male, 67 yrs, Diagnosis = Angina / CABG, age 67 YRS	<u>Patient 5</u> ‘Jo’ - Female, 68 yrs, Diagnosis = STEMI with PCI (Angioplasty with Stent)	<u>Patient 6</u> ‘Majina’ - Female, 69 yrs, Diagnosis = NSTEMI with PCI (Angioplasty with Stent)
1.Transcription of ‘each’ cardiac patient transcript.	Each patient transcript was transcribed <i>ad verbatim</i> by the researcher – close attention to the data; early knowledge and familiarisation of the data; informs early stages of analysis; read ‘each’ patient transcript; read the entire patient data set carefully; researcher immersion in the data; familiarisation with breadth and depth of content.					

2. Re-read each transcript and make notes	Further data immersion; re-read each transcript and the entire CHCP data set; begin search for meanings and patterns; make notes and mark ideas for coding.					
3. (a). Open coding of entire patient transcript with different coloured typing/pens, underline or highlight concepts. (e.g. Q1 blue, Q2 purple and so forth). (b). Tag/label codes (i.e.	<u>QOL</u> – “It (<i>heart attack</i>) has curbed what we do e.g. can’ go abroad anymore (health, age insurance costs, waiting at airports and stress) – this is the only part of my life that has been	<u>QOL</u> – “I appreciate life much better now; you worry about complications after such major surgery; I am enjoying life now; every day is different and exciting now; important to look after yourself for a	<u>QOL</u> – “More important than ever now; appreciate life much more; realise the fallibility of life - now after going through this; family life very important to me (looking after my son, my wife died a coupla’	<u>QOL</u> – “Doing things you did before operation e.g. moving about the house and walking, shopping, gardening”; QOL- not as good as before operation e.g. walking but steadily getting better since	<u>QOL</u> – “I had horrendous chest pain with the heart attack; shoulder and back pain; I was given painkillers in hospital, the whole thing was a bit of a blur (don’t remember much about it); I had warning signs – a smoker for 52	<u>QOL</u> – “Weak and tired since my heart attack; I lost a bit of interest in life e.g. nice clothes; very active before heart attack e.g. shopping, cleaning, gardening, helping my daughter-in-law – QOL much better

<p>assign meanings to words, phrases, paragraphs, underline and make notes.</p>	<p>affected”.</p>	<p>good QOL (not worrying excessively about paying bills) – looking after yourself mentally”.</p>	<p>years ago; enjoying life since I retired,(nice holidays, meeting friends, watching sports on TV, watching TV films; doing things you want to do and when you want)”</p>	<p>operation; QOL - getting better after course (CRP) than before; QOL – being able to get about and looking after grandchildren”</p>	<p>yrs – I have not had any since that day; after the attack, I went home and felt OK but not fantastic e.g. a heaviness in my arm but not a pain, it was related to the stent they put in: QOL – without health you are in trouble – QOL would be dreadful - it doesn't matter how much money you have; your life changes – never took tablets before apart from panadol,</p>	<p>before I got ill. Although I am hoping to pick up soon as I am getting a bit stronger; I have other health problems – you know – stomach and colon”.</p>
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					now I take 8 tablets a day”	
<p>4.(a) Collate and sort codes ‘amongst’ cardiac patients:</p>	<p><u>QOL amongst cardiac patients:</u> QOL - Appreciation of life; enjoying life socially; looking after oneself; hobbies; choices; doing normal activities; positive mental health; family relations – spouse, grandchildren; mobility and activity; positive impact on QOL after CHP; pain-free and no/minimum cardiac complications; good health; QOL changes after heart event e.g. taking medication (often for life); heart attack - negative impact on QOL (tired, fatigue, loss of interest); co-morbidity – negative impact on QOL.</p>					
<p>(b) Collate, and sort codes ‘amongst’ ‘CHCPs:</p>	<p><u>QOL amongst CHCPs:</u> QOL – Personal and individual concept; mental, physical and social health: freedom and independence; ability to make and carry out choices; perform activities of daily living (ADL’s); family relationships (adult children and grandchildren); financial security/sufficient wealth; minimum cardiac complications and side-effects from medication; self-fulfilment - active role in society</p>					
<p>(c) Collate concepts and form code clusters ‘between’ cardiac patients and CHCPs;</p>	<p><u>Between cardiac patients and CHCPs:</u> QOL - Appreciation of life; enjoying life socially; looking after oneself; hobbies; choices; doing normal activities; positive mental health; family relations – spouse, grandchildren; mobility and activity; positive impact on QOL after CHP (confidence); pain-free and no/minimum cardiac complications; good health; QOL changes after heart event e.g. taking medication (often for life); heart attack - negative impact on QOL (tired, fatigue, loss of interest); co-morbidity – negative impact on QOL.</p>					

<p>(d) Create categories and over-arching sub-themes '<u>between</u>' both groups.</p>	<p>QOL – personal and individual concept; mental, physical and social health: freedom and independence; ability to make and carry out choices; perform activities of daily living (ADL's); family relationships (adult children and grandchildren); financial security/sufficient wealth; minimum cardiac complications and side-effects from medication; self-fulfilment - active role in society.</p> <p>Ability to perform ADL's; freedom and independence; making choices; pain-free / no or minimum cardiac complications, no/minimum drug side effects; physical mobility; mental health and well-being; family relationships and friends; ability to self-care; social enjoyment – individual hobbies; positive impact of CRP (confidence); heart attack and co-morbidity – negative QOL; QOL- personal and individual; financial security; self-fulfilment and appreciation of life.</p>
<p>5. Summarise, re-view, reduce, and finalise over-arching sub-themes and themes '<u>between</u>' CHCPs and cardiac patients.</p>	<p><u>QOL</u>: personal and individual concept, different dimensions, defined by the individual.</p> <p><u>QOL: physical health and symptoms</u>: Ability to self-care, mobility and carrying out ADL's; absent/minimum cardiac complications (e.g. heart failure/angina); absent/minimum side-effects from medication: pain-free where possible or medically well-controlled.</p> <p><u>QOL: psychological health</u>: Mental well-being and contentment; freedom; independence; choices; self-fulfilment; greater confidence after cardiac rehabilitation; learning to manage co-morbidity and develop coping strategies to manage tiredness and fatigue post 'heart attack' (MI).</p> <p><u>QOL: socio-economic 'health'</u>: Close family relationships and friendships; pursuit of individual hobbies/past-times; financial security ("<i>enough money</i>", not necessarily wealth); some useful role in society on retirement (e.g. helping others, voluntary work).</p>

	<p>cond't</p>
<p>Theorizing and triangulating the quantitative and qualitative data (Field & Morse 2002).</p>	<p>Methodological triangulation – i.e. '<i>between-method</i>' variant of triangulating quantitative and qualitative data by a three-fold approach designed to combine the research findings of the study.</p> <p>These included:</p> <ul style="list-style-type: none"> (i) Use of the four research questions of the research study (ii) Triangulation or integrative themes, and (iii) The development of a new conceptual QOL framework for the older cardiac patient with an MI/CABG/PCI. <p><u>Cardiac health care professional (CHCPs) sub-themes and themes</u></p> <ul style="list-style-type: none"> - <i>Meaning and definitions of QOL: domains of physical, psychological, social and spiritual health.</i> - <i>Learning to 'live with' and to manage CHD from physical and psycho-social perspectives and patient adaptations to a changing lifestyle</i> - <i>Impact of ageing or 'becoming older' on QOL.</i> <p style="text-align: center;"><u>COMBINED WITH (+)</u></p> <p><u>Cardiac patient sub-themes and themes</u></p> <ul style="list-style-type: none"> - <i>Older cardiac patients' definitions of QOL on a CRP: domains of physical, psychological, social and spiritual 'health'.</i> - <i>Learning to live with and to manage CHD: recuperation from the cardiac event, learning to adapt to a changing lifestyle and its impact on QOL.</i>

= **Five over-arching triangulation or integrative sub-themes and themes:**

The combination of the CHCP and the cardiac patient themes generated the 'final' five remaining triangulation or integrative sub-themes and themes identified as follows:

1. *Definitions, meanings and structural elements of QOL, professional-patient holistic perspectives of QOL and the acute management of CHD.*
2. *QOL – domain of physical health, objective and subjective impact of CRP on QOL, activities of living (ADLs) – independence, autonomy and exercise.*
3. *QOL – domain of 'becoming older' and adaptation to a changing lifestyle, patient empowerment, choice and learning.*
4. *QOL – domain of psycho-social health, coping mechanisms (stoicism) and QOL as a temporal construct.*
5. *QOL – domain of leading a spiritual/religious/moral life.*

<p>QOL model ("TRIM") construction for Q1 <u>ONLY</u> re: CHCPs and Cardiac patients (see appendix?)</p>	<ul style="list-style-type: none">• <u>QOL – personal, unique, individual and multi-dimensional related to bio-psycho-social, culture, health and economic factors</u>• <u>QOL - domain of physical health.</u>• <u>QOL – domain of psychological health</u>• <u>QOL – domain of social 'health'.</u>
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APPENDIX XXII: OPEN CODING (COLOUR CODED): INTERVIEW TRANSCRIPT: SENIOR NURSE: "ROSE"

Introduction

Ok ... uuum ... I have got "Rose" (pseudonym) with me here who is a Senior Nurse for a number of years --- that's right Rose – How many years? Rose – in Cardiology in total nearly 16 years VF ...and in cardiac rehab? - that would be 9 yrs. VF – Thank you, lovely and we are clear about the purpose of the interview? ... Rose ... yes.

Semi-structured interview questionnaire

A. **Q1** – VF – Now Rose I am going to ask you, in your own opinion, purely from your own professional judgement, I would just like to know how you see QOL or what **meaning would you attach to QOL as a cardiac health professional?** Rose – I think this is a **personal question rather than you asking me about somebody else** and for me personally and I don't think you can separate a cardiac health professional with a person in a private life or personal life. But it would be **independence, good health, financial security, having purpose** and importantly that the **family are happy and safe**. VF – you are comfortable with that, you don't want to explore any more? Rose – yes, I am comfortable with that, all those things revolve around, you ask about being a cardiac health professional, it revolves around that but knowing that things are ok at home while working and vice versa is really what's important, thank you – Rose.

B. **Q2:** VF - In terms of the elements of QOL, **what elements do you think belongs to QOL as a cardiac health professional**, in other words, what are its components? Rose – QOL – people can **manage their illness, they can be independent, they can cope with stress and anxiety** and they can maintain their **hobbies and interests** as well as **take over caring roles instead of being cared for**. VF – Thank you very much Rose – so you are quite ok with that – those are the main elements ... Rose .. yes.

C. **Q3:** VF –Your meaning or **your interpretation of the meaning of QOL for an older cardiac patient**, aged 60 yrs and beyond with an MI/CABG/PCI and I am really interested in your view – how do you see their QOL? Rose – there is a **definite difference as you get older** and we are

talking into retirement age here, you asked over 60 plus and I suppose people do work for longer but we will take as **people being retired**, once you retire your **focus changes**, a lot of young people in cardiac rehab their focus is around going back to work , being the bread winner in the family, as you get older once you have retired, their focus changes so it's about **maintaining the things that people enjoy doing**, they potentially have **more leisure time** and it's about **not being able to travel or to drive which becomes a big issue, instead of the focus being around work , about looking after grand children , about maintaining independence especially when there is other co-morbidities** going on , which as you know, there's quite a lot of co-morbidities as you get older, more things happen so it's about being able to maintain what somebody was expecting in their retirement years. VF –thank you Rose, that's excellent, lovely.

D. Q4: VF –Your views on the components or **elements of QOL for an older cardiac patient**, what is it like now from the older person's perspective? Rose – It's very very different than looking after somebody who is a lot younger ..ammI have put something down here (*on paper*) that is relevant here – yeah .. It's about people when they are **older they tend to fall into a much more cared for role than being a carer** so after their retirement gender differences change as you get older so it depends very much on **somebody's relationship** if they have been **together for a long time and their beliefs and views about what it is to fall ill**, so if you become either the man or the woman who has an **MI or the bypass graft/PCI** you tend to be, sort of, **much more prepared to be cared for**. VF – very good, thank you Rose.

E. Q5: VF- The importance of **different views on QOL in terms of the patient, the health professional, the spouse** - how important are these views? Rose – yeah ...I think this is really the best question on the questionnaire and it's extremely important and one of the reasons and I think probably the reason that it's **such an individual approach** is cardiac rehab and because it's **individual views** are taken into consideration not only from the **patient themselves**, their **spouse, their carer** whoever else is their significant other, so you are looking at different expectations and that **might be different expectations within the family, beliefs, culture, and what becomes important to somebody might not be important to this other person ...** umm .. it can affect reaching potential, the **health professional** might have a **different expectation than somebody who is the patient** , you are looking at a very long period of time between what somebody used to go through in getting better and what they are going through now – the views are very very different. Again I have given an example a little bit further on

when you talk about the influence of age, we are looking at new evidence now where we are looking at maintaining physical activity, dietary changes; the old fashioned ways, and I apologise for using that, it's the only thing that I could think of, was that people went to bed when they were older when they got ill, they went to bed and rested, it's how they managed it and now of course we have **turned that on its head and we are now trying to get people more physically active and going into gyms which a lot of the older have never set foot in.** VF – very good, thank you Rose.

F. **Q6:** VF - **The importance of assessing QOL as an outcome measure** – is it an important issue for older people? Rose – **I think it's across the board I don't think it matters whether you are younger or older** – I have got 3 reasons: First – **to motivate patients** they can see an outcome, the second one would be to **provide evidence to improve quality of service provision** and I have divided this into 2 - that your **managers** will support you and keep providing the **resources that you need to run your service** and I mean these things don't run in the modern NHS without evidence and the second reason would be for your own **improvement of quality you would need to see quality of life outcomes and to see that's working or that's not working** – right we need to do something about that if its not working - so those are the 3 things really. VF – Thank you love – good points made (39.15).

G. **Q7:** VF – the influence of **age on the older cardiac patient's QOL on CRP programmes** – what influence do you feel it has? Rose – again it's about **peoples expectations**, age is **associated with taking things easy**, when you **retire from work people have expectations'** that they are going to have more **leisure time**, that's what somebody strives for you know when you have been working a lot of years and then you retire, you are expected to be able to do things that are not only **enjoyable** but are **associated with relaxation**. Umm... **they feel more vulnerable**, I think, as well the older, a lot of patients we get into the groups **don't like to travel, for example, when it is dark, patients feel vulnerable in their homes** and that's especially true when they are **isolated and living alone**, it can be a very **frightening experience** to be on your own when you trying to **recover from a bypass graft, MI. or PCI.** VF – thank you Rose indeed.

H. **Q8:** VF- The differences in **gender in older cardiac patients in how they view their QOL** – is there a differences between males and females? Rose – I think it depends on the **relationship** really, we are talking about an agenda where there is a **couple together** (male

and female), we are talking about the patient and significant other, as **they get older the lines tend to blur**, again it might be the **difference between one person who used to be the breadwinner and then 'he' is no longer working and it is much more shared** so it doesn't ...ahhh.... I will give you an example - when you have a patient who is in the late **30's/early 40's**, somebody who goes out to work is the main breadwinner in the family, that person tends to have a **very macho** approach to having their rehab sorted out, so they want to **go back to work as soon as possible**, they probably deny symptoms, they will neglect a lot of their own needs because they tend to put the **needs of their partner or family first**. In an older person, somebody who is then retired it's much much more of a **shared approach to cardiac rehab**. VF – when you mention about the male, I mean, more macho – were you talking there about males, I mean ... yeah ... Rose – predominantly. It's different for **women** , when women have a **heart attack in their younger years**, their **priority** tends to be their **family** because they are the person who does most of the **caring** as a rule, I don't mean to pigeon hole people but they tend to be the one who tends to organise things in the house even if they have got a job themselves, I am not talking about housewife here even women who are working very often take the lion's share of what goes on in the house, sometimes financially, so there are **different problems to being a man and a woman in their younger years**. As you **get older** I think that tends to **sort of blur a little bit**, so the roles are not as important they tend to **react very much in a similar way when they have a heart attack** and it tends to be because of their age and because of their leisure activities and the fact that as you get older you tend to **think about the time you have got left**, you live forever when you are younger and when you **get older of course it is a reality** and if something affects that and an MI / bypass graft certainly do, then people do react very differently to that. VF – thank you Rose.

I. **Q9: VF – The effect or the impact of lifestyle change and health promotion on the older cardiac patients QOL?** Rose – yeah ... I think the older that you are I think it becomes harder especially I think **the impact is for a lot of people it might be too late**, for **other people** it might be associated with **great anxiety**, for other people it really **depends on again their outlook**, for somebody again who is **older** they tend to think **about ways to look after themselves** a little bit better because of the **time constraints** so you are looking at making changes that tend to be permanent as you **get older** provided, of course, it's handled properly, but for a **lot of people it can become harder – I am thinking specifically of smoking** , things that become harder to get rid of .VF – thank you very much Rose.

J. Q10: VF –The **impact of exercise** whether it's in the hospital, community, or the PALS scheme on the **older patients QOL** - what's your views on that? Rose – I think they need more **encouragement to access the groups**, but once they attend I think **they feel more benefit than a lot of our younger patients**, they tend to be **more motivated** but they **have a poor uptake into phase 4 programmes**, whether or not that is because it **encroaches into some of the things that they would normally be involved with at home**, I don't know, but they tend to maintain their **own activity levels using sort of their own leisure activities** that they would normally have tapped into **on retirement** to be able to keep their **activity levels up**. I will give you an example, we have an awful lot of patients that actually like to go away in **caravans** and they will spend most of the **summer** doing that but then while they are away they will incorporate a **walking programme** which might not be something they did before so they are **maintaining their activity levels at the same time as maintaining their leisure activities** – **this is a good example and a lot of our patients do that**. VF –thank you Rose – it's interesting stuff. (15.16).

K. Q11: VF – **the impact of relaxation and stress management** – how do you feel about that and again it's the older cardiac patient perhaps versus the younger cardiac patient is probably a good comparison. Rose - yeah ... again it is where the **focus changes** whereas you get somebody **younger more focused in going back to work** and maintaining their position in the family, what tends to happen with **older people is more influenced**, I think, about **co-morbidities** whether or not they are their own, whether there's a level of **being isolated** so it does tend to be affected by other factors, I think rather than the MI /PCI/CABG ,, umm... it's important **to maintain feeling in control**, I think sometimes the **older don't have that, there is a vulnerability** about people especially when they are their own and they **fear about losing control** especially in situations such as maybe going shopping , being out in public and maybe not being able to manage to do things anymore, **fear of fainting, and that's the ultimate loss of control – isn't it ?** and a lot of our older patients because of **medicines affecting the B/P do tend to have that problem more than younger people**. VF –Do feel then Rose that relaxation has a useful benefit on the programme? Rose- I think it is but it is not something we have really tapped into, **we have sort of skirted around relaxation at the end of phase 3 exercise programme** but we have never found a way to bring that it into the programme that suits everybody, **it's never been that successful**, it's certainly **not been measured** as to whether that's been effective or not. Stress /anxiety management, we more or less handle that ourselves but we recognise when we need to bring in the professionals, we do have a **clinical**

psychologist that we can refer to now that we didn't used to do and of course **we are hoping to do the HAD scores** as well as soon as the data is up and running on our systems. VF – Thanks Rose – that's smashing. VF - By the way Rose – what do you mean about **co-morbidities** specifically related to your own experience? Rose - **It's general wear and tear**, I think about things they are more inclined to like **Diabetes, to Arthritis, to PVD, back problems** any sort of thing that might reduce their ability and then if you put an MI/CABG/PCI on top of that and further reduce it then you are going to have **problems with people coping**. VF –and that would impinge on QOL as well and make things more difficult – would you agree with that? Rose – I absolutely would as well as stopping people accessing the full range of what we can offer in cardiac rehab so it's very very important, it's one of the reasons why we do **individualised**, we don't actually look at **somebody's history** and say no good without **actually talking to that person first** and then as much as possible somebody has to be severely disabled before we can offer them really nothing. VF – right.

L. Q12: VF – **the impact of a healthy diet on the older cardiac patient's QOL** – what do you think about older people and giving them good nutritional advice? Rose – again it varies again we are talking **very older** here, a problem with getting the **right nutrition balance because of lack of appetite** so it varies from that really to somebody who has no idea of looking after themselves and it may be **a male on his own**, for example, I don't mean to be outrageous or sexist here but it does tend to happen especially if the **spouse or the wife tends to do all the cooking** which generally back in the days when they were working, **traditionally** that's what happened and because of that **they tend to eat less take-away food**, there tends to be **more fresh food prepared instead of processed food** so overall you find a significantly better dietary intake than you probably would with a young couple today working, as they tend to rely more on processed and take-out and that's actually one of the indicators that we look at that's somebody is at risk post MI/CABG/PCI – the dietary factor. There is a **huge stress element to being young and working and with a family these days** that I don't think existed a few years ago even when I first started working that didn't exist. VF –very interesting point – when you say **very older** Rose – what age group are you thinking about? Rose – I suppose you are **talking over 80 that sort of age group** and, of course, as you know **people will tend to age themselves a bit – don't they?** - and it depends on your outlook. I will give you an example and I know this is confidential but my in laws have **wanted to age themselves since the age of 55** and they couldn't wait to get on the saga holidays and get the bus pass because they just wanted to be pensioners and I know that **people like that exist partly due to their outlook**

and how you age yourself, so you could get somebody in their early 70's that would behave in that similar way you would expect to, someone who would get older would get a little more fragile – don't they? – and you would sometimes would see that , sometimes you get **very sprightly 80 yr olds, go to the gym, and doing all the sort of things they can to keep themselves healthy, to keep their bones healthy, their muscles healthy**, to make sure they are enjoying life as much as possible so there is a variation there, but usually, if you get someone **very fragile over 80 they tend to have poor appetites and it tends to be a challenge in trying to get them to eat properly** so we tend to advise, when hungry, small amounts. **Low cholesterol advice tends to be less of a problem when you are older**, if a problem occurs with your **heart when you are 70's and 80's** then it tends to be sort of **an ageing process that's caused the problem and reducing cholesterol will make very little difference to their overall risk factor so it's more important to get a balanced diet**. VF – Does this change between 60–70 yrs, would there be any difference there? Rose - The evidence for a person under 60 or say 60 over – the first time you have a heart problem is over 60's then as you push **towards the 70's then it wouldn't be the same sort of problem or an issue and with someone up to the 80's you wouldn't target these risk factors in the same way as you would in their 60's and 70's**. VF- maybe in the early 60's it might be a bit more of an issue and Rose: to be honest in their 70's as well that's taken seriously, **you wouldn't normally consider someone to have a family problem if their relative had their first episode in their 80's**. VF – Thank you Rose.

M. **Q13:** VF – Now about the **impact of stopping smoking on older people with an MI/CABG/PCI**, have you met many older people over 60 who smoke? Rose – **I tend to see more because I work in rapid access chest pain clinic and we get an awful lot of smokers in that clinic**, I don't tend to see many people on the wards anymore, so it would be very difficult for me to gauge whether or not there **was still the same level of older people smoking as there was several years ago because the times have changed**, smoking as you know, is **banned in a lot of public places** so a lot of people don't for that reason as they think of giving up and lot of them successfully do it. I don't know the impact of that and whether or not things have changed – I really haven't thought about it, but the **smokers who are still smoking have great great difficulty of giving up**. It goes two ways, **they absolutely fear giving up smoking because of boredom or stress** and the fact that they have been **smoking 50 years they think it's too late or particularly following an MI, it tends to be a sort of a wake up call not smoking any more, they find it quite easy in fact a lot easier than younger**

patients would – so it would go two ways and it depends on the individual. VF Thank you Rose, **but you have come across older people who smoke?** Rose – **I have most definitely** - again it happens in **clinic and it tends to happen with patients who have PVD**, a lot of circulatory problems and with quite **severe respiratory problems** as well. There is **an issue of being too late - why should I deprive myself of something I want to do that really at this stage it isn't going to make much difference That's what people think** . VF –Thank you.

N. **Q14:** VF- The impact of **patient information** as in verbal, written, telephone, particularly to older people in comparison again to the younger person. Rose - Again it tends to be very very **new information** and you cope better **when not given alone**, in other words when somebody is with them, I don't mean a younger person but another person and that might be the **spouse, the partner, sister, brother**, whatever, it just needs to be somebody else in the room. They seem to lose a lot of confidence in being able to receive verbal information when they are on their own. VF –Thank you, interesting.

O. **Q15:** VF – The impact of the programme as a **social network for the older person**, how important is this support group/social network that we meet in the hospital or community? Rose – I am **not sure really** as we don't get really involved after patients leave the group, we don't know who maintains contact with other people but **I know it does happen** – I don't know what it is but you can go anywhere, travel on the bus, go into a café for a cup of tea and even strangers **older people tend to socialise better together**, they talk to anybody and actually our 3-5 pm group which tends to be the group where a lot of the older or the older people will join in the exercises which becomes very much a social group – they sit in the corner waiting for their B/P's to be taken and they chat away, there **doesn't seem to be the shyness** associated with somebody younger especially somebody female. VF – I am sure you might agree that people develop friendships and probably meet outside – a sort of togetherness, solidarity .. Rose – I know they do and certainly for **those that are isolated** and don't have any one at home with them then that person would be **encouraged to uptake the PALS (Phase 4) programme** because **it's very social, there is walking groups and things going on there**. There is the **owls scheme**, a lot of the over 50's will tap into, they will spend the day there so it's necessary to **stop them feeling very anxious about being isolated and to maintain that level of fitness that we are hopefully passing onto them in phase 3**. VF – lovely, thank you.

P. **Q16:** VF – The impact of **appropriate medication on the older person's QOL** – what's your view on that? Rose – I think there is a greater **fear of side effects**, as you will be aware, **they**

read the information leaflets in the tablet packs, the majority of medicines we give out there is in those leaflets a **warning** about giving them to **older patients** and of course that **fear passes on to patients that need to take them**, if you are a little older, not are you only worried about the side effects that can affect anybody or this might be worse for me as I am a little bit older and there is that fear and people do tend to be affected a little more with their medicines as well and again it's the **dizziness**, and the **fear that you are going to manage it**, for example, people who are on **diuretics** and you need the loo it can be very **very restrictive to somebody going out shopping** , they need to plan the route to where the nearest toilet is which happens. It's very restrictive (frusemide) and some people won't go out in the morning if they take the dose of frusemide in the morning , they won't go out until the afternoon , it really is an **awful restriction on somebody 's freedom**. VF – interesting Rose. Rose – the older, just to make it clear for you, tend to be the group who mostly likely **needs diuretics due to B/P problems which tends to be associated as you get older**. VF – do you think there is a greater incidence of **side effects** with older people? Rose – oh, there is, there definitely is, it can **affect renal function and they're much more sensitive to the effects of the tablets**, they don't need as high a dose usually. VF –how important, for instance, are the **statins** for older people? Rose – **I would give it**, I don't think there is a problem with that unless of course there is a **contra-indication** to that, I think the **majority of people would benefit**, I think the **evidence** is coming through to suggest that's true because not only you are not just **lowering cholesterol** what you are doing is **stabilising 'plaquing'** already there. Thank you, luv.

Q.Q17: VF - Moving onto the **impact of hobbies/leisure activities** on the older person's QOL - how important is it to keep people moving? Rose – it provides a **brighter outlook** and gives them a **sense of purpose**, remember when you **retire from work, at lot of your purpose for getting out of bed in the morning is gone**, you have got a long day ahead of you, you have **lost your social group** that you used to go to work with, you have **lost I suppose your usefulness in society** for a lot of people and it does actually **provide a purpose to have a hobby or a leisure activity that you can go to**. **PALS** is excellent for that. Even for those people who do go off in a caravan , that's a purpose. People very often like to travel to Spain it's a popular place among older people in Britain and they enjoy doing that and it would be a serious serious knock to them **if they weren't allowed to travel** and we know it is. For example, if they are waiting for tests or waiting for a bypass graft and are restricted from flying it can really be a bad time for people because they are denied their purpose. They are **less**

anxious and are more **motivated** and people and I put this in inverted commas which I have wrote down “ **they act younger**”, they actually **look it, act it, you know, they say I am enjoying it** and I feel a lot younger than I am VF in terms of maintaining their hobbies, Rose - that’s right, in their outlook. VF - Thanks Rose, lovely.

R. Q18: VF – Does **religion/worship** have an impact on the older person’s QOL?

S. Rose – Again it’s a **very individual thing is religion**, we do have **some regular church goers**, they do tend to feel better supported very early post discharge MI that’s probably where people feel most vulnerable at any age especially if you’re older. You tend not be able to manage some of the things that probably you would if you were a little bit younger when it takes a bit longer to repair, then you are going to need support for longer and I have to say that the support available in this locality is pretty poor but **it (religion) creates a support network** and **it (religion) can be quite comforting** to people as well to feel cared for and I don’t know if its true, every body fears dying and it tends to be **less stress associated with dying if they have got a strong religious belief** . VF – is this more of an important issue for people from ethnic minority groups? Rose – yeah, I think definitely – it will go a couple of ways really and the family will tend to be overprotective or they are actually keen to access every resource available. For **some people in the ethnic minority**, they will put their **culture and religious beliefs over and above that may benefit the patient**. Again, I will give you an example of this, we had a women’s only group in this certain locality and primarily it was put together to attract more women into it, specifically more **Asian women**, the **uptake** of that has been pretty **poor** – it’s really made very little difference, we had a lady who was very very keen to do the group but she was actually **stopped from doing that by her male members of the family** ... VF **because religion was the most important issue - Rose ...yeah, yes before health**. It **doesn’t happen very often but it does happen**. VF- thank you Rose

T. Q19: VF – The impact of the **cardiac rehab as a whole** on older patients QOL including patients from **ethnic minorities groups** – I have noticed Rose in the past two and a half years since I have been with you is that there is a greater amount of people from ethnic minority groups joining the programme – what do you think? Rose – I agree, they tend to know somebody that knows somebody that knows somebody – they are a **very very close knit group of people in this locality** and they have a very very sort of ... pass on good things about us I think so if someone feels some benefit then they will know somebody who has got a heart attack and will **gives us a good review** .. ha, ha .. and will join in and actually it’s not just

ethnic minorities that drop out of the group, they tend to be even when they drop out, then they suddenly turn up, they have a habit of missing a few weeks and they don't tell us and we try to get in touch with them and they suddenly reappear again ... I mean I don't know what happens but they tend to do that, I am not saying that everybody does but the **people we think has dropped out have a habit of turning up again** – they can be a little bit **inconsistent**. I think they have **so much going on in their own culture**; of course they are very **very family oriented**. In summary, the CRP **empowers people**, they are **less anxious** and they are **supported**. VF – Lovely, very interesting

U.Q20: VF – Improvement of the older cardiac person's QOL in this specific area – how would you improve the service in this area particularly if you had a “wish list”? Rose – if you were to look at improving it for older persons specifically, I would like to see their **own group**, I think they have their **own needs** and I think they need their own group. It's nice sometimes when you mix young and old, **some older people find the pace difficult**, the **timing (clock) might be difficult**, I think it would be nice to run a group in the morning instead of the afternoon, it becomes a problem in winter when the nights are drawing in for some people, so a morning group and their own group and their own group and you can put in there a lot of the things that would **benefit somebody with co-morbidities** because at the moment, although we do try to work around them, they are not specifically designed to cope with anybody really except cardiac patients. I think perhaps they would do better if they had their own group – you can **tailor it so it just isn't a cardiac exercise group**, we are looking at **toning up the CVS** in the **cardiac rehab group** and I think maybe we need to go that little **bit further with older people**. I think we need more **OT input**, we had X who was working with us but she was more of a secondment, she actually wasn't paid to provide a service and what we were trying to do is to get X to be seconded in and to tap into the need and to provide evidence to say yes we do need to provide this service. VF – what would the OT do? Rose – they tend to look at things like **stress management**, they tend to provide the **springboard to help and support at home**, for example if somebody needs to be assessed at home for to be adapted like **bath aids** and things like that, then the OT will do that, so it's a very very useful role in cardiac rehab and they will also ..umm .. uum.. provide a springboard for getting younger people back to work so it's a very **very useful service**. One thing I would like to add is to **provide transport** as well and I think that is probably where we are lacking – the morning group provide transport, remember if we are looking at people in their own groups, we are talking about people with different needs and if somebody has limited mobility, at the moment we have got a **Tai Chi group** but that

tends to be **something that is not targeted at older persons**, it tends to **targeted to people** with **heart failure**, there is a difference between the two and so providing **transport** will get **people out of the house**, will actually get people into the groups because it has been uumm...uummm.. a barrier before. VF – thank you luv, you mentioned about psychology before to improve the service, would you add the **HAD scale** for instance as an outcome measure and then to set up support where there are problems? Rose – yes and it is **actually planned**, right at the very beginning when we were doing the cardiac rehab, we put a business case together and in it was a dietician, a clinical psychologist and an OT . We **didn't get the psychologist** because the service was pretty patchy in this locality, we got a dietician that was seconded for a day and we didn't get the OT so we have wanted those for quite some years now. And because of that, one of the things that we didn't do at the time was to look at the HAD scores, there's a good reason for that, it's opening a can of worms, it's a '**Catch 22**' – do we actually provide evidence that we need a clinical psychologist by doing the HAD scores or do the HAD scores and find out that patients have all these problems but we have nowhere to send patients to. So it was something that we probably couldn't resource until we had someone we could refer to. VF – Do you think that **anxiety and depression is an issue for older cardiac patients?** Rose – yes I do. I think its an issue with all patients but I think **older people are more prone to it**.

V. Rose- I would like to see, if possible, a **QOL tool that we can use to assess needs in different phases of the programme**, what we should be doing and particularly before phase 3 before the exercises, **we need to plan goals**, we need to look at somebody as saying how would you like to benefit from this group, how would you like to benefit, what is it that you aren't doing now that you would like to do, or what is it that you were doing before your heart attack that you no longer do that you would like to do again and what I'd like to be able to do is to help patients to plan their goals and look at what they have achieved in their outcomes which at the moment we don't do – I would like to see that. VF – **a QOL tool – would it help specifically with the older patients?** Rose – **yes**. If we look at somebody in their 40's as having a heart attack and they are working, they are indicated for resuming activities and getting back into their return to normal ... I hate that phrase but I will use it... is going back to work so you have **ready made QOL indicator** there in that you have got somebody who has got (*intonation – leaned on word*) **back to work and then earning money again**, a lot of everything that goes on when somebody loses their job and can't work is resolved , for **somebody that's older you haven't got that marker** , you really **haven't got that indicator** and they are a much **much more difficult group to actually assess**, a lot of older people tend to be very .. uum... they **don't like to .. uumm... open up with their problems** as much as somebody who would be younger.

So I would like to see individual outcomes, I would like to see a difference between walking into the group and walking away from the group VF – almost like a cardiac care plan so to speak? ... Rose ... yes, I think we have moved on a bit since but yes ... VF – ahh.... yeah ...I know what you mean by an individualised approach. Rose – yes, yes. There is a test we are doing at the moment I forgot what's it' called at the moment ... but it's a **step test measuring B/P and pulses and the Borg Scale but it doesn't tell us anything...** All it tells us is that there are **so many variables that you can't measure** somebody walking into the gym for the first time with anxiety levels that affect the B/P, a little bit reluctant to walk on a 'stepper' at a certain pace, then the difference at the end is very very different and that's a huge variable, is a drop in the B/P due to fitness or anxiety levels? (50.47). Overall. I think people need to be able to **do what they want**, to be able to **feel happy** in what they do and **not to be scared**. What **people assume is that when you have a heart attack, it's the end of their life and it's not** (*intonation - leaned heavily on the word*). VF – Well thank you Rose for a very stimulating and interesting interview. Rose – you are very welcome.

APPENDIX XXIII: INTERVIEW TRANSCRIPT: CARDIAC PATIENT: OPEN CODING
(COLOUR): THEMATIC ANALYSIS:

Male patient – Kes (k) – diagnosed with a NSTEMI – age 82 yrs.

Introduction

V: Right, it's er, it's working. So I'll put this on as well kes, so I'm very grateful for your help ...

k Well ...

V: ... time.

k ... well that's all right ...

V: Yeah.

k ... I've got the time Vinny so er ...

V: Very grateful 'cos it's ...

k ... although we've been busy all week (laughs).

V: (Laughs). Now kes just gonna go through the questions with you ...

k Yeah, right.

V: ... so, and it's just about being relaxed and it's a structured, it's just a structured conversation, there's no wrong or ...

k Yes.

V: ... right answers ...

k No.

V: ... and everything I have kes, you know, I will destroy, you will remain anonymous.

k Well that, that's, that's fine. No problem with it.

V: Hmm. It's, so I have to do it very professional.

k Yeah ...

V: You know.

k ... yeah.

V: Now kes, with ... as I said just before, it's about three things, it's about yourself ...

k Yeah.

V: ... you, your quality of life and the programme ...

k Yeah.

V: ... in, in relation to the programme, or, it doesn't have to be in relation but it's just, it can even, just quality of life ...

k Yeah.

V: ... in general ...

k Yeah.

V: ... hmm. So the very first question I have now,

k Yeah. Fine.

V: ... but it's the, it's the nature of ...

k Yeah.

V: ... how to get at quality of life ...

k Yeah, yeah.

V: ... so kes, quality of life, you know, it's a fu, it's a funny old term is **quality of life kes**...

k Well it is, yeah.

SEMI-STRUCTURED INTERVIEW QUESTIONS

V: **Q1... what, what does it mean to you, before your heart attack, what was it, you know ...**

k **It has curbed my er, what we do ...**

V: Yeah.

k **... but it hasn't altered my quality of life because I'd so much going on before ...**

V: Right. Yeah.

k **... and I'm still doing virtually the same except we can't go abroad like we did before ...**

V: Right.

k ... but it, it, it, this **quality of life we have is, is virtually the same.**

V: The same. Now, when you say, kes, you can't go abroad is there, is it just, is there any specific reason for that?

k Well I think the **cost of my insurance would be sky high** and the fact that L (wife) would be very nervous all the time we were there, it's purely and simple, she doesn't want to go any more Vinny.

V: Right.

k **It's my wife, she, she just doesn't want to go, I, I mean ...**

V: **Yeah.**

k **... I, I, I agree with her really because I mean if anything happened to me it's her problem.**

V: Right. Right.

k **And let's face it, we're both over 80 and it would be a, it would be hard work for her.**

V: Fine.

k **I mean she's done it once when I was taken ill abroad once before ...**

V: Yeah.

k ... and er, she knew what she had to put up with then ...

V: Yeah.

k ... and I, I think she's just got that feeling that it would be too much.

V: Fine.

k And, like the girls said (nurses), the girls said, **it is not the going on holiday, it's what happens at airports.**

V: Oh I understand because I mean they are, the, it, it's, **it's stressful.**

k **Oh it is.**

V: I find it stressful.

k Well, well this is it ...

V: **And I don't like airports.**

k No. No ...

V: No. no ...

k **... and neither do I.**

V: No. And waiting and, you know, and you can be de, delayed for three or four hours and stuff ...

k That's right.

V: ... and it's not very ...

k Well ...

V: ... it's more stressful sometimes than it's worth.

k A, and, and last year we had a **very stressful time in, in Rhodes** coming back because we were, we had a ticket but we weren't on the manifest for the plane, it hadn't been put on, our names ...

V: Oh.
... and we had to sit for an hour waiting to see if there were any seats on the plane.

V: Oh. So it's not good.

k **So er, at our age it wasn't right good, so, we've cut out that. That's the only part of the life that's been affected.**

. Thank you. So just abroad and nothing more...

k Yeah.

V: ... erm, don't worry now, I'm gonna take a coupla notes, it's nothing ...

k Yeah.

V: ... you know, so ...

k No, no, that's fine.

V: **Q2 - What did your quality of life mean to you erm, Kes, after your heart event ?.**

k **... er, er, it is, what, what do you mean by qualify of life? We've, we always had a good life before.**

V: Right. Yeah.

k **And we still have.**

V: Yeah. What do you my, mean by it erm, Kes. What do you mean, when, when you say qualify of life just there to me, what, what do you understand by it? Your own feelings about it. What is it for you?

k **My own feelings is that we can live like we lived when I was working.**

V: Right.

k **And we don't really want for anything.**

V: Right.

k There are things that **we could do with, but really we've as good a quality of life as really anybody could ...**

V: Right.

k ... have.

V: So you're saying that erm, you refer there to, you don't want for things. **That's material things?**

k **That's material ...**

V: Yeah.

k ... things yeah.

V: **Q3: ... any difference in your quality of life before and after your heart event?**
Did it make, you had an unfortunate, unfortunately you had a heart attack ...

k Yeah.

V: ... **now did that impact on your quality of life?**

k **Apart from stopping us doing certain things ...**

V: Yeah.

k ... that's all.

V: Right.

k **We, I've had to slow down ...**

V: Yeah. Yeah.

k ... **with what I do, I mean ...**

V: Yeah.

k ... **let's face it now I've got about 200 plants at the back to put in.**

V: Right. Right. A bit o'gardening stuff.

k Yeah. **You like gardening?**

k **Well yes I like to ...**

V: Lovely.

k ... see my garden look well.

V: Aye, aye. Lovely.

k A, and, er, you see the thing is I oft, **I used to do all my own decorating ...**

V: Yeah.

k ... er, I've **put my own kitchen in ...**

V: Handy.

k ... and **I put wardrobes, fitted wardrobes**, in all bedroo, all the bedrooms.

V: Wow. You, you, you've got lots of talent then.

k Well I, [laughs], I could manage to do things, shall I put it that way.

V: Right. Right. Different to me.

k Yeah.

V: I kind of bang a, I can't even bang a nail in the wall without hitting me thumb [laughs].

k [Laughs].

V: Thank you.

k No, I've been, I've been very, I mean the thing was, I was in the **X trade for 30-odd years** and I mean, I, I, I didn't fit the carpets down here or in the halls, stairs and landing. We had that done, coupla years ago but before that I'd done the hall, stairs and landing, I'd done me own fitting and stuff like that, I ...

V: Hmm.

k ... was, the only thing that I can't do and never could do, I used to lift the bonnet of the car and look it, ooh there's a lot in there and shut it quick ...

V: [Laughs].

k ... to make sure it didn't fall out [laughs].

V: Me too.

k I, I'm, I'm hopeless with vehicles ...

V: Yeah.

k ... I'm not, no good at engineering stuff ...

V: Yeah.

k ... well cars anyway.

V: Yeah.

k Right. [Laughs].

V: **Q 4: Are there any other components to it? ... What other ...**

k **Well ...**

V: **... parts would make up your quality of life, you, you've mentioned it to me earlier on before we've started ...**

k Yes ...

V: ... the interview.

k ... yes, well I mean I, **I enjoy my Masonry** and we go ...

V: Yeah.

k **... to church.**

V: Yeah.,

k We we go to church every Sunday ...

V: Yeah.

k ... and, and er, we enjoy going to church and we enjoy the people up there and we, we en, we have an older lady that, up **to me having this heart attack I used to go and pick M. up and take her to church**, she's not far away but she, **she's only 98 ...**

V: [Laughs].

k ... [laughs], and er, and, and now L. goes and picks her up, but she, poor old M., she's, she broke her thigh and she's in hospital at the moment ...

V: Aw, hmm.

k ... but we went to see her and she, she's coming on great ...

V: Good.

k ... but, but it, it, **it's the quality of life, you see, we get on well, round here, the neighbours are fantastic ...**

V: Right. Yeah.

k ... the neighbourhood that we are, I mean P. and C. are having work done next door, well ... they don't bother us, we don't bother them but if we wanted anything they're there ...

V: Yeah. So you've got good neighbours.

k ... and when I was in hospital V. and M. next, the other way, always came round, said L. have you got a, a lift ...

V: Yeah.

k ... thi, this is a great area.

V: Yeah. It's very nice.

k Oh it's a good ...

V: Very nice. Yeah.

k ... **it's lovely area is this Vinny.**

V: Yeah.

k It is.

V: Yeah.

k Well we've been in this house ever since it was built.

V: Right. Hum, yeah.

k So I mean we, we can still live in it ...

V: Yeah.

k ... we can still afford to live in it and ...

V: Yeah.

k ... and I feel sorry for people who can't.

V: I know. Yeah. Thank you erm, th, thank you erm, kes

k That's my quality of ...

V: That's ...

k ... life is ...

V: No worries because it's, I mean the best definition is your own definition, it's how you ...

k Yeah ...

V: ... view it ...

k ... yeah.

V: ... you know. And again, I mean, why do you think, is, is there any difference in your quality of life, I think you probably kind of referred to it a few minutes ago in your answer ...

k Yeah.

V: your, you've golf and your **Masonry** ? Tell me a bit more.

k **I ha, I have a good social life.**

V: Yeah. Erm, so what other blocks, what other kind of, you know, **what other building blocks** ...

k **Well going to church.**

V: Okay.

k That's the same.

V: Yeah. Yeah.

k But they're all, thing, I mean the thing is a, **a lot of my life is taken up with things Masonic.**

V: **Yeah. And a good mental outlook.**

k **Er, and still having all my faculties.**

V: Yes. Yeah. As ...

k **Except they're getting a bit slower.**

V: Yeah, well [laughs], so are mine ...

k [Laughs].

V: ... as I get it, as we move on.

k Yeah.

V: **So there's a physical side.**

k **Yeah ...**

V: You know ...

k ... yeah.

V: ... **being able to do the things you can do within your limits.**

k **That's right.**

V: **And a social, which is friendship and ...**

Yeah.

V: ... and ...

k Yeah.

V: ... **neighbours ...**

k Yeah.

V: ... **and the Masons and the golf ...**

k Yeah.

V: ... **so there's leisure ...**

k **Yeah.**

V: ... and there is, are you okay with all of that?

k Yeah.

V: Yeah. Yeah.

K I'm still trying to get back, **I shall never get back to what I was because I was a good golfer ...**

V: Right.

k ... I played very low, I was a very low handicap golfer, I was off 6 handicap ...

V: Right.

k ... which, and I played all over, I played in x Golf Club.

V: Very good, that's a very good golf, the young man that we referred to earlier on who won the Irish Open ...

k Yeah.

V: ... he plays off 5.

k Yeah. He plays off 5?

V: Off 5. And ...

k Aye, he was on ...

V: ... he's won the Ir, that was the only one ...

k One shot different to me.

V: You must've been very good.

k Yeah.

V: Lovely. I've got a good friend erm, at work who's a very good golfer ...

k Ah.

V: ... he plays off 10.

k Does he.

V: He's a good golfer.

k **Aye, well you see, I mean I'm still playing off 15.**

V: Ah well.

k **At 80, so it's not so bad.**

V: Not so bad at all. Lovely. Thank you. Now, moving onto question 5 ...

V: **Q5:...** erm, Kes - **How do you feel about your physical health now?** Carrying out your own activities of, you know, pottering about as it were.

k **I'm slower.**

V: Okay.

k **I get tired quicker.**

V: Yeah.

k **Not, that's the only thing Vinny. I get tired quickly.**

V: That's since the heart.

k Yeah...

V: Right.

k ... yeah.

V: Yeah. But nothing else?

k No.

V: **You've got no symptoms at the moment?**

k **No.**

V: Yeah.

k No.

V: **You didn't have a bypass erm, is it just ...**

k **No.**

V: ... just a, yeah. Your heart attack. Just tired more quickly ...

k Yeah.

V: ... and nothing else and ...

k Well the thing is Vinny, the reason I didn't have any bypasses or anything was that **I never saw a senior Dr until I was coming out.**

V: Right.

k **I never saw anyone from the x department ...**

V: **Medical wise?**

k **Medical wise.**

V: Yeah.

k Except I saw senior nurse X, the nurse, she came down ...

V: Hmm.

k ... I saw a doctor when I went in ...

V: Where were you, in local hospital?

k Yeah.

V: Yeah.

k A doctor called H.. **I was in the MAU**, which is the Medical Assessment Unit ...

V: Yeah. Busy place. Hmm.

k **... and I was in there because I got a, an infection in that place**, I was in there until er, ... Sunday morning ...

V: Yeah.

k ... I went in on the Tuesday and I was in there until Sunday morning ...

V: Yeah.

k ... and in all that time I saw no-one from the x unit, I was put up ...

V: Wh, wh, were you in the, did you go into the.. the coronary care unit - kes?

k No.

V: **No.**

k **I was ...**

V: **Just into a medical ward.**

k I wasn't even put in a medical ward.

V: Right.

k On the Sunday morning I was put into a surgical ward on the fifth floor of x hospital...

V: Yeah, I know where it is.

k ... **and stuck ...**

V: Yeah.

k ... at the top of there.

V: Right.

k And er ...

V: How did you complain about your heart attack, you know, in, initially, what, did you have central ...

k Well I was in here ...

V: ... chest pain and ...

k ... well what happened was that er, on the Sunday we'd come back from church and I'd found that we have a hatch on the hall ...

V: Yeah.

k ... which, so people can get underneath the floorboards, and it'd sunk, so I pulled the carpet up, took the carpet up and everything, pulled it back, lifted all the floorboard, er, lifted the floorboards in the hatch, found that it wasn't, it was broken so I, I nailed it all back up and, and made it safe again, put the carpet back down, put the floor back down, put the carpet back down on top ...

V: Yeah.

k ... and fitted the car, re-fitted the carpets ...

V: Yeah.

k ... round it. On the Tuesday, L. came down, she said er, look what I've done. And er, in the di, in the lounge she'd pulled one of the curtain rails down ...

V: Yeah.

k ... so I went into the garage, found all my stuff, put all the curtains, rail back up, found the stuff, put the curtain back up, went and **sat down and suddenly I said oh, god I've got a pain**

V: **Quite bad.**

k ... yeah ...

V: Hmm.

k ... **across my chest ...**

V: Chest, yeah.

k: ... L, she'd been, she, she'd actually been the receptionist at my doctors for a few year, well until I'd retired ...

V: Yeah.

k ... and er ...

V: She'll know the symptoms.

k ... sh, she rang for a paramedic straightaway ...

V: Yeah.

k ... and the **paramedics came and the ambulance came ...**

V: Yeah.

k ... **and they came in, ga, put the heart monitor on and everything, nothing showed ...**

V: Right, right.

k ... they did another in the ambulance ...

V: Nothing showed.

k ... nothing showed.

V: Right.

k **I got into hospital, they did two more. Nothing showed. I got into the ward ...**

V: Did a blood test.

k ... they did one ...

V: Yeah.

k ... and nothing showed and er, a doctor called er, and her Christian name was H. ...

V: Hmm.

k ... **came, she said I'm not too happy, I'm going to take a blood test and ...**

V: Yeah.

k ... see ...

V: Yeah.

k ... and she did and she find that there **were enzymes in the blood ...**

V: That's right, they're raised.

k ... **and er, that was, she said you've had a heart attack.**

V: Right.

k And that was the only one who saw me. I was given, they sent down medication for me ... and then, as I say, **all this other happened in the ward, I was never moved ...**

V: Hmm.

k ... but er, a place came in er, the coronary care unit. Er, I went in on the Tuesday, on the Wednesday an Asian lady came in with her husband ...

V: Oh you, you, you, so you did go to the coronary care unit?

k No.

V: No. Okay.

k No.

V: Okay, right.

k She came in and she, brought, they brought her into MAU and er, one of the girls came down, one of the nurses came down from the coronary care unit and I was talking to one of the, oh she said there was a place up in the coronary care unit and they put this Asian woman in, took her up, oh well she was still having pains.

V: Hmm.

k **And I thought, well, the reason is you're too old lad, you should've gone.** And that's what they were thinking. Anyway ...

V: Right.

k ... apart from that ...

V: Hmm.

k ... and on the, so on the Monday morning I rang L. at 7 o'clock in the morning and L., because on the evening when she, after she'd been they came round, moved me out of the ward that I'd, **they'd taken me into a surgical ward ...**

V: Yeah.

k ... they put me into another ward with three patients, one who had been in for five weeks with a, he'd had a hip replacement and he was in a hell of a state ...

V: Hmm.

k ... the other had four cancers ...

V: Hmm.

k ... and the chap in the bed next to me, he had tubes from his stomach into bowls be, at the side of the bed and everything, and that night he'd had medical staff round him all the time **and there's me trying to get over a heart attack.**

V: Right. Right. So it wasn't a wonderful environment for you was it.

k So on the Tuesday, Monday morning I rang L. and I said L. **I want out of here ...**

V: Right.

k ... **and I told them, the, the nurse, I said I want to see who put me in here ...**

V: Hmm.

k ... and I want to see a doctor ...

V: Hmm.

k ... and I want to see somebody ...

V: Who'll give me some ...

k Yeah.

V: Yeah, proper information and whatever.

k Yeah. So er, eventually in the afternoon when L. came to visit ... she went and saw them as well, and this doctor, young doctor came up from medical. She said, you know, **you're right out of the way up here, you know, we, we, our medical rounds don't come up here, this is surgical.**

V: Right. Well that's right ...

k Now, now ...

V: ... that's right.

k ... this is, this is a, a hospital ...

V: You're, it was in, seems to be that you were in er, in ...

k Yeah.

V: ... in the wrong place.

k **I was in the wrong place.**

V: Hmm.

k So eventually, er, L. said er, well can he come out. Oh, she said, I can't let him out ...

V: Hmm.

k ... and during that, on **that Monday I'd been down to the cardiology unit where the nurses are ...**

V: Yeah.

k ... and they'd done another, well it's like, pregnancy thing, they'd gone with, **and it was not a cardiology nurse who did it, it was a doctor ...**

V: Right.

k ... who was in er, she said I'm coming in, I co, I'm in er, emergency and I'd like to be able to read my own things, so she said I'm learning ...

V: Yes.

k ... so she, she did it. She took about an hour to do this and we chatted and she, I said how bad is it doctor. She said I'm not supposed to say anything. I says you know, I know you're not ...

V: Yeah.

k ... **she said well it's not too bad** ...

V: Right.

k ... and I could see it all happening you see ...

V: Right.

k ... on this screen.

V: What was she doing?

k She was ...

V: **Was it an ultrasound?**

k **Yeah. An untrasound thing yeah ...**

V: Yeah.

k ... yeah, which they do ...

V: Yeah.

k ... and I'd, that's the thing so the lad who took me down said, he said you, I've had to bring you a quarter of a mile ...

V: Hmm.

k ... because you're in the wrong place really up in surgical.

V: Surgical, right.

k So when L. came, she said, **oh I can't let you out. I'd done the step thing which you're supposed to be able to climb steps** ...

V: Yeah.

k ... and that ...

V: Yeah.

k ... and I did that ...

V: Yeah.

k ... so L. said why not, she said oh it needs a cardiologist to let you out ...

V: Right.

k ... I said well I haven't seen one before ...

V: Right. So you were under ...

k ... so she said ...

V: ... you were under a consultant but it wasn't a cardiologist.

k **I, I, I didn't see a senior Dr.**

V: Right. Right.

k So eventually she said I'm, but, she said they finish at 5 o'clock ...

V: Ah.

k ... so it was quarter past four, so L. said, well it's only quarter past four ...

V: Exactly. Hmm.

k ... well she said I'll see. So she went off and eventually this chap came up, 'baht half past four, he was there for ten minutes and that's the only person that I saw from cardiology apart from Sr x.

V: Right.

k So when I got home, he let me out and, he got me home and I, he said I want you to see your doctor with, ne, ne, next week, so I did. C., one of the nurses, who's, works for this area ...

V: Hmm.

k ... came to see me at home and she was great ...

V: **I think I know C.**

k **She's good.**

V: Hmm.

k And she helped me.

V: Hmm. She's good.

k **Because she gave me confidence. She said do you want me to come again? I said C, yes. So she came again ...**

V: Yeah, yeah.

k Then, after the initial period after I cou, **I got my car back after the first month, I started going to rehabilitation ...**

V: Yeah.

k ... **and I, and I enjoyed up there. Those girls were great.**

V: Hmm.

k Those ...

V: Hmm.

k ... girls are fantastic ...

V: Hmm.

k ... and er ...

V: Okay.

k ... we had a, a, a long ch, well we, you know what I had up there ...

V: Indeed.

k . and, and, and they, they helped ...

V: Good.

k **... they're the only ones that helped ...**

V: Right.

k ... no do, no doctors.

V: **Right. So the medical experience wasn't a good one.**

k **No.**

V: Yeah, Okay.

k No.

V: Thanks erm, erm, I'll, I'll come back to you, yeah.

k Yeah.

V: **Now, that's a physical. Right, so, only thing is you're just a little bit slower, bit tired more frequently but everything ...**

k Yeah.

V: ... else is fine.

k Yeah.

V: **Q6: Lovely. Erm, how do you feel about your mental health, you know, your psychological health?**

k **My mental health is good.**

V: Ah good. Good.

k I mean, I'm just doing my crossword now, that's ...

V: Great.

k ... pretty easy.

V: **So the heart attack hasn't bothered you in, in ...**

k No.

V: ... terms of that.

k No.

V: Good. Good.

k I can still s, s, stand up and do ...

V: Absolutely.

k ... I'm going tonight, 20 minutes ritual ...

V: Yeah.

k ... I've got to stand up and do it.

V: Right. Right.

k I'm the only one out of er, 30-odd members who can do it.

V: Wow.

k [Laughs]. So I have to do it.

V: Absolutely.

k Yeah, yeah.

V: **Q7:** Thank you. And your social hel, **how do you feel about your social health, your enjoyment of your retirement and your hobbies, since your heart event, no real ...**

k No problem.

V: ... effect. No problem.

k No, no, no, no problem.

V: That's as good as it were ...

k Yeah.

V: ... no problems with it. Lovely.

Q8 – OMITTED – ANSWERED

V: **Q9:...** **being able to make your choices and being reasonably self-caring independent ...**

k Yes.

V: ... and as, this question's come from staff, that, the staff I interviewed about who, you know all the staff ...

k Yeah. Yeah.

V: ... nurses and doctors who ...

k Yeah.

V: ... care for patients with ...

k Yeah.

V: ... heart events, and that was a key question. **How do, how do those ideas affect your quality of life?** Do you, you know, what I mean to say is, you've, you've choices and being reasonably independent and able to do your own things, **has that been influenced at all by your heart, heart attack?**

k **Well it, it, it's made me aware more of, that you've got to slow down with it ...**

V: Yeah.

k ... you have to slow down. **If you don't you're going to end up do, having another.**

V: Yeah. You mean slow down physically?

k **Physically. You've got to slow down.**

V: Right. 'Cos you, so you were a little more active perhaps before?

k **Oh I was very active before.**

V: Very active.

k Very active.

V: **You, so you've become less active now since.**

k **I, I'm not as active now as what ...**

V: Right.

k ... I was.

V: When you say that, kes do you **mean active**, you mean in terms of social activities and golf, or do you mean active, all you know, just day-to-day activities.

k **Day-to-day. Day ...**

V: Right.

k ... **to-day. And, and golf actually, I mean we're only ...**

V: **Yeah.**

k ... **playing a few holes now where we used to play rounds.**

V: Yeah. Ah now ...

k I, i, it does ...

V: ... okay.

k ... affect you that way, **I mean it makes ...**

V: Yeah.

k ... you more conscious ...

V: Right.

k ... mo, more, and much more **conscious of er, what you're ...**

V: Of what ...

k ... doing.

V: ... you're doing. Yeah.

k Yeah.

V: That's fair enough.

k **I mean you do a certain amount and then you say, whoa.**

V: That's enough.

k **You've done enough.**

V: **Yeah. And does your body tell you that?**

k Yeah.

V: A, do, physically, you'll say, maybe I just need a little bit ...

k Yeah.

V: ... of a rest now for ...

k I mean ...

V: ... a while.

k ... **the, the thing is, you think I can do some more but then you say, and mentally you say, no don't.**

V: Right. Okay. Okay.

k **I mean physically you could do it ...**

V: But ...

k ... but men ...

V: ... psychologically ...

k ... mentally ...

V: ... you're saying maybe you shouldn't ...

k Yeah.

V: ... overdo it.

k Yeah.

V: That's fair enough.

k You've got to use your brain ...

V: Lovely.

k ... to stop you.

V: **Q10:** Yeah. Thank you kes That's lovely. Now, I know this, this is a question I put in, you know, and I, 'cos it, it's very, it's very pec, it's, it's, it's in ...

k Yeah.

V: ... it's about worship and religion and it's erm, it's very relevant for some people and not relevant for others. Now, and I think you referred to it earlier on, **how much does worship, religion or spirituality affect your quality of life?**

k **It does a lot.**

V: Yeah. I thought that.

k It does.

V: Yeah, yeah.

k **If you haven't got a spiritual, a spiritual ...**

V: **Yeah.**

k **... or anything like that ...**

V: Yeah.

k **... I mean everything r, round about Freemasonry is, is help.**

V: Right.

k It's, it's mental ...

V: Yeah.

k ... it's a help.

V: Help and advice ...

k And thinking about ...

V: ... and, and helping others, yeah.

k Yeah.

V: **And of course, I suppose that connects up with the religion ...**

k **Oh yes.**

V: ... does it?

k Well it ...

V: It would.

k ... it does, I mean er ...

V: From that perspective.

k ... **a, and at the moment we've got, got a great vicar.**

V: Yeah.

k He, he's, he's great is S,.

V: Yeah.

k And er, he's, we've now got a curate called T. who's a Frenchman and er, he was **a monk for twenty years** ...

V: Right.

k ... **er, a Catholic** ...

V: Right.

k ... a monk for twenty years ...

V: Yeah.

k ... and he's changed, he's so, I don't know why, he's come out, he's been, and he's turned to er, Church of England ...

V: Oh.

k ... **and he's now a Church of England curate** ...

V: Wow.

k ... and I think er, T is going to go as a missionary eventually.

V: Wow. Fantastic.

k **Well, he's a very, very reli, deeply religious** ...

V: Religious man. Pious.

k ... oh, oh, oh Vinny, he is very deeply religious ...

V: Right.

k ... is er, T.

V: Right.

k I said to him on Sunday, because he came, he took the service up at the little church at the top, **if you notice we have a little church** ...

V: Yeah.

k ... at the top ...

V: Yeah, I saw that.

k ... well that's that church ...

V: Yeah.

k Yeah.

V: Not that far away.

k No it isn't so we've only got to walk up (laughing).

V: Yeah.

k And er, I told him, I said, T you are a very religious man aren't you, I said you're deeply religious.

V: Crikey. Amazing innit.

k Well, let's face it, you do see these peo, you see people and, and you look at er, vicars and you think, he's done it for a job ...

V: Yeah. Yeah.

k ... and others ...

V: And others who are, who, who really take it erm ...

k ... that, that is ...

V: ...another, another step.

k ... **their ca, it's a calling.**

V: Yeah, a, a ...

k Yeah.

V: ... philosophical step.

k Yeah. Yes it is. Yeah.

V: And a spiritual step.

k Yeah, yeah.

V: So, that's lovely. Just one more. You know when you had your heart attack kes...

k Yeah.

V: ... you know, you've been saying to yourself, you, you worry of course, na, naturally you would, you know, about ...

k Yeah.

V: ... your physical, you know ...

k Yeah.

V: ... health and stuff. **How do religion, you know, your God, however you perceive him to be, how did that God help you? Do you think, did you call upon your God ...**

k **Yes I ...**

V: ... to help? If you don't mind me asking you.

k Not really.

V: No.

k Not really.

V: You didn't say ...

k **I, I, I just thought, I thought if he wants me he'll take me and that's it.**

V: Right. So. Okay. So it didn't have a huge impact in terms of the event?

k Well er, er, no not of, no not of the event ...

V: No. No.

k ... **because whilst I was in the MAU, the chaplain came down, I had communion whilst I was in MAU ...**

V: Yeah.

k ... **and she also came up on the Monday I was in and er, we had communion up ...**

V: Yeah.

k ... **in, in, in the ward.**

V: **Right.**

k **And she helped a lot.**

V: Right.

k The, the chaplain.

V: Right.

k **She helped an awful lot.**

V: **When you say that, what do you mean? How, in what way di, di, did she help you?**

k **Well I think they're bringing it into God, let's face it.**

V: Yeah.

k **Er, and she, she ju, she, she had that calming influe, influence.**

V: **Yeah. Was it the advice she was giving, and the calming ...**

k **Not, not a lo ...**

V: ... no.

k ... no, no it was, no, it was ...

V: Just calming influence.

k ... **talking general and the calming influence and we talked about people, funnily enough we knew ... people ...**

V: Similar kind of people.

k ... yeah, I mean the lad up at local area who was in my KT, **she came from this local area so she knew him, so we could talk, there again, you see, Freemasonry helped again ...**

V: Yeah, yeah.

k ... because we could talk, I could talk to her about this man who I'd known.

V: **Right. So it's just general conversation ...**

k **Yes ...**

V: ... but it's ...

k ... it's just gen ...

V: ... a calming influence.

k ... **but it was the calming influence.**

V: Yeah.

k **Yeah. And the, and the lady in the next bed ...**

V: Yeah.

k **... her husband was a minister ...**

V: Right.

k ... and, so we, we got on fine ...

V: Lovely.

k ... in there.

V: Yeah.

k The, it, it was ...

V: **Did you specifically talk about the heart event?**

k No.

V: Not really.

k **No.**

V: **It was just ...**

k **No, no.**

V: **... diversional, kind ...**

k **That's right.**

V: ... of ...

k That's right.

V: ... distract, you know ...

k Yeah.

V: **... distracting conversation ...**

k **Yeah.**

V: **... that was good.**

k It was, yeah.

V: Yeah. Very good.

k But the thing that I found, was, **was in the rehabilitation**, going up to the rehab area...

V: Hmm.

k **... and when you met other people who'd had the same thing as yourself ...**

V: Hmm.

k **... I think if I'd've been in coronary care and seen other people up there I shouldn't, it wouldn't've affected me at the rehab local area like it did ...**

V: Right.

k ... because it was the only time that I'd been with people ...

V: That had similar ...

k ... who had the same ...

V: ... kind of ...

k ... time as ...

V: ... and as ...

k ... yeah.

V: ... right. **They had similar kind of ...**

k **Yeah. And I, I ...**

V: **... situations.**

k **... I think that you need to be with people ...**

V: **Yeah.**

k ... **in the same type of situation as yourself to say ...**

V: You know I'm ...

k ... **because when I looked at 'em and I thought, Good God, he's, he's twenty years younger than me ...**

V: And in a worse state.

k ... **and in, he's in a worse state.**

V: Yeah. That's right.

k **And it did you good (laughs). It did ...**

V: That's right. Well it's true. It's true. Well it's comparison isn't it ...

k Yeah, it is.

V: ... **yeah. You, you estimate by comparison.**

k Yeah, yeah, yeah.

V:Q11: That's lovely. Number eleven erm, kes. **How does culture or ethnic, upbringing, how does your upbringing affect your quality of life?** Was it erm, was it significant? And how significant was it ?

k **I always, we'd always, we always had a good home.**

V: Yeah, yeah.

k We've always had a good home er, but I, I, **I left home when I was 17 and went into the navy ...**

V: Yeah.

k ... and really you, then when we got back, we were married in '47 so really we, in ... **it was really you, you didn't have any youth ...**

V: Right.

k ... **you, you was thrown in with men.**

V: Right. So you grew up very quickly then.

k **You grew up very, very quickly.**

V: Right. Right.

k Yeah.

V: You became a man pretty quickly.

k **You were a man very quickly.**

V: Right. Right. Was that good? Did it, did it ...

k Ah ...

V: ... influence you, how you, how you thought about your living?

k **Well no I think it, it just made you knew that you had to, you had to work damned hard, you had to do your job ...**

V: Yeah.

k ... **you had to get a job and work.**

V: Yeah. Yeah. I'll just change that over. Yeah.

k Yeah. Right.

V: So. Oh right. Okay. So, 'twas a, probably, **was it a strict upbringing? Fairly strict? With mum and dad.**

k **Well, yeah, they were, yes, they were. Yeah.**

V: Yeah.

k Yeah. Yes.

V: **So it, it did have a, a bearing on it.**

k **Oh it did have a ...**

V: It did. Yeah.

k ... bearing on it ...

V: Yeah.

k ... **you knew you 'ad, you knew right from wrong.**

V: Yeah. Very quickly. Yeah.

k **And nowadays they don't.**

V: Right. Yeah.

k **They're allowed to do too much.**

V: Exactly.

k Yeah.

V: And get away with it sometimes.

k Yeah.

V:Q12 - Now your retirement. Number twelve ...

I: Yeah.

V: ... kes. I, in what way, if you're getting tired or anything just let me know, you know ...

I: Yeah, fine ...

V: Yeah ...

I: ... no, I'm, I'm okay.

V: ... you, you're okay.

I: Do you want some more coffee?

V: No thanks I'm ...

I: Madam's come down.

V: I'm okay, thanks.

I: Alright.

V: I'm, I'm, thank you. In what way does your retirement, 'cos I know you're retired now ...

I: I've been ...

V: ... **how, how's that affected your quality of life, has it, was it good for, with you?**

I: **We can live exactly like we did before ...**

V: Right.

I: ... **when I was working.**

V: **Right.**

I: **And that's good.**

V: Right.

I: **We've had a good 18 years retirement.**

V: Right. Yeah.

I **And if anybody asks (laughs), I mean I had to retire at 65, I retired at 65 and we've had a, we've had a good 18 years**

V: Yeah.

I: **We've gone abroad three times a year, twice or three times a year ...**

V: Yeah. What did you do mostly? I remember you saying this to me, but I've forgotten now, you, you were, I know you were in the, in the arm, or in the na ...

I: **In the navy.**

V: ... in the navy ...

I: Yes.

V: ... and, just remind me kes, what did you do mostly, was it financ, was it, maybe ...

I: No, no, no, no ...

V: ... no, oh carpet ...

I: ... I was er ...

V: ... **carpet business.**

I: ... **sales mana, yeah, yeah ...**

V: Sorry. Yeah.

I: ... yeah, I was in the x trade. The down trodden trade.

V: Yeah. Did you erm, you know, separate from today, do you know a man called xx in the other town?

I: No I can't say that I do ...

V: No, it's okay ...

I: ... Vinny.

V: ... I know a man ...

I: I know a lotta people with that name ...

V: Yeah.

I: ... because I knew a, a family with that name who had many kids.

V: Right.

I: And I knew 'em all.

V: Right. No, you didn't. 'Cos he, he was a businessman in the same kind of trade ...

I: Yeah.

V: ... so ...

I: Yeah.

V: ... **right, okay. So retirement has been good for your quality of life.**

I: **Yeah. Yeah.**

V: **Okay. It's in ...**

I: **Very good.**

V: **Q13...** you know, erm, ... you know the **lifestyle changes**, we, you, you have, wha, you, you've you've made some changes in terms of a bit of a less activity, you know, your erm, you're on medication so there's a few little things have changed, ho, **how's that affected your quality of life?**

k **Well it hasn't really ... it, it, it hasn't really.**

V: **So your lifestyle hasn't changed that much ...**

k **No ...**

V ... has it.

k ... no.

V: Just ...

k No.

V: ... yeah, not ...

k No.

V: ... significantly altered.

k No.

V: Right. Okay.

k No it hasn't.

V: No. So if, and that wouldn't've, obviously if that hasn't changed it won't have affected you how you feel about your quality of life.

k **No, no. The only thing is it's slowed me down.**

V: Yeah. Yeah.

k And that's the only thing ...

V: That's it.

k ... that it's done ...

V: Physically slowed you down.

k **... yes, physically slowed me down.**

V: Yeah. Yeah.

k **And I don't lift as much, I mean I was very strong.**

V: Yeah. You were, well, you've a fine, you know, as I say, when your heyday you were, you were, you were a strong man.

k Yeah I was very strong.

V: Hmm.

k But, apart from that, I mean it's ...

V: It's, yeah, okay.

k ... well ...

Q14 – omitted – answered

V: **Q15... but I'll go to number 15 first, and this is about, it's specific aspects of the programme ...**

k Yes.

V: ... the rehab programme ...

k Yeah.

V: **... now, how do you feel about the health promotion activities. For example, the advice on, well smoking didn't, it didn't, not relevant to you ...**

k No.

V: ... but your **diet and exercise**, that was given to you by the staff, how do you ...

k Yes.

V: ... feel about that?

k **They were great.**

V: **Okay.**

k **The girls were great.**

V: Yeah.

k And my wife met them because we went to the local town to see them ...

V: Yeah.

k ... and they were great.

V: Yeah. So the, the, the **advice they give you was, was good advice.**

k **That, it's er, the best advice we could've ha, if I hadn't have had the advice of the nurses I should've had nothing.**

V: Right. So you've very very good experience from the nursing staff ...

k Yes.

V: **... and not so good from the medical staff.**

k **No.**

V: Right. It's a pity that now, because you were misplaced, you know, in, you know ...

k Oh yeah.

V: ... were in the wrong place.

k I know.

V: **Well I think you were anyway.**

k **And the girls knew.**

V: Yeah. Yeah. Yeah. So.

k **The worst of it is er, they wrote to my doctor and said that I'd refused some treatment.**

V: Crikey. And that wasn't true.

k Well the thing was it was a chap came and said er, in the ten minutes that he was there, er, we can put a dye in and, you know, and then we can see if you want a stent in but you don't need to have it now. And my wife...

V: Hmm.

k ... will confirm this because she was there ...

V: Yeah.

k **... you don't need to have it now, you can have it later.**

V: Oh then, says you, I'll have it later. Yeah.

k So. She sa, he said oh I'll give you all the things, **so he said it can kill you putting this dye in, it can give you a heart attack ...**

V: Hmm.

k ... and funnily enough in the pa, the local paper there (laughing) was a woman waiting a coroners report, **she'd been given this dye and ...**

V: And she had an allergic reaction ...

k ... she died (laughs) ...

V: ... oh my god.

k ... she'd died.

V: Oh my god.

k So I mean, so my, my, the doctor I saw down there he says, oh he said, er, how've you felt, I said, not too bad doctor, he said ...

V: Hmm.

k **... don't bother.**

V: Hmm.

k So ...

V: I know.

k ... so if you, if you, if I had another heart attack I'd have it ...

V: Oh yeah.

k ... but ...

V: Yeah. Erm, you **probably didn't need it in, at the end of the day.**

k **No. No.**

V: **Q16: No. Now do you remember the stress relieving activities, you know, the, the relaxations that ...**

k Yes.

V: ... we had ...

k Yes.

V: ... just after the programme ...

k Yeah.

V: ... **how did you feel about that ...**

k **Good.**

V: ... kes.

k Good.

V: When you say that what do, you know, define ...

k Well ...

V: ... what you mean by that.

k ... **well they just [sighs], it's the best thing you can do is to relax. Your blood pressure comes down.**

V: Okay.

k It's good.

V: Yeah. So it's a good thing to do.

k Yeah.

V: Yeah.

k Yeah.

V: Erm ...

k **I can't understand anybody refusing to go to this rehabilitation ...**

V: Right.

k ... and the girls said they did.

V: **Yeah. Oh yes there was. I've seen people who's refused. Yeah.**

k **Oh. Stupid.**

V: Yeah. So that was a good aspect. Brought the blood pressure down, felt more relaxed.

k Yeah.

V: **Q17:** Okay. Lovely. Now, going, 'scuse me kes, kes, I've got an itchy nose. Excuse me [sneezes]. Excuse me. Excuse me. kes, **how did you feel about your exercise schedules, you know, the exercises you did ...**

k Yeah.

V: ... how, how useful was that to you ...

k **That was very good.**

V: ... and how import, how important was it?

k **It was very good. Now, actually it was extremely good and the ...**

V: Yeah.

k **... lad I play golf with [laughs], he said oh I wish could have the sa, can he, can he get me to go and do the same ...**

V: Yeah.

k **... exercises, well he's gone to PALS ...**

V: Right.

k ... now, er, **the girls just said**, if you're playing golf and we're going to go swimming ...

V: Yeah.

k **... if you're playing golf and going swimming, that's enough.**

V: Yeah.

k **You don't want to do any more exercises.**

V: Yeah.

k **You know, just keep walking about, do general things, half an hour in the garden, a day, and ...**

V: Absolutely.

k ... and, and that's it.

V: **Absolutely. Do you swim?**

k **Yeah.**

V: Yeah. Do you know, I cannot swim.

k Can't you.

V: No. I love water, but, but never been taught how to swim [laughs].

k Oh my ...

V: I must go and do some proper lessons.

k You've got to do some lessons.

V: Because, but once my feet leave the ground kes I ...

k Yes.

V: ... I start to panic.

k Do you.

V: I do. And I, you know, and I need to be taught properly [laughs].

k **I did a lot of surfing in Australia.**

V: Oh right.

k **So I did a lot of sea swimming.**

V: Yeah. So you're walking and your golf, and, and, and, exactly, gardening, that's plenty isn't it.

k Yes it is ...

V: Absolutely.

k ... yeah. Yeah.

V: **Absolutely. Were you surprised kes a, at, at about how much exercise you could do?**

k **Yeah. I was. I mean [laughing] ...**

V: Were you.

k **... I, I've told everybody what we were doing, I thought, I thought my god, I'm gonna have another heart attack with doing all this [laughs].**

V: Yeah. Yeah, bet that surprised you, says, you know ...

k Well I ...

V: ... a lot of people think you cannot do any at all.

k **Yeah. Well this is it. But the physio said no, we're not pushing you. The physio was great.**

k She's great is that girl.

V: And about the patients, you know ...

k Yeah.

V: ... the general ...

k Yeah.

V: ... things, but ...

k Oh she's good.

V: ... love sport.

k She was, well L. met her as well and er, ...

V: Yeah.

k ... they were nice were the girls.

V: **Q18: So. Right. Erm, now number 18 kes ...**

k Yeah.

V: ... how did you feel about the medication advice you were given? You know about the advice you were given about your medications. And, I presume you're on medications?

K I am on medication ...

V: Yeah.

k ... yeah.

V: **Do you understand what they do mostly?**

k Yeah, yeah, I do, yeah ...

V: Yeah.

k ... **I mean, er, I've got a beta-blocker just to ...**

V: Yeah.

k ... **slow the heart rate down, I've got clopidogrel which er, is like aspirin it thins ...**

V: Thins the blood.

k ... the blood er ...

V: Yeah.

k ... I've got another to cover that for the stomach ...

V: Yeah.

k ... **then I have my blood pressure tablets and that's it ...**

V: Right.

k ... **I've got five ...**

V: Right.

k ... that I take on a morning, two on a night ...

V: Yeah.

k ... **oh I take a statin on a night.**

V: Ah, I take one myself.

k Do you.

V: I do. I'm on simvastatin.

k Well this is simvastatin that ...

V: Yeah.

k ... I'm on now.

V: Hmm. How much are you on kes?

k [Gets out of chair].

V: Just as a matter of interest.

k I'll tell you in a second.

V: Hmm. I like your little hatch [laughs].

k Yeah, it's useful actually ...

V: Isn't it.

k ... er, Vinny. It's very useful is this. Ahh.

V: Oh you're on Omeprazole for the erm, stomach, yeah. Oh we're on 40 milligrams.

k Simvasin, 40 milligrams.

V: Yeah. I take ...

k And the ...

V: ... I take 20. But I, I've got no heart event, but my cholesterol's very high. 'Twas 6.6 ...

k Well ...

V: ... so I brought it ...

k **... well mine was 6.6 ...**

V: And I went to the GP and I says I want that to come down please.

k Yeah, yeah.

V: And he, he re, he resisted it ...

k Yeah.

V: ... he didn't want me to have 'em ...

k No.

V: ... and I says well if you don't I'm gonna go across to the pharmacy I'm gonna buy my own.

k Yeah.

V: So I did.

k They can be ...

V: Yeah.

k ... very er, they can be ...

V: Do they make you tired?

k What?

V: **Do they make you tired?**

k Well it might be those that are making me tired ...

V: Right.

k ... more tired than ever, but that's, that's all, but er ...

V: Yeah.

k **... as from the point of view of what I was told by doctors in hospital, I don't think much to 'em.**

V: Right.

k I mean what, all he, all he did was, I was on a quarter of a metropolol

V: Yeah.

k ... which is a betablocker ...

V: 'Tis.

k ... I was on a quarter ...

V: Yeah.

k **... of that and when he, oh he said take half of that, so I'm on half at night and half in the morning ...**

V: Right.

k ... and that's all.

V: Okay.

k **And that's the only thing that that, that man changed.**

V: Yeah.

k Except that he stopped me off taking er, Furesomide...

V: Right.

k ... which I was taking with ...

V: **That's a water er, kicks out ...**

k **Yeah, that was a water thing ...**

V: Yeah, water tablet.

k ... yeah, yeah, yeah.

V: **Lovely. Where did you get all that knowledge from erm, you just described to me.** Where ...

k What ...

V: ... did your knowledge come from kes?

k What?

V: About the medications.

k What?

V: **Where did that knowledge come from?**

k **Wi, whe, with reading the er, things on there.**

V: Right. Very good. Did the, did the nursing and medical staff explain things to you?

k **Well, er, they brought and said this is what you have to have, so I took it.**

V: Yeah.

k But then I, I found out what they were for afterwards.

V: **Right. So you taught yourself?**

k **Yeah.**

V: Right. Very good.

k I ...

V: I wa, I'm, I, I wa, I'm a bit surprised because I thought the medical staff and, or the nursing staff, you know, if, if needed they would, they will explain thi, explain it to you.

k I say, I, no, they brought these down, and this is your medication and that's ...

V: **But didn't tell you what it did.**

k **Well they told me it was a betablocker ...**

V: Ah yeah ...

k ... a, and ...

V: ... yeah.

k ... that covered my, that covered your stomach and that, and I said I can't take aspirin, well, they said we'll give you something to cover it, which Doctor x had said to me I must not take aspirin again because I'd had bleeding stomach ...

V: Right.

k ... er, but they found out that that was due to the fact that I had a bug, that I'd had it since I was born, and they only found it by taking a blood test and then ...

V: Aye I know.

k ... after I'd finished a breathalyser til ...

V: Yeah.

k ... **so that's, I had that and that was only er, Mr Y, oh it was Mr Z who said don't take aspirin any ...**

V: Right.

k ... more.

V: Right.

k Now he was a consultant.

V: Yeah.

k Er, I don't whether he's still up there.

V: No, I don't know.

k I don't think ...

V: No.

k ... he is.

V: **Q19** No. Well thank you kes, thank you ...

I: Yeah.

V: ... for that kes.

I: Yeah.

V: **About diet, you know the advice about diet ...**

I: Yeah, yeah.

V: ... you know, how useful was that. And did, did people ...

I: Well it ...

V: ... talk about the diet?

I: ... er, they told me er, don't have this, and if, Sr S. tol, talked to me about diet right at the beginning.

V: Who, who was S.?

I: It's so and so...

V: Oh of course ...

I: She was the only one who came down from the cardiology unit ...

V: Yeah.

I: ... and, and talked to me ...

V: Yeah.

I: ... and Sr S. just said, she said, what's your diet like, well I told her ...

V: Yeah.

I: ... **I said I have a cooked breakfast every morning but I said I grill my bacon, I use oil for cooking m, my eggs ...**

V: Yeah.

I: ... and, and this, she said oh well that's fine.

V: That's fine.

I: Er, she said ...

V: **Fish, did she mention about fish?**

I: **Yeah.**

V: Yeah.

I: **Well I have kippers twice a week.**

V: Nice one.

I: And er, we have fish twice a week.

V: Yeah.

I: And er ...

V: You're doing all the right things.

I: She said you er, what you're doing, I said well we, we have meat as well, she said well that's fine and the only thing that I've **altered I've got some er, semi-skimmed milk.**

V: Yeah.

I: I've, I'm ta, using semi-skimmed milk ...

V: Me too.

I: ... but my wife still uses her ordinary milk ...

V: Yeah.

I: ... and if we have a pudding she makes it with the ordinary milk.

V: Fair enough.

I: So, really on the diet side of it I'm, I'm ...

V: Pretty okay.

I: ... **and, and we, we eat a fair bit of fruit.**

V: **Q20:** Lovely. Thank you. **We're all getting older**, you know ...

I: Yes.

V: ... if you don't mind me saying (laughs) ...

I: (Laughs).

V: ... **yeah, how, does that affect your quality of life, if at all?** Or is it to do with your outlook?

I: Er, well ...

V: Does age influence it?

I: **Not really, no, no. I mean the thing is that I, I, I'm still doing what I did when I was 60.**

V: Right.

I: **And I'm trying to do what I did, a, a, and I think I can do what I did when I was 32 (laughs) but I can't.**

V: Aye yeah. That's fair enough, yeah.

I: **I mean, mentally, I think ...**

V: Do you think ...

I: ... I'm thirty ...

V: ... do you think it's ...

I: ... and I ...

V: ... it's a, it ...

I: ... **I've always said that up here (pointing to head)...**

V: **Right.**

I: ... **I'm thirty ...**

V: Yes.

I: ... and down here (legs), god only knows (laughs).

V: I know. I know. You have got a young outlook.

I: Yeah.

V: Yeah.

I: Well yeah.

V: Yeah.

I: That keeps you young.

V: It does.

I: Yeah.

V: It does. And you meet people you see at the Lodge, don't you ...

I: Oh yeah ...

V: ... you know, younger ...

I: ... yeah ...

V: people ...

I: ... yeah, you do.

V: ... and that's important ...

I: Yeah.

V: ... for you.

I: Yeah.

V: **Q21**: kes. Yeah. Okay. You know, Q 21, about, you know, like we're both men ...

k Yes.

V: ... and I was brought up, you know, quite, quite strict, quite Victorian in many ...

k Yeah.

V: ... ways ...

k That's right.

V: ... and, brought up in Ireland where there's a kind of a strict, you know, sharp ...

k Very.

V: ... **distinction between male roles and female roles** ...

k Yeah.

V: ... **and you might belong to that tradition** ...

k **No.**

V: No?

k **No, I don't think so, no ...**

V: No.

k ... no.

V: No, well, so, does, does these roles, you know, **things that we do as males and females, does it affect your quality of life.**

k **No.**

V: No.

k No.

V: Not an issue.

k **No, it's not an issue. I mean the thing is, if, if L.'s ill, I'll do it ...**

V: Exactly.

k **... I'll cook.**

V: Yeah, exactly. Not an ...

k And I, I, I ...

V: ... issue.

k ... and, and w, w ...

V: Hmm.

k ... if we can, if I can do the cooking I'll do it.

V: That's it. Are, are you a good cook?

k I can cook, yeah.

V: Right. Right. So it's not a big issue.

k No.

V: No worries.

k Definitely not.

V: For some people that would, you know, that question does matter to some people.

k Oh yeah.

V: Par, depending on the culture ...

k Yeah.

V: ... you know, some cultures have very strict, you know ...

k Oh, dividing ...

V: ... particularly ...

k ... lines.

V: Dividing lines.

k Hmm.

V: I don't think it's a, you know, erm, er, the same as, as it used to be, here, you know ...

k No.

V: **... it's, it's more blurred now the boundaries.**

k Well it is, yeah ...

V: Yeah.

k ... yeah.

V: Yeah. Now, coming ...

k I mean ...

V: ... to the very last now ...

k ... I mean, where is she, she makes me do the washing up, don't you (laughs).

k (Laughs). Right. That's me as well L. The last question ...

k I say, you make me do the washing up.

L: (wife).....Actually he does a lo, a lot really ...

V: I bet ...

L: ... he does.

V: ... he does ...

L: Hmm ...

V: ... ye, yeah.

L: ... yes he does.

V: Well there are some people, you know L., that will not, you know, there are some men and some women...

L: Yeah.

V: ... who won't cross the boundaries.

L: No. No. I mean he doesn't ...

V: Hmm.

L: ... **have to do housework, that doesn't come into it because I'm alright with that, but I mean he will help with cooking and, as you say, it's washing up and, well he just does things that need doing ...**

V: Yeah.

L: ... **and erm, I mean, what he does is quite a lot really, dealing with the car and the garden and ...**

V: That's right ...

L: ... and erm ... errands, you see I don't drive ...

V: I think he's fantastic, you know, I mean ...

L: ... to me, yes.

V: ... fantastic bloke.

L: Yeah. It's, it's just ...

k **Oh and I'll do the shopping as well.**

L: ... getting started ...

V: I tell you, a lot, he's an awful lot of girlfriends over in at the local CRP location

L: Oh they're all over the world ...

V: Oh. Tell you what ...

k (Laughs).

L: ... they're all, he, he, he's a charmer ...

V: ... they loved ...

L: ... he can't help it (laughs).

V: ... they loved him. Absolutely.

L: **But erm, really, it, it's amazing what's happened to him because I think confidence they ga, they gave you didn't ...**

V: **Ah good point. Good point.**

k **Well they, they said ...**

L: **Confidence ...**

V: **Good point. Yeah, yeah.**

L: ... and you see ...

k I miss 'em er, Vinny.

V: I bet you do.

L: ... be ...

V: Yeah.

k Yeah, I do.

L: ... before er, Desmond went there, when friends rang er, one or two people said er, oh, I went there, I, I, I was sorry I had to give up and someone rang ...

k So ...

L: ... here for an address of another friend and ...

V: Yeah.

L: ... er, just said he'd pass it, how are you, someone we've known years back but we don't see them really, and I mentioned about kes but he's going on alright now, he's starting these ex, I went there, I, I couldn't believe it, and I didn't want to give up.

k And we've, not ...

L: And we didn't know anything about it, you see ...

k ... not that we want to give up, hey I could tell you what ...

V: This is the rehab programme?

k Yeah.

V: Yeah.

k Vinny ...

V: How often ...

L: We didn't ...

V: ... were you there L.?

L: ... we didn't, pardon?

V: How often were you there?

k She didn't go.

L: Well I wasn't, this is ...

V: Oh you didn't go.

k No.

L: ... I, I, I'm just saying that people rang here for various reasons and when they asked about kes and I said what had happened, then I said well **he's going to go for this ...**

V: These exercises.

L: ... rehab ...

V: Yeah.

L: ... they said to me, oh, oh I went there. It was marvellous. I didn't want to give up ...

V: Aye.

L: ... Well we didn't know anything about it then ...

V: Yeah.

L: ... we thought, you know, what're you ...

V: You wasn't sure.

L: ... getting yourself into ...

V: Into. Yeah.

L: ... er, but when they said that we thought well it's got to be alright, various people have said, you know, we went it, was brilliant ...

V: Let's give it a go. Yeah.

L: ... and he benefited so much. But I think, because your walking wasn't very good when you went ...

k No. No.

L: ... it worried me did the walking.

V: Right. Right.

L: And er ...

V: **Has his walking improved now L.?**

L: Ooh ...

V: **Have you, do you think the walking's improved?**

L: ... it, it was one of the first things I noticed ...

V: Really.

L: ... walking.

V: Now.

L: Hmm.

V: Steadier on his feet.

k Well you see, the thi ...

L: Oh yes, because he ...

k ... **the thing is ...**

L: ... he, he was all over the place, he ...

k ... the thing is Vinny, I have a disabled ...

L: Yeah, but I'm going ...
k ... certificate, yeah ...
L: ... back ...
V: Yeah.
L: ... yeah, I'm going back ...
k Oh yeah.
L: ... kes ...
k When I'd just this, ...
L: ... to ...
k ... yeah.
L: ... the beginning when you went from rehab ...
k Oh yeah. Oh yeah.
L: ... your walking was bad then ...
k Yes, it was.
L: ... really bad ...
V: Why, why, why was that do you think ...
L: I don't, I don't know ...
V: ... why, why, is it just ...
L: ... it was something to do with his ...
k **Well my knee, my knee, my knees are bad actually Vinny.**
L: ... hmm, but, but it ...
V: Yeah. Yeah.
L: ... well they're always bad kes...
V: A bit of, maybe a bit of arth, arthritis in them is there?
k **Oh it is arthritis.**
V: Yeah. Yeah.
L: His knees have been bad for years but it wasn't that ...
k No.
L ... it was the way he walked, I mean I'm used to you when your knees are bad and, and all the rest, but it was different. His walking wasn't right and when he started going up there ...
V: Yeah, because it's a ...

L: ... after a couple ...

V: ... fairly, you know, the exercises are, you know, the, it's, it's ...

L: Yeah.

k (Laughs). They are, Vinny, you're not kidding!

V: ... well ...

L: And I, I said to him ...

V: ... I did level 4 you know, I di, I, I experienced level 4. Now I know erm, erm, kes didn't. I, I, I did level 4, without going through all the other levels ...

L: Yeah.

V: ... I'll tell you what, I struggled ...

k (Laughs).

V: ... at level 4 ...

k I'm not surprised.

L: Yeah.

V: ... you know, because what, what kes will have done, you know, erm, or other people that go from level 1, 2, 3 and 4 and they graduate upwards ...

L: Hmm ...

k Yeah.

L: ... yeah.

V: ... you know, Lily ...

L: Yeah.

V: ... they get more strenuous ...

L: Yeah.

V: ... but 'twas, wasn't easy.

L: **But the walking I noticed in the early days. I noticed a difference. And I said, you're walking better because he, he wa', sort of wo, wobbled about and, and on the pavement he would be on the inside and, and the outside and, and er, going down badly on one side, it was nothing to do with his knees because I know what his knees are like, for years ...**

V: Yeah.

L: ... I mean, for years ...

V: Yeah.

L: **... and the exercises corrected that.**

V: Yeah. Yeah.
k Yeah they were brilliant.
V: Yeah.
L: That was what I noticed, you know, as we went along at the beginning ...
V: Yeah.
L: ... and erm, this, this is it.

Q22: Already answered

V: **Q23**.....Asking you both now, it's the final question, is, is, would you, if there **was any improvements to the programme**, you know, what would you improve if you wanted to enhance the programme or to make it a bit better, would ...
k Give 'em a few more weeks longer.
V: Few more weeks longer. Right.
k (Laughs). Yeah, that, I'd ...
L: (Laughs). Yes, oh yes because ...
k ... I tell you what Vinny, I'd, I'd go still.
V: **Yeah. So psychologically he's improved.**
k P s y c h o l o g i c a l l y that was great!
V: Lots of confidence.
k Yeah.
V: Getting lots of knowledge ...
L: **Confidence** ...
k And, and, and ...
L: **Confidence.**
k ... you, whilst ...
V: Yeah, very good.
k ... you were there you gave confidence to other people who were there.
V: Lovely.
L: And he ...
V: Ah.
L: ... drew from ...

k Because I ...

L: ... other people who had gone longer than him, didn't you. You drew some things from that.

k Yeah, Les, Lesley just said ...

V: Abso ...

k ... **she said, you can't stop talking to people can you.**

V: Well absolutely, but, but it's a social, it's a social thing ...

k **It is, it was social** ...

V: ... you know.

L: That's just what you said.

V: It's soc ...

k ... that's ...

V: ... and they're a lovely group at the local CRP...

k They were.

V: ... you know, down at the hospital it's quite different.

k Is it!

V: It is. I don't know why.

L: Oh.

k Oh, up there ...

V: I'm not quite sure ...

k ... it's brilliant.

V: ... it's, oh it's, no, I don't mean, no, the programme's the same **but it depends on the groups ...**

k Yeah it does. Yeah.

V: ... you've different mixes of groups ...

L: Yes. Yes.

V: ... now the programme is the very same, but it's, there's something about the social, it's about the people that comes from this local area but ...

L: Yeah.

V: ... x is a nice area.

k Oh it is. It's lovely.

L: Oh that's right.

V: **D'you know what I mean. Around this area. So it might be to do with the social ...**

k **Yeah, and that, that's ...**

L: Yeah.

I: ... but Vinny, I mean ...

V: Economic environment. Hmm.

k ... I saw, I saw M., one of the other young fellas who was there, he's about 40-odd ...

V: Hmm.

k ... and he lives locally, well I gave M. a lift back every time from ...

V: Yeah.

k ... there ...

L: When you got to know him you did ...

k ... and, yeah ...

L: ... didn't you.

k ... and er, we saw him, didn't we ...

L: Yes.

k **... and it, it was like meeting a very old friend.**

L: Oh he was ...

V: Yeah.

L: ... so pleased. **They, they were both so pleased to see each other and there were people sitting round and looking as much as say what's all this, you know.**

V: Fantastic. That's ...

k Hmm.

V: ... brilliant.

k Oh I tell you what Vinny that ...

V: Really.

L: And the young ...

V: But he did marvellous as well, and he was very good and we, and we enjoyed, I mean, not just ...

L: Yeah.

V: ... you know, but he was, he was a lovely lovely patient to be at, at one of these ...

L: Er, yeah.

V: ... if everybody was like this man, my god ...

L: Yeah.

V: ... the world'd be a nice place.

L: **Well, you see, we're not all alike and some people aren't as fortunate as us because we've had a lot of good things going on in our lives and have got a lot of good friends ...**

V: That's right. That's right.

L: ... and if we don't see them, we keep in touch, we phone ...

V: You wonder where they are any ah.

L: **... because when you get to our age you lose your contemporaries, there's no doubt about it ...**

V: That's right.

L: ... five years that side, five years or less that side and ...

V: That's right. That might be ...

L: ... you know.

V: ... one, that might be an answer to one of the questions because as you ...

k Yeah.

V: **... get older ...**

k **Yeah.**

V: **... you lose your frie ...**

k **You lose your friends. Yeah, yeah.**

V: ... you lose more friends.

L: Oh yes. Yes, I ...

V: Yeah. That's a very good point.

L: ... I once ...

V: Very good point.

L: ... rang er, an old lady, she was over 90 and I assumed that other people were in touch with her because I'd gone to a group years ago, and I was a younger one then in, in the beginning and when I rang this lady ... she said to me, L., you're like a voice in the wilderness. And I said, what are you talking about ...

V: Hmm.

L: ... **she said, you are like a voice in the wilderness. I said, well, don't people keep in touch with you, and the people I assumed would always be in touch with her ...**

V: Didn't.

L: ... simply weren't. Not, not because they were unkind or anything like that, they probably were doing other things and, and thought ...

V: And maybe they thought other people was looking ...

L: ... I'll do that ...

V: ... aye. Well, both thinking in the same way and ...

L: ... correct ...

V: ... you know ...

L: ... correct. Somebody will be ringing her ...

V: ... and, and didn't get missed, and she gets missed. Hmm.

L: ... and I said, do you, do you mind if, if I point some in the, someone in the direction of you. Would, would it be alright if I, if I send a contact. And, from the Church, we, we have er, one or two and whatever reason, you don't have to be sick or anything like that, but whatever reason, if you need someone to talk to and so I spoke to this lady, C., and she went to visit and then she said something to someone else and then this lady after that had visitors ...

V: Yeah.

L: ... it, it ...

V: She was lonely.

k You see, well, this is ...

V: Yeah.

k ... this, this is the thing Vinny ...

L: It, it's just ...

k ... it, it's ...

L: ... and some ...

k ... what you do ...

L: ... **people might be sitting there, being lonely and other people thinking ...**

V: Oh ...

L: ... oh I must give her a call, I must give her a call ...

V: Yeah.

L: ... another day, another week ...

V: And then they says, oh well, if I know, maybe the other friends, you know, so you get, and then the per, the person gets missed. Other friends might be saying the same things, **it's oh well somebody else will probably be giving her a ring ...**

L: That's it.

V: ... and next thing between the devil, you know, between the, sitting between ...

L: It's the ...

V: ... two stools ...

L: ... breakdown.

V: ... and then you're just kind of, you know, you fall between two stools.

L: And I assumed, because where she lived there was a little community hall, and I said, I thought you would go to the community hall, well she said, I used to do but she said, now I can't get there. Er, and I think somebody er, called her and popped her down there ...

V: Hmm.

L: ... but er, she's gone now because er, well you took me to see her in hospital didn't ...

k Yeah ...

L: ... you and ...

k ... yeah.

V: Lovely.

L: ... and things evolved but ...

k Right.

L: ... there we are ...

V: Thank you L. ...

L: ... that's it.

V: ... thank you.

L: Anyway.

V: Thank you very much. That's very ...

L: (Laughs). I've made you wind up.

V: ... interesting. I'm, I am winding up now love.

L: Yeah, okay.

CONCLUSION

- V: **That's brilliant. That's, you know, is there anything I have forgotten.**
- k **I don't think so Vinny.**
- V: **Have I covered as much as I ...**
- k **I think you've ...**
- V: ... could?
- k ... **covered as much as you can for your research.**
- V: I've, I tr, I've tried to make it comprehensive even though there's a little bit of overlap.
- k Well, well, well, well that's it. I mean the thing is ...
- V: Yeah. Thank you.
- k ... but er, it's as L. said, the number of friends that we have ...
- V: Yeah.
- k ... I mean the thing is, it's not only my own Lodge Vinny, I had calls from people in other Lodges ...
- V: Right.
- k ... who I've known, who've rung me to say how are you, I heard you were badly.
- V: Yeah. Of course.
- k A lad who's still in the police er, ... his wife, last, not last week, the week before, we've seen in x place, not, we were long-lost ...
- V Thank you Kes and L. for all your help and a great interview
- K You are very welcome Vinny.

FINIS