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**AN EXPLORATION OF PHYSICAL ACTIVITY
AND QUALITY OF LIFE IN PEOPLE WITH
PSYCHOSIS**

JACQUELINE MARIE HARGREAVES

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

The University of Huddersfield

Submission date as May 2012

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Abstract

Background: Quality of life (QoL) is known to be lower in people with psychosis than the general population. Physical activity (PA) has been suggested as one way to improve QoL, but little is known about the relationship between PA and QoL in people with psychosis. No known research has implemented mixed methods (MM) to explore PA and QoL in people with psychosis. **Aim:** To explore if and how PA is associated with QoL in people with psychosis. **Methodology:** A MM design was implemented which consisted of three studies. Study one was a cross-sectional survey design, which assessed the relationship between PA and QoL (n=79). Study two was a phenomenological study which involved conducting semi-structured interviews with people who were perceived to be active by professionals or themselves (n=8). Study three entailed conducting focus groups with mental health professionals which were analysed using thematic analysis (n=10). **Results:** Study one: Those achieving PA guidelines scored significantly higher on physical QoL than those who did not meet the guidelines. Moderate and vigorous intensity PA were related to physical QoL and walking was associated with better social functioning. No PA variables were related to mental QoL. Study two: Four major themes emerged: 1) cocooned in a web of lethargy and tangled thoughts, 2) Experiencing a snapshot of reality, 3) Being 'normal', 4) Dance as if no-one is watching. Study three: Four major themes were found: 1) Service provision, 2) Professional interpretation of policy, 3) Professional personal experiences and beliefs, 4) Negative experiences. Upon synthesising the outcomes of the studies it was concluded that if PA was seen as meaningful to the individual it was beneficial for QoL. PA emerged as meaningful for the participants for the following reasons: it was perceived to develop self; provide time-out from symptomology; present the opportunity to break free into a real and social world; and enable self, mind and body to feel they belong and therefore feel 'normal'. However, the type, intensity, amount of PA and the stage of the participants' illness were all seen to influence the perceived impact on QoL. A number of implications for supporting PA services within Mental Health Trusts were suggested. The main finding in relation to service implications was that PA needs to be provided consistently and not in an ad-hoc manner which was found to be detrimental to Service Users routine and autonomy. Further, it is suggested that a broader range of PA provision should be available for those with psychosis to suit individual needs. However, consideration should be given to the intensity, amount and type of PA as well as the perceived severity of the illness. **Conclusion:** The findings from this thesis add support to the proposition that PA can be used to enhance QoL in people with psychosis. Professionals are encouraged to promote PA, with the caveat that it should be perceived to be meaningful by the individuals with psychosis.

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Although you have refrained from contacting me as much recently I always feel your support. Thank you for not calling as much and leaving me to work - I have missed hearing your voices.

Michelle and Mark

Let's go cycling!

List of abbreviations

BPN	=	Basic psychological needs
MM	=	mixed methods
MH	=	mental health component of QoL
PA	=	physical activity
PH	=	physical health component of QoL
QoL	=	quality of life
SU	=	service user

Dissemination of Knowledge

Invited speaker:

Hepples, J. (2010). *Physical activity as a mechanism for recovery in people with psychosis*. Best Practice in Psychosis Meeting. York. 17th September.

Presentations:

Hargreaves, J. Rodriguez, A. & Lucock, M. (2012). '*Sport pops that anxiety bubble*': *Physical activity in people with psychosis*. British Psychological Society Conference. London. 18th-20th April.

Hepples, J. Rodriguez, A. & Lucock, M. (2010). *Physical activity and quality of life in people with psychosis*. Research into Recovery Conference. London. 20th-22nd September.

Hepples, J. Rodriguez, A. & Lucock, M. (2010). *Mixing methods: An investigation into physical activity and quality of life in people with psychosis*. Qualitative Methods in Psychology Conference. Nottingham. 23rd-25th August.

Hepples, J. Rodriguez, A. & Lucock, M. (2009). *Physical activity and quality of life in people with psychosis*. PsyPAG conference. Cardiff. 29th-31st July.

Chapter 1

Introduction

It's hard being paranoid. It's not hard being high but it's hard being paranoid. And it's hard being schizophrenic because you are not part of society any more, you haven't got a job, you're not at university any more, you've got nothing left....OK you can feel on top of the world when you are on a high, but when you are not on a high ... you are at the bottom. And as much as schizophrenia can give great imaginative things, but it can also take all of your imagination away and leave you with....with just rock hard reality. No comforting job, no comforting relationships, no comforting anything. It is out of control, it is something that just happens. You get to the stage where you're thirty..... you feel like you've accomplished nothing, you're just walking down the street and that's all you are doing you're not thinking, you're not planning, you're not looking forward to anything, you're just walking down the bloody street. It gets a bit tiresome after a while (Walton, 2001, p.286).

There are occasions where living with psychosis can be debilitating, life can feel out of control, a person's identity can be challenged and life satisfaction is perceived to be poor. Psychosis has been found to result in high service and societal costs (Knapp, 2003) and the World Health Organisation (WHO) has stated that Schizophrenia is the fifth leading cause of DALYs (Disability-Adjusted Life Years) worldwide in the age group of 15–44 years (WHO, 2008). It is therefore not surprising that people with psychosis have been reported to present lower scores on quality of life (QoL) than the general population and those with somatic chronic conditions (Bobes and Gonzalez, 1997).

One potential avenue to QoL augmentation is through physical activity (PA). Studies have shown PA has the potential to improve physical, mental and social

functioning as well as offering a meaningful and purposeful experience (Biddle & Mutrie, 2008, Biddle & Ekkekakis, 2005; Carless & Douglas, 2008; Bize et al, 2007; Morgan et al 1969; Rejeski et al, 1996; Osei-Tutu & Campagna 2004;). An example of this is highlighted by a participant with schizophrenia undertaking PA, in an ethnographic study by Faulkner & Sparkes (1999):

Well, it got me out, for a start. Something new, something I hadn't done in a long time. And I felt better for it, felt I benefited from it a bit, you know. I felt a bit more mobile, getting around in general seemed to be a bit easier...I felt a bit self-stimulated, a bit proud of myself. I was actually doing something that was worthwhile and slightly constructive (p.63).

For the participant in this study, PA appears to have made life that little bit better. The current thesis aims to explore if and how PA is associated with QoL in people with psychosis.

This chapter will outline and discuss the three main foci of this thesis, namely psychosis, QoL and PA. These concepts will be defined, providing brief histories and discussion around related current policy. Where appropriate, different approaches to the concepts will be outlined and I will state what position will be adopted in this thesis. I will begin, however, by describing my interest in this area.

1.1 My interest

PA and mental health is an enduring and passionate interest of mine. This can be reflected in the work I have previously undertaken, which began with an investigation into PA and mood for my undergraduate dissertation. Since completing my undergraduate degree in 2003, I gained an MSc in Health Psychology and worked on PA interventions and a behaviour change programme with obese families. Alongside this work, I carried out voluntary work for mental health charities such as Mind, Mencap and Nightline. However, it was my work as a relief support worker for an NHS Mental Health Trust that re-ignited my desire to understand in greater depth PA and mental health. I was astounded by the lack of PA undertaken in mental health hospitals. After discussing the subject

with a number of service users (SUs), most of whom had psychosis, it became evident to me that some would appreciate greater opportunity to undertake PA. Feelings of frustration, boredom and incompetency surfaced from the SUs as a result of 'sitting around doing nothing'.

PA is extremely important to me and my well-being, therefore the inactivity on the wards appeared absurd. This was something which I felt deserved investigation and I began to search for PhD studentships which would allow me to research PA in people with psychosis. I subsequently found a studentship offered for the current thesis, which was entitled: 'PA and QoL in people with psychosis'. I applied and was fortunate to be offered the studentship and subsequently designed the current thesis within the broad remit of PA and QoL in people with psychosis.

1.2 Definitions and conceptualisations

A rationale for the current thesis will now be provided through a discussion of the three main concepts in this thesis: Psychosis, QoL and PA. This section will introduce the concepts, but more in depth analysis will be considered throughout this thesis.

1.2.1 Psychosis

Psychosis is the umbrella term used in this thesis to refer to a number of mental health problems which involve a fundamental distortion to a person's thought process (Davey, 2008). The most common forms of psychoses are schizophrenia and bipolar disorder, however there are a number of others including; schizophreniform disorder, schizoaffective disorder and major depression with psychotic features (Ehmann & Hanson, 2002).

Modern day mental health problems are diagnosed based upon a classification system proposed by Emlin Kraepelin's in the early 20th century. He claimed that there are a number of distinct psychiatric illnesses which can be categorised based upon certain symptoms. These symptoms were grouped together, based upon the presumption that each illness had a biological origin (Bentall, 2003). However the aetiology of mental health problems has still not been established

and the categories of mental health problems are constantly debated and altered (Bentall, 2003).

Difficulties in diagnosis and differences across cultures and countries using these classifications led to the development of the Diagnostic Statistics Manual, now in the revised version of the fourth edition (DSM-IV-TR) and the International Classification of Diseases now in its 10th edition (ICD-10). The terms used to describe a diagnosis in these classification systems are the dominant discourse in use today and they will be used in this thesis. However, the classification between schizophrenia, bipolar disorder, schizoaffective disorder and other psychoses are still disputed, with even Kraepelin recognising a significant overlap between these mental health problems:

We shall have to get accustomed to the fact that our much used clinical checklist does not permit us to differentiate reliably manic depressive insanity* from schizophrenia in all circumstances; and there is an overlap between the two (Hoff, 1992, pp.506-507).

Therefore, the term psychosis is used in this thesis to encompass all of these similar mental health problems. In addition, the term psychosis is used in policy, treatment and research to refer to the group of mental health problems it comprises.

Table 1.2.1 outlines the current characteristics for the most common forms of psychosis, which are schizophrenia and bipolar disorder. This is according to current ICD-10 criteria, which is used in the NHS Foundation Trust within which this thesis was undertaken.

* manic depression is the term formerly used to describe bipolar disorder

Table 1.2.1. Characteristics of Schizophrenia and Bipolar Disorder

Illness	Characteristics
Schizophrenia	Positive symptoms (excess/distortion of normal functioning): <ul style="list-style-type: none"> • Delusions • Hallucinations • Disorganised speech • Grossly disorganised/catatonic behaviour Negative Symptoms (decrease/loss of normal functioning): <ul style="list-style-type: none"> • Flattened affect • Alogia • Avolition
Bipolar Disorder	Repeated episodes in which mood and activity levels are significantly disturbed, on some occasions: <ul style="list-style-type: none"> • Elevated mood and activity (mania or hypomania)* • Lowering of mood and activity (depression)

* The difference between mania and hypomania are outlined below.

Mania may include the following symptoms (NHS choices, accessed 2010):

- feeling very happy, elated or euphoric (overjoyed)
- talking very quickly
- feeling full of energy
- feeling full of self-importance
- feeling full of great new ideas and having important plans
- being easily distracted
- being easily irritated or agitated
- being delusional, having hallucinations and disturbed or illogical thinking
- not feeling like sleeping
- not eating
- doing pleasurable things that often have disastrous consequences, such as spending large sums of money on expensive and sometimes unaffordable items.

Hypomania is classed as mild manic episodes. The symptoms of mania and hypomania are the same, apart from the presence of psychosis in mania (Benazzi, 2007). This is an unclear boundary that can lead to misclassification

(Benazzi, 2007). Only people who endure mania are classed as having a diagnosis of psychosis.

Most recent figures for England report prevalence rates for psychosis of 0.4%, (0.3% for men and 0.5% for women) (NHS Information Centre for health and social care, 2007), with the highest rates for men and women in those aged 35 to 44 years (0.7% and 1.1% respectively). The lifetime prevalence of schizophrenia is reported to be in the range of 0.5% to 1.6%; equating to about one person in every 100 experiencing a schizophrenic episode in their lifetime (Jablensky, 1995). Estimates of the prevalence of bipolar disorder are considerably variable according to the published figures, with reported lifetime prevalence ranging from 0.45 to 5.5%, depending on the study design, instruments used and diagnostic criteria (Morgan et al, 2005).

1.2.2 Current perspectives and treatments of psychosis

In considering PA and QoL in people with psychosis it is deemed imperative to discuss the various approaches to mental health as this may determine how and if PA could be recommended in the care of people with psychosis.

1.2.2.1. Biomedical approach

As aforementioned Kraepelin proposed that psychosis has a biological aetiology. This is known as the biomedical approach and has formed the foundation for modern day treatments which are mainly pharmacological in nature. The aim is to treat the perceived biological malfunctioning of the mind; which is believed to be in the brain.

Treatment of the biomedical approach

Since the classification of the different psychoses, various medical treatments have been tried and tested. In retrospect some of the most barbaric include lobotomy and insulin coma therapy, which were both dispensed of in the 1950's following high mortality rates, brain damage and the introduction of typical antipsychotic drugs (Tierney, 2000).

The development of typical antipsychotic drugs provided a more acceptable and less invasive means of controlling psychotic symptoms. There is a reduction in

psychotic symptoms, however they are not a cure and there are a number of undesirable side effects, such as extra pyramidal symptoms (Davey, 2008). Whilst these drugs are still in use a newer wave of antipsychotics have been developed, which are referred to as atypical antipsychotics. Atypical antipsychotics are at least as efficacious as typical antipsychotics yet produce fewer side effects such as involuntary motor behaviour disturbances (Csernansky & Schuchart, 2002). However, residual symptoms of psychosis are still reported (Patterson & Leeuwenkamp, 2008) and adherence is poor (Lieberman et al, 2005). Although some of the side effects of the typical antipsychotics are overcome, significant other side effects are evident with atypical antipsychotics. These include increased weight gain, increased risk of Type 2 diabetes, cardiac and sexual dysfunction (Üçok & Gaebel, 2008). Although symptoms of psychosis may be improved through medications, only small improvements in psychosocial functioning have been observed (Swartz et al, 2007). This is one of the most significant limitations of employing a wholly biomedical approach.

The biomedical approach has been heavily criticised for being reductionist, offering a one-sided perspective of mental health problems and failing to account for psychosocial factors in the aetiology or treatment of the disease (Richter, 1999). Clare (1976) pointed out that it is unhelpful to view mental health problems and normality as dichotomous and more helpful to see them as opposite ends of a continuum. This view of mental health problems means we can position ourselves as well as those with psychosis on the same continuum.

The biomedical approach also tends to render the patient as a passive recipient of medical treatment provided by experts, thereby limiting any sense of control over treatment or any clear sense of how treatment will help the person's QoL, hopes and aspirations. It emphasises the illness rather than the person, reducing the person to a diagnosis and its symptoms.

However, psychiatry and mental health care do now take into account some of these criticisms as a result of the emergence of two different approaches to mental health problems; the biopsychosocial approach and the recovery approach.

1.2.2.2 Biopsychosocial approach

Engel (1977) proposed the biopsychosocial approach as an alternative to the biomedical approach. This model suggests that psychological and social factors are of equal importance to biology in the aetiology and treatment of mental health problems. In addition, the aim of the model attempts to overcome mind-body dualism inherent in a biomedical approach. This approach recognises the heterogeneity of the mental health problems and looks to an interplay of genetic, biological, neurocognitive, psychological and social factors to understand the differences in onset, course and outcome (Davidson, 2003). It also enables a view of the person with psychosis as an individual, rather than a set of symptoms. Aspects of psychosis that are associated with treatment include isolation from friends and family, the psychological processes involved in the positive symptoms of psychosis and the family unit.

Treatment in the biopsychosocial approach

A variety of therapies have evolved under the psychosocial approach, such as social skills training, family therapy and cognitive therapies. NICE (2009) recommend that family therapy and Cognitive Behavioural Therapy (CBT) are used in the treatment of people with psychosis.

Family interventions consist of the family of the individual with psychosis (including siblings) attending structured support from a professional. These sessions provide support on education or treatment and can include crisis management work (NICE, 2009). Family interventions were included in the NICE guidelines as the evidence consistently found that family interventions reduced relapse rates and hospital admission (NICE, 2009).

A number of therapies are used under the umbrella cognitive therapies such as personal therapy, cognitive enhancement therapy, cognitive remediation therapy. The most widely used is CBT. CBT attempts to achieve a reduction of symptoms, reduction of relapse and enhanced functional capacity by challenging and replacing any dysfunctional beliefs that produce and maintain psychotic thinking (Davey, 2008; Dickerson & Lehman, 2006). There are ambiguous findings with respect to the effectiveness of CBT on a variety of outcomes in

psychosis (Morrison, 2009). This suggests that psychosocial therapies may not be sufficient to improve symptoms and CBT tends to be provided as part of a package of care to address a range of needs.

These therapies offer people with psychosis an option to improve the symptoms of their illness, as well as some of the social and psychological factors associated with psychosis. However, the focus is still on the reduction of symptoms and adherence to medical treatment, rather than a persons' recovery.

1.2.2.3 Recovery

Alongside the biopsychosocial movement, the recovery approach to mental health problems has emerged. The recovery approach states that the focus of mental health care should not be on alleviating symptoms, but on coping with psychosis and enjoying a better QoL, characterised by feelings of self-determination, self-efficacy, hope and purpose (Anthony et al, 2003). It does not commit to either a biomedical or biopsychosocial view of the aetiology of mental health problems, but states that recovery can occur whatever the belief of the aetiology of psychosis. Recovery is not reductionist and value is placed on personal narrative and accessing an individual's life experience which is viewed as integral to any treatment recommendation. It emphasises that people with psychosis should be encouraged to live a satisfactory life within the constraints of their mental health problem (Corrigan et al, 1999).

A central tenet of the recovery approach is that a person can recover their life without recovering 'from' their illness (Davidson et al, 2008) and states that a person may not become symptom free but that they can move ahead with life despite persistent symptoms. This is a fundamental difference between the recovery and biomedical approach which tend to suggest a life of psychotic symptoms and degeneration, providing little hope and control over their lives for people with psychosis (Kraepelin, 1895).

Treatment in a recovery approach

The emphasis for treatment in a recovery perspective is for empowerment, mentoring, social inclusion and creative risk taking (Social Care Institute for

Excellence, 2007). In a recovery orientation there is not one path to recovery, but many. Each individual will decide upon their own path, some will require the guidance of professionals, others will not. For mental health providers it is important to recognise that recovery is not only about the provision of mental health services but also non-mental health organisations, such as education, church and PA (Anthony et al, 2003). This may include improving physical health and reducing isolation. There are overlaps with the terms self-care and self-management in the recovery orientation and consistent with these terms, people with mental health problems use a number of strategies to cope with their diagnosis and to find meaning and purpose (Faulkner & Layzell, 2000). PA is one such strategy that appears to be used as a self-care behaviour (Lucock et al, 2011) and aids some people in their recovery (Carless & Douglas, 2008). In addition, PA has the potential to improve QoL in people with psychosis (Richardson et al, 2005).

1.2.3 Quality of life

QoL is a concept central to the recovery approach and is receiving increased attention from health, society and political circles. This is demonstrated with the UK Coalition Government (2010) implementing a QoL measure alongside the Gross Domestic Product (GDP) as a way of assessing the success of the country. Conservative Prime Minister, David Cameron (2010) stated that:

We will start measuring our progress as a country not just by how our lives are improving, not just by our standard of living, but by our quality of life (HM government, 2010).

Several definitions and methods of investigating QoL have emerged and therefore no clear consensus has been reached about how it should be defined. It is generally seen as a multi-dimensional concept that can be measured and perceived in several ways depending on the purpose of the study (Staniszewska, 1998). For the purpose of the current thesis, a health-related view of QoL is taken and the following definition is used:

Quality of life and more specifically, health-related quality of life refer to the physical, psychological, and social domains of health, seen as distinct areas that are influenced by a person's experiences, beliefs, expectations and perceptions (Testa et al, 1996, p. 835)

This definition outlines two major factors which require further consideration. The first point to highlight is that QoL is seen as multidimensional, consisting of physical, psychological and social domains. These domains are often measured on health-related quality of life (HRQoL) self-report measures. The literature often reports the outcomes of these measures as two summary scores of mental health (MH) and physical health (PH) and usually include a measure of social functioning (see section 2.1 for more detail on this).

The second consideration is that according to this definition QoL is influenced by a person's experiences, beliefs, expectations and perceptions. These concepts cannot be thoroughly explored on self-report measures and therefore qualitative methods would be better suited to obtaining this information. Therefore, this definition of QoL suggests that mixed methods (MM) would enable this to be explored (this is further considered in chapter three).

1.2.4 Physical activity

It is suggested that PA could enhance QoL in people with psychosis through improvements in physical, mental and social functioning (Richardson et al, 2005). Chapter two provides an evaluation of this literature.

There are a number of different terms associated with PA, such as exercise, sport and fitness. The terms are not always used consistently across studies and practice so this section will provide operational definitions and begin to highlight why PA may be important to the lives of people with psychosis.

Physical activity is defined as: 'any bodily movement produced by muscles that results in energy expenditure' (Casperson et al, 1985, p128). This is the term that will be used throughout this thesis and will be used as an umbrella term which will also encompass the terms exercise and sport, which are defined

below. PA can be divided into different categories, also known as types of PA. These categories are leisure-time (PA undertaken out of choice in an individual's free-time), transport (PA conducted with the purpose of travelling between two essential places, e.g. home and shopping centre), occupation (PA undertaken at work) and household (PA carried out to maintain a clean and tidy house). Most research has focussed on the leisure-time domain, which incorporates PA, exercise and sport conducted for leisure purposes (Bize et al, 2007). PA is also divided into different levels of intensity: Vigorous-intensity activity causes rapid breathing and a substantial increase in heart rate. Jogging is an example of this sort of activity (Haskell et al, 2007). Moderate-intensity PA is described as an activity that noticeably accelerates the heart rate, such as a brisk walk (Haskell et al, 2007). Low intensity is neither moderate or vigorous.

Some studies that are discussed in later chapters use the term **exercise** which is defined as a 'planned, structured and repetitive bodily movement carried out to improve physical fitness' (Casperson et al, 1985, p128). This term is often used interchangeably with PA, however, for consistency PA will be used as the preferred term wherever it is appropriate in this thesis. Another term that is associated with PA is **sport** which is defined as a sub-component of exercise whereby the activity is rule-governed, structured, competitive and involves gross motor movement characterised by physical strategy, prowess and chance (Rejeski & Brawley, 1988).

1.2.4.1 PA guidelines

When investigating the value of PA, it is believed to be important to consider the dose of PA which is regarded to have a positive effect on health. Dose consists of the amount, intensity and frequency of PA. The most recent guidelines outlined for PA in the general population are that healthy adults aged 19-65 years old should aim to undertake 150 minutes of moderate-intensity aerobic activity each week, or at least 75 minutes of vigorous-intensity aerobic activity per week, or equivalent combinations of moderate- and vigorous-intensity activities (Department of Health (DH), 2011a, O'Donovan et al, 2010). Aerobic activities are recommended to be undertaken in bouts of at least 10 minutes and ideally should be performed on five or more days a week. All healthy adults should also

perform muscle-strengthening activities on two or more days a week (DH, 2011a; O'Donovan et al, 2010). In the most recent Health Survey for England (HSE) which assessed PA (2008) it was found that only 39% of men and 29% of women achieved the recommended guidelines as assessed by a self-report measure. However the amount of people with psychosis meeting these guidelines in England is unknown.

These guidelines are predominantly based upon evidence obtained from research into PA and physical health parameters although they do consider studies of PA and depression. PA has consistently been found to be beneficial for both treatment and prevention of physical health conditions, including Cardiovascular Disease (CVD), diabetes, obesity and some cancers (von Hauswolff-Juhlin et al, 2009, Pederson & Saltin, 2006). Evidence has also consistently found that PA is beneficial in treating and preventing depression (Mead et al, 2009; Dunn et al, Clark & Chambliss, 2005) (A more thorough discussion of this evidence can be seen in section 2.2.3.2). The section below describes how both physical health and depression can be poor in people with psychosis and therefore the suitability of these guidelines for this population should be considered.

1.3 Psychosis and co-morbidity

Schizophrenia has been found to reduce an individual's lifespan between 13-30 years (Colton et al, 2006, Tiihonen et al, 2009). Deaths from suicide can partly explain this reduced lifespan with up to 30% of people diagnosed with schizophrenia attempting suicide at least once during their lifetime (Radomsky et al, 1999). However, natural causes can also explain the reduced mortality in this population as physical co-morbidities can be as high as 60% in people with psychosis (Ösby et al, 2000, Bartsch et al, 1990, Berren et al, 1994).

People with psychosis have an increased risk of developing physical health problems such as obesity, CVD and diabetes (Richardson et al, 2005; Regenold et al, 2002, McIntyre et al, 2005). CVD related deaths are at least 6-fold higher in people with a diagnosis of schizophrenia than the general population and form the largest contribution to the excess mortality observed in the disorder (Goff et al, 2005). Bipolar disorder has also been found to be associated with an

increased risk of CVD, as well as metabolic, pulmonary, haematological, neurological, infectious and endocrine diseases (Carney et al, 2006). Explanations for this increase in co-morbidities are often associated with the increased rates of smoking, alcohol and drug use, and obesity in people with psychosis (Kilbourne et al, 2007).

Obesity is consistently related to people with psychosis. In people with bipolar disorder, 49% have been found to be classified as obese (Fagiolini et al, 2005). Allison et al (1999) classified 42% of adults with schizophrenia as obese compared to 27% of the general population. More recent data claims that obesity levels in people with psychosis are increasing at a similar or greater rate than those without psychosis (Allison et al, 2009). Weight gain is associated with poorer QoL for people with psychosis (Allison et al, 2003) and a higher Body Mass Index (BMI) and Waist Circumference (WC) is also associated with poorer PH on a QoL measure (Faulkner et al 2007a).

The aetiology of an increase in weight gain and somatic physical conditions in people with psychosis is disputed. Genetics, the side-effects of medication, lifestyle factors and cognitive functioning are all suggested as reasons for the increase in weight gain. However, anti-psychotic medications are consistently found to be associated with weight gain in people with psychosis (Elmslie et al, 2000, Green et al, 2001). Green et al (2004) claim that 40-80% of people treated with antipsychotic medication will experience weight gain that exceeds ideal weight by greater than 20%. The importance of improving physical health of people with psychosis is further emphasised by the finding that poor physical health is related to poor QoL (von Hausswolff-Juhlin, et al, 2009; Kurzthaler & Fleischhacker, 2001).

Co-morbidities with other mental health problems, specifically depression, are also associated with a diagnosis of psychosis. A wide range of prevalence has been found in studies assessing depression and psychosis, ranging from 7-75% (Sim et al, 2004). Despite this range, co-morbid depression has been reported to be associated with overall less beneficial outcomes than those without depression, including poorer recovery, less employment, lower activity,

increased rates of rehospitalisation and greater suicidal tendencies (Sands & Harrow, 1999; Siris, 2001). In addition, higher levels of depression in people with psychosis are associated with poorer QoL (Narvaez et al, 2008).

As both the co-morbidities of poorer physical health and depression are related to poorer QoL, it is important to consider the benefits of PA. PA has been reported to enhance QoL in the general population (Bize et al, 2007) and in those with chronic physical health problems (Rejeski et al, 1996). It has also been argued that achieving the PA guidelines could be sufficient PA for an improvement in QoL (Vuillemin et al, 2005), but this is unknown in people with psychosis (for a full review of the literature see chapter two).

1.4 Theory of PA and QoL

A variety of psychological and physiological mechanisms have been postulated which could explain why PA could be beneficial for QoL. One such theory is Self-Determination Theory (SDT), which incorporates some of the key principles of recovery. According to SDT, QoL is associated with the satisfaction of three basic psychological needs (BPNs); autonomy, relatedness and competence (Deci & Ryan, 1995). Autonomy is concerned with the individual's ability to choose and to control their decisions. Relatedness refers to the degree to which an individual feels a sense of connectedness to others in the immediate environment and feels secure within their environment. Competence refers to a person's perceived ability to conduct desired behaviours (Deci & Ryan, 1985). It is claimed that if these BPNs are satisfied, people will integrate psychological structures into their self and experience a better QoL than in those people where these BPNs are thwarted. People will be unable to satisfy these BPNs if a person perceives their context to be overly controlling, too challenging or be socially rejected (Deci & Ryan, 2002). If these BPNs are not satisfied, psychopathology, personality maladjustment and misery may occur (Deci & Ryan, 2002). It is therefore suggested that these BPNs are thwarted in people with psychosis who are not in recovery. PA has been found to improve autonomy, competence and relatedness in the general population (Carron & Burke, 2005; Gagne et al, 2003; Standage et al, 2005; Wilson et al, 2006; Fox, 1997) and in those with mental health problems (Hodgson et al, 2011, Crone, 2007; Carless & Douglas, 2008). It is

therefore suggested that SDT could explain the potential relationship between PA and QoL in people with psychosis.

There may be many other reasons that explain any potential relationship between PA and QoL. Therefore it is argued that an exploratory approach, using a combination of methods is required to thoroughly understand this phenomenon. Chapter three sets out further rationale and justification for the methodological approach adopted in this thesis.

1.5 Professionals' perceptions

In considering the potential role of PA and QoL for people with psychosis, it is important to understand professionals' assumptions and experiences. It also enables an investigation into the type of PA services available through mental health services and what could facilitate or provide a barrier to PA service implementation. It has previously been reported that PA is neglected in mental health services (Callaghan, 2004) and that the attitudes of mental health professionals could inhibit PA in SUs (McKenna et al, 1998; Dean et al, 2001; Faulkner & Biddle, 2001). It has been found that although professionals claim to have dispensed with a mind-body dichotomy and treat people holistically, they often view PA as the remit of physical health professionals and do not necessarily see it as their job to promote PA (Dean et al, 2001; Faulkner & Biddle, 2001). However, new guidance has been issued in the UK which encourages improving physical health outcomes in people with mental health problems (DH, 2011b; DH, 2004). Understanding the perspectives and experiences of professionals under the new guidance could add greater depth and a clearer overall picture of the phenomenon of PA and QoL in people with psychosis. These new guidelines and policy are now discussed.

1.6 Policy

Although the issues of poor mortality and morbidity in people with psychosis have been discussed in the literature throughout the 20th century, policy is only just beginning to acknowledge this problem. Mental health clinicians largely focussed on providing mental health services, which did not account for the physical health of the population which they cared for and other physical health

care professionals paid scant attention to the population of individuals with psychosis (Druss & Bornemann, 2010). In 2004, the Department of Health released a White Paper entitled: 'Choosing Health: Making Healthy Choices Easier'. This acknowledged that QoL and physical health are worse in people with mental health problems and this should be improved. PA was one recommendation for aiding this process. This document has been superseded with a new White Paper from the coalition government in 2010 titled: 'Healthy Lives, Healthy People: Our strategy for public health in England' (DH, 2010). In this paper, the focus is still on improving QoL and PA is promoted; however the focus is also on empowering individuals and communities to take action to improve their own lives. Improving mental health appears to take a central place and the Department of Health (2011b) have recently produced new guidelines called: 'No Health, without Mental Health'. These guidelines build upon the previous white paper by outlining six objectives, these are:

- More people will have good mental health
- More people with mental health problems will recover
- More people with mental health problems will have good physical health
- More people will have a positive experience of care and support
- Fewer people will suffer avoidable harm
- Fewer people will experience stigma and discrimination.

An accompanying document: 'No health, without Mental Health, Delivering Better Mental Health Outcomes for People of all Ages' (DH, 2011c) aims to establish how these objectives can be reached. However, the focus appears to be on screening and assessing behaviours such as smoking and there is no focus on the assessment, promotion, or guidelines on the delivery of PA.

Recovery appeared for the first time in policy in the UK in 2001 in a policy document entitled: 'The Journey to Recovery: The Government's Vision for Mental Health Care'. Although the document promoted recovery as a good idea, implementation of the concept was not proposed. In 2005, a guiding statement on recovery was published, consisting of a document on emerging best practices

(National Institute of Mental Health in England (NIMHE), 2005). These guidelines include issues such as: the clinician's role and community supporting role in the contexts of clinical care; peer support and relationships; family support; work/meaningful activity; power and control; stigma; community involvement and access to resources and education at the different phases of recovery (Ramon et al, 2007).

Social inclusion, according to Repper & Perkins (2003) is an integral aspect of recovery. Presently there is a social inclusion programme within the NIMHE (Morris & Bates, 2003). The report 'Mental Health and Social Exclusion' (Office of the Deputy Prime Minister, 2004) outlined a number of areas in which social integration for people with mental health problems could be enhanced. These included: tackling stigma and discrimination; encouraging vocational activity; encouraging employability and supporting families and community participation.

NICE guidance for schizophrenia (2009) outlines that recovery should be promoted. However, this fails to acknowledge the central tenets of recovery as the focus is still on adherence to medication and a poor response to treatment. In both NICE guidance for schizophrenia (2009) and for Bipolar Disorder (2006) physical health checks are recommended and PA is suggested as a method to improve physical health but no specific guidelines are provided. PA is recommended for individuals in a depressive phase of bipolar disorder, however, this is based upon evidence from people with a diagnosis of unipolar depression.

NICE (2009) guidance states that people with mild-moderate depression should be encouraged to undertake structured, supervised exercise programmes, three times a week (45 minutes to one hour) for 10-12 weeks. Because of the high comorbidity of depression in people with psychosis, this guidance could be relevant to those with psychosis and underlies the importance of considering the extent of depression in people with psychosis. This guidance does not outline how PA could be used in recovery or to increase QoL and it is unknown how PA could be beneficial for people with psychosis.

Overall, mental health policy acknowledges that physical health and QoL in people with psychosis needs to be improved. PA is one method that is proposed

to help improve physical health. Although PA is highlighted as one way to improve the physical health in people with psychosis, it does not outline how it could be beneficial for the person as a whole or how it could be beneficial to a person's mental health. This suggests that although there is progress in the promotion of PA, a mind-body dichotomy still underpins policy. PA is seen as beneficial for physical health but the benefits for the person as a whole and their recovery are often ignored. This may be due in part to limited research into the relationships between PA and QoL in people with psychosis.

1.7 Summary, research questions and aims

The recovery approach to psychosis is increasingly advocated. One of the central tenets of recovery is that an individual's QoL should be enhanced through meaningful occupation. Enhancing QoL in people with mental health problems is frequently promoted in policy and research. PA is proposed to be one tool which could enhance QoL as it could be beneficial for physical health and mental health. However, little is known about this relationship. Therefore, an exploration of PA and QoL is required to understand if PA can indeed be beneficial and if so how. The PA guidelines recommended for the general population should be considered in assessing the dose of PA and its relationship to QoL. These guidelines should also be considered to investigate if these are appropriate and achievable for people with psychosis, living in the community. In addition, professionals' perceptions should be obtained about existing or potential PA services, taking into account recent mental health policy.

The research question, for the current thesis is: How is PA related to QoL in people with psychosis?

This will be subdivided into five aims, these are:

- 1) To assess the amount of PA in people with psychosis
- 2) To investigate any relationship between PA and QoL in people with psychosis.
- 3) To investigate if BPNs and depression mediate any relationship between PA and QoL.
- 4) To explore the lived experience of PA and QoL in people with psychosis

- 5) To explore the perceptions of mental health professionals with regard to PA services and PA and QoL in people with psychosis.

Three studies are designed to assess these aims and chapter three will further explain the methodology implemented to investigate these aims. The methods and findings of the three studies are discussed in chapters four, five and six. The thesis culminates in chapter seven which entails a synthesis of these findings.

The next chapter is the review of literature, which provides further justification for this thesis and the methodology implemented.

Chapter 2

A Review of the Literature

Our muscular vigor [sic] will....always be needed to furnish the background of sanity and cheerfulness to life, to give moral elasticity to our dispositions, to round off the wiry edge of our fretfulness and make us good-humoured (James, 1899 pp.206-207)

This chapter will consider the literature which demonstrates a gap in current knowledge around PA and QoL in people with psychosis. It also provides further rationale for the aims and research questions of the current thesis set out in the introduction. It is presented in three main sections. The first section will discuss the literature around PA and QoL in the general population. The second section will consider the literature which has investigated PA and psychosis, and the third section will review the evidence which has studied the concepts of PA and QoL in people with psychosis. There will then be a review of possible explanations of the relationship between PA and QoL. Throughout this review there will be a critical reflection on the type and quality of studies conducted to date and this will support the methodological approach taken in this thesis which is also more fully explored and justified in chapter three.

2.1 PA and QoL

The focus of this section is to review the evidence which has investigated the relationship between PA and QoL. Most of this research has used health-related QoL (HRQoL) measures as the focus has been on the association between the two concepts rather than exploring how PA could be beneficial to QoL.

Before describing the literature which is specific to the relationship between PA and QoL, a discussion of HRQoL measures is outlined. There are many multi-dimensional measures of HRQoL, which assess a variety of different domains. The most frequently used in the studies reviewed is the SF-36 (Ware & Shelbourne, 1992) (also known as the Rand 36-item Health Survey), and the

SF-12 which is short version of the SF-36. As well as providing summary scores for MH and PH, this scale assesses the following domains of HRQoL: physical functioning, bodily pain, role limitations due to physical problems, role limitations due to mental problems, mental health, vitality, social functioning and general health. On some occasions, different measures of HRQoL have been used which have assessed different domains to those on the SF-36 and SF-12 and these will be highlighted upon consideration of studies which implemented these measures.

Bize et al (2007) conducted a systematic review into PA and HRQoL in the general population and reported that PA was consistently associated with some domains of HRQoL. The review concluded that the physical functioning and vitality domains of the SF-36 were most consistently associated with higher PA levels, whereas other domains including the summary score of MH were equivocally related to PA. However, this conclusion was only based upon cross-sectional and therefore correlational research. Bize et al (2007) claimed that there was insufficient evidence from prospective or experimental evidence to offer further understanding about this relationship. Furthermore, these studies did not take into account amount, intensity and type of PA. It seems likely that different types and intensities of PA may have differential effects on QoL for different people, so including an assessment of intensity and type of PA would seem important. It may offer some explanation as to why some domains of HRQoL appear to be associated with PA but others are not. Intensity of PA is also an important consideration with respect to the recommended guidelines (DH, 2011) which state that moderate-vigorous intensity PA should be undertaken for health benefits.

2.1.1 Intensity, type and amount of PA on QoL

Blacklock et al (2007) posted self-report measures of PA and the SF-36 to a random sample of a 1,000 people in Canada. 351 questionnaires were included in the final analysis. It was found that people who met guidelines of 150 minutes moderate intensity PA reported higher HRQoL on the general health, vitality and social functioning domains of the SF-36 than those who did not meet recommendations. This study found that low intensity PA was not associated

with any of the HRQoL domains whereas moderate and vigorous intensity was associated with general health and vitality domains. Although a random sample of the population were sent the questionnaires, it is feasible that only those who demonstrated some interest in PA returned the questionnaires. However, this finding has been supported by others. Interestingly, Vuillemin et al (2005) also analysed PA and HRQoL data from returned postal questionnaires, but a much larger sample (5,654 in total) was assessed. This study was carried out in France and also found that HRQoL was significantly higher in those that met PA guidelines. However, unlike the study carried out by Blacklock et al (2007), this study found that meeting PA guidelines was beneficial for all domains of HRQoL as measured by the SF-36. In addition, it was found that the higher the intensity of leisure-time PA, the higher the HRQoL on all of the sub-scales of the SF-36. However, data was used from a larger study where participants were enrolled in a nutrition intervention study and therefore may have had healthier lifestyles. This may partially explain why there was a high level of HRQoL on all the domains.

The finding that the higher intensity of PA is associated with higher scores on HRQoL, is also supported by Cerin et al (2009). However, this study only investigated the summary score of MH which was also assessed on the SF-12. Once again, a postal questionnaire was the method of choice, with 2194 Australian adults returning the questionnaires. It was found that only vigorous intensity leisure-time PA was positively associated with MH. This could explain why previous cross-sectional work has not found an association between PA and MH if intensity is not investigated. This finding is supported through evidence which has compared various intensities of exercise classes (McGrath et al, 2010). They found that the more intense modes of PA of strength training and aerobic exercise were related to a higher level of HRQoL on all domains of the SF-36, including MH. This study recruited people who chose to regularly attend PA classes. Therefore, it is reasonable to assume that the participants were seasoned exercisers and their bodies were conditioned to undertake more intense forms of PA. In contrast, some studies have demonstrated that higher intensity PA could be detrimental to mental health for less active individuals (Parfitt et al, 1994; Boutcher et al, 1997). This suggests that the relationship

between intensity of PA and QoL varies between individuals, and this may be an important consideration in people with psychosis who have been found to have a reduced tolerance to PA and are at greater risk of poor physical fitness (Shah et al, 2007).

These studies suggest that intensity of PA may impact upon domains of HRQoL, however, other factors such as type of PA could also explain how PA could be beneficial for HRQoL. Jurakić et al (2010) assessed the four domains of PA (transport, occupational, household and leisure-time) and HRQoL as assessed by the SF-36 in a cross-section of participants from Croatia. Leisure-time PA was the only PA domain positively associated with any of the HRQoL domains (vitality and MH) whereas transport PA was inversely related to physical functioning in both women and men and bodily pain, social functioning and PH only in men. Household PA was also significantly negatively associated with bodily pain and MH. Although significant correlations were found these were weak in strength; all were under 0.20. In addition, participants from a Croatian population may behave differently to those from the UK.

Cerin et al (2009) investigated the four domains of PA on QoL in an Australian population and found some similarities to those outlined by Jurakić et al (2010). They carried out a cross-sectional study of 2,194 participants and used the SF-12 but only assessed the MH summary score. Only leisure-time PA was positively associated with MH. Household PA was negatively associated with MH in women and transport PA was negatively associated with MH in the obese population. Although this research was not carried out in people with psychosis the implications may be important as people with psychosis undertake a lot of transport PA (Soundy et al, 2007a; McCleod et al, 2009) and as aforementioned, obesity is common in people with psychosis. The relationship between transport and household PA and poorer MH could be explained because these are activities people may feel obliged to undertake (Cerin et al, 2009). It is claimed that the level of self-determination a person feels towards PA will influence their psychological reactions (Sonnentag, 2001). For instance, Dayley & Maynard (2003) demonstrated that greater negative affect was reported during and after exercise if participants had not chosen to undertake that PA. This was compared

with performing a type of PA they had chosen from a number of options and also compared with a control of watching TV.

To summarise this section, the literature reviewed from the general population about dose of PA and HRQoL, suggests that a relationship exists between PA and HRQoL. However, there is variation in which HRQoL domains are associated with PA, depending on type of study and the type and intensity of PA. However, it appears that leisure-time PA is the only domain of PA to be consistently related to HRQoL domains, especially MH. In addition, the evidence presented frequently suggests that PA should be of at least moderate intensity, with some evidence that vigorous intensity PA may be required for it to be associated with MH. This relationship is yet to be assessed in those with psychosis where it is perceived to be important to consider factors such as intensity which could be detrimental to some aspects of mental health (Berger & Motl, 2000) and QoL (Brown et al, 2004). Issues of control, self determination, autonomy and choice are likely to be important and will be explored further in the current thesis.

This section has only considered studies which have assessed the relationship between PA and the various domains of QoL. This ignores the experiences of QoL and provides limited information on how individuals may differ with respect to types and intensities of PA. Exploration of experiences of PA will also help us understand how people may benefit, or indeed any harmful effects.

2.2 PA and Psychosis

Before considering the literature which investigates PA in people with psychosis it is important to review the literature which has assessed how much PA this population undertakes.

2.2.1 Prevalence of physical activity in people with psychosis

Conflicting results have emerged about the prevalence of PA in people with psychosis, as broadly speaking some research suggests PA levels are lower in people with psychosis than the general population whilst other research suggests PA levels are similar to the general population.

Cairney et al (2009) compared patterns of PA in people with bipolar disorder, depression and the general population from a population based survey (bipolar disorder, n=831; depression, n=4,713 , no identified mood disorder, n=31,834). They found no differences between the groups for amount of PA. However, Elmslie et al (2001) found people with bipolar disorder carried out less PA than those in the general population. These results may differ from those of Cairney et al (2009) as the sample were drawn from mental health outpatient clinics, rather than the general population and therefore the participants may be more acutely ill which could affect PA levels (Cairney et al, 2009). However, these findings are consistent with Brown et al (1999) who found only 19% of men and 15% of women reported at least one moderate PA session in the previous week and 36% of men and 32% of women stated that they did no exercise. This was less than the levels of PA reported in the general population as assessed by the 1993 Health Survey for England (HSE) (Bennett et al, 1995). This research is now dated but is in accordance with Lindamer et al (2008) who found that levels of PA were significantly less in those with schizophrenia, compared to a non-psychiatric comparison group. On a self-report measure of PA, people with schizophrenia reported an average of 11 hours per week of PA, whereas the non-psychiatric group reported 32 hours per week. In the studies outlined above only leisure-time PA was considered. Roick et al (2007) also took into account daily PA as well as leisure-time sport and found that those with schizophrenia undertook more sedentary activities than the general population and spent significantly less time participating in sport. This information is useful but it does not identify how many people with psychosis achieve public health recommendations.

Faulkner et al (2006) found that only 25.7% of 35 outpatients with schizophrenia in Toronto met the recommended 150 minutes a week of PA. However, this is the lowest percentage of people meeting the guidelines from studies found in different parts of the world. McLeod et al (2009) compared PA rates for people with schizophrenia to norms of the general population from data gleaned from the Active Australia Survey (AAS; Armstrong et al, 2000). This study found that 49% of people with schizophrenia reported achieving the recommended 150 minutes or more over the preceding week compared to 56% of the general Australian Population. They also found a greater proportion of study participants (82.5%)

engaged in one or more sessions of walking as compared to the general population (72.2%). The rate for vigorous activity was only just greater in the general population - 37.7% compared to 34.1% for the schizophrenia group. Shorter bouts of walking for those with schizophrenia were found, reflecting the use of walking as primary means of transport. Daumit et al (2005) found similar PA patterns in people with Severe Mental Illness (SMI) in Maryland, USA. Although overall PA was higher in the general population, the proportion of people meeting the PA guidelines was equal, but people with SMI were more likely to walk as their only form of PA. A survey carried out in Scotland found similar results to the Australian and USA surveys; 59% of the schizophrenia population considered themselves active, whereas 56% of the general population did (McCreadie, 2003). However, only descriptive statistics were provided so it could not be established if these results were significantly similar.

Self-report measures of PA were used in all of the studies outlined above; nevertheless only the Faulkner et al (2006) study used a measure that is validated for use in a population with psychosis. Employing self-report measures could be problematic in this population as PA behaviour has been reported to be unstructured and of low to moderate intensity and this type of PA can also be difficult to accurately recall (Soundy et al, 2007b). Accurate recall may be a particular problem in this population as they have been identified as having shorter attention spans and short-term memory deficits and can have problems with comprehension, information retrieval and reporting (Farnham et al, 1999; Durante & Ainsworth, 1996). It could be argued that PA should be assessed objectively in this population due to the highlighted cognitive limitations. Measures such as accelerometers have been used successfully in people with psychosis (Poyurovsky et al, 2000); these are objective measures of PA that assess amount and intensity of PA. There is great variation in the type of accelerometers but essentially they are small, easy to use and there are reports of people with psychosis enjoying using them (Faulkner et al, 2006; Soundy et al, 2007b). However, accelerometers are expensive, time-consuming and can increase the burden on the participant as they are expected to wear them all day every day for 7 days. Accelerometers also rely on participants continuously wearing the equipment, if too little data is collected from the accelerometers the

information cannot be used and this could be a difficulty in people with psychosis (Lindamer et al, 2008). In addition, accelerometers are reactive in that wearing them can increase PA. Self-report measures overcome this problem - they do not increase PA as they ask people to retrospectively recall their PA, usually over a 7-day period. However, socially desirable responding is common in any self-report measure. There are clearly strengths and limitations for each method but self-report measures have a number of clear advantages – they are convenient to administer, cost-effective and can provide information regarding the types of activity undertaken, as well as being able to establish an estimate of energy expenditure (Westerterp, 1999).

A major criticism of the literature outlined above is that the self-report PA measures employed were on the whole not validated for use in people with psychosis. However, validated measures have been used successfully in this population (see section 4.3.3.3 for a discussion of these).

In summary, there are equivocal findings with respect to the dose of PA undertaken in people with psychosis. The amount of PA undertaken by people with psychosis in England has not been assessed since Brown et al (1999) and this was not assessed with respect to the recommended PA guidelines (DH, 2011). In addition, there are no known previous studies which have assessed amount of PA in comparison to the guidelines in this population using a validated measure.

If the dose of PA is known this can be related to QoL to assess if the guidelines are sufficient to enhance QoL in people with psychosis. Further consideration will now be given to a review of the literature which explores some of the potential reasons why PA may be beneficial in people with psychosis.

2.2.2 PA and physical health outcomes

As outlined in the introduction, people with psychosis have poorer physical health than the general population and this has been found to be related to poorer QoL (Allison et al, 2003). Vancampfort et al (2010) reported that limited PA in people with schizophrenia is associated with detrimental cardiometabolic effects. Cardiometabolic factors include obesity, hypertension, hyperglycaemia and dyslipidemia which lead to increased risk of CVD. Therefore, a more in depth

consideration of the literature of PA and physical health outcomes in people with psychosis is believed to be important.

Dodd et al (2011) implemented a 24-week aerobic exercise programme for people with psychosis, with the aim of reducing Body Mass Index (BMI) and improving fitness. BMI was found to be significantly reduced but there was no change in fitness. Only eight participants took part in this study and there was no control group but it highlights that this type of PA programme is feasible in people with psychosis to promote weight loss. However, other studies have found an improvement in fitness. For example, Marzolini et al (2009) & Beebe et al (2005) both employed small randomised control trials (RCTs) to assess a number of outcomes of PA in people with psychosis and fitness was found to be improved in both studies. The other outcomes are discussed in section 2.2.3.2. An improvement in fitness has also emerged through interviews with participants who undertake PA in qualitative studies (Carter-Morris & Faulkner, 2003; Carless & Douglas, 2008).

PA interventions were also found to improve physical health outcomes in a review investigating PA and cardiometabolic parameters (Vancampfort et al, 2009). A modest reduction in weight loss, reductions in systolic and diastolic blood pressure and decreases in fasting plasma concentrations of glucose and insulin were found. However, optimal dose of PA for cardiometabolic benefits was not identified. In addition, most of the studies included in this review entailed dietary intervention, making it difficult to determine the extent to which PA was directly responsible for these improvements.

Weight loss, through lifestyle interventions have frequently been reported to be a benefit of PA in people with psychosis (e.g. Beebe et al, 2005). Faulkner et al (2007a) concluded in a Cochrane review that lifestyle interventions for weight loss, including PA, are just as effective as pharmacological strategies. However, they stated that interpretation of these results is limited because of a small number of studies, small sample sizes and variability in the interventions. Nevertheless, the results of these studies indicate that PA interventions are

possible and successful in terms of physical health gains in people with psychosis.

2.2.3 PA and psychological health outcomes

2.2.3.1 PA and self-management of symptoms of psychosis.

As previously stated, the focus of a recovery approach in mental health care is to enhance QoL and to move away from a pre-occupation with the elimination of symptoms. However, coping with these symptoms is something which participants often describe as being beneficial for their QoL (Faulkner, 2005; Pondé et al, 2009).

Falloon & Talbot (1981) used interviews carried out by psychiatrists to explore how people cope with auditory hallucinations. The results of these interviews were systematically categorised and it was reported that at least 57% of people with psychosis seek out PA to manage their auditory hallucinations. Yagi et al (1991) found similar results when analyzing coping strategies from participants with either schizophrenia or depression. Psychiatric interviews were the method of choice in this study and it was concluded that in comparison to people with depression, people with schizophrenia successfully cope with their acute psychosis by an increase in PA, whilst people with a diagnosis of depression do not use PA to cope with their symptoms. These studies suggest that people seek out PA to help cope with their symptoms, rather than it being something which is encouraged by mental health professionals.

In contrast, PA did not emerge as a behaviour which was used to cope with the symptoms of psychosis in a study carried out by Pondé et al (2009). In this study, participants with psychosis were interviewed about the role of leisure in their life. Although PA was outlined as a tool to aid QoL, it did not emerge as a means to cope with symptoms. This is supported by a study carried out by Carless & Douglas (2010) which explored the experiences of PA in people with psychosis. They reported that there was an absence of talk about symptoms and it was rare that PA was described as a strategy to alleviate symptoms. However, the study did find PA to be a meaningful activity which enhances recovery. These studies provide equivocal findings which could be as a result of the way

questions were framed. All four of the studies outlined above used interviews, however, there were differences in the emphasis of the studies. The studies by Falloon & Talbot (1981) and Yagi et al (1991) were focussed on exploring what strategies were used to cope with the symptoms of psychosis. These were carried out by psychiatrists, who may focus predominantly on psychotic symptoms as they are more likely to be embedded in a biomedical approach. In contrast, the studies by Pondé et al (2009) and Carless & Douglas (2010) were concerned with the role of leisure or PA in recovery of people with psychosis - these authors were not psychiatrists and their work suggests that they are oriented in a recovery approach. The difference in emphasis appears to have drawn out dissimilar findings suggesting that if the focus is on coping with symptoms, PA emerges as a coping strategy but if the emphasis is on how leisure or PA may aid recovery, coping with symptoms does not emerge, but a number of other avenues to recovery are apparent. In addition, the studies by Falloon & Talbot (1981) and Yagi et al (1991) were published before the recovery approach was strongly promoted in mental health care and therefore the emphasis was on the elimination of symptoms. The more recent studies do not contradict the earlier studies about PA being used as a way of coping with the symptoms, but they do highlight that alleviating the symptoms may not be the predominant reason that PA is found to be beneficial. This will be discussed more thoroughly in the remainder of section 2.2.3 and also in 2.2.4.

2.2.3.2 PA as a treatment for mental health problems

Despite these conflicting findings of the extent to which PA alleviates the symptoms of psychosis and despite the increasing focus on recovery, an abundance of the literature in the field of PA and psychosis has focussed on how PA can alleviate symptoms as an adjunct to more established treatments. The literature in this field will now be reviewed, and will incorporate the literature investigating PA in people with depression. This literature is considered because of the prevalence of depression in people with psychosis and because of the substantial body of evidence in PA and depression.

The evidence relating to PA as a treatment in people with depression has been accumulating for a number of years and therefore NICE (2009) have developed

guidelines that recommend that PA is used in the treatment of people with mild-moderate depression (see section 1.6). The evidence base is not as substantial for people with psychosis and no such guidelines exist. However, for both depression and psychosis a number of reviews have been carried out which assess the effectiveness of PA interventions for treatment or as an adjunct to treatment.

A Cochrane review (Mead et al, 2009) investigating PA as a treatment for depression found that there was a significant reduction and a large effect size (Standardised Mean Difference (SMD)-0.82 (95% CI -1.12 to -0.51)) in symptom reduction post exercise compared to those in a control group. At follow-up a moderate effect was found for symptom reduction (SMD -0.44, 95% CI -0.71 to -0.18). This review also investigated the differences between PA and cognitive therapy and PA and antidepressants and found no significant differences, suggesting that PA was just as effective in the treatment of depression as both cognitive therapy and antidepressants.

Although these results appear to be extremely positive, Mead et al (2009) express caution in the interpretation of the results because of methodological limitations of RCTs included in the review. A RCT is seen as the gold standard of research in medical research. As a minimum, RCTs should use random assignment of participants to different treatment groups including a control group. However, a high quality RCT has additional properties to adhere to, such as blinding of investigators and employing intention-to-treat analysis which involves including 'drop-outs' from the study in the final analysis (CONSORT, 2010).

Therefore, when Mead et al (2009) accounted for methodological limitations in their review, the effect size and significance levels were not so conclusive. The effect size was moderate, but only just significant when only trials with blinded outcomes were included SMD was -0.39 (95% CI -0.75 to -0.03), and when only intention-to-treat analysis studies were included SMD was -0.63 (95% CI -1.16 to -0.10). When only those trials fulfilling all methodological criteria were included, which consisted of blinding, intention to treat and allocation

concealment the effect size was moderate and not significant (SMD -0.42 (95% CI -0.88 to 0.03). This review echoes the findings of previous reviews by Craft and Landers (1998) and Lawlor & Hopker (2001), both stating tentatively that PA could improve depression, but poor methodology in studies prevent firm conclusions from being drawn.

In psychosis, PA has only been investigated alongside treatment rather than in place of it (as it has in people with depression). Reviews in PA as an adjunct to treatment in people with psychosis resonate the findings of the reviews into PA and depression. The reviews conclude that PA could be beneficial to people with psychosis yet the methodological weaknesses of the studies and the paucity of research prevent firm conclusions from being established (Gorczyński & Faulkner, 2010; Wright et al, 2009; Ellis et al, 2007; Faulkner, 2005; Faulkner & Biddle, 1999).

The limitations of the studies outlined in the reviews are: small samples of self-selected participants; lack of control groups, or inadequately selected control groups; and lack of reporting of adherence rates. In addition, a number of these studies do not adhere to the 'gold standard' methodology of an RCT. The most recent review by Gorczyński & Faulkner (2010) reported that the three RCTs included in their review are more methodologically rigorous than previous trials and it is claimed that this is as a result of calls for greater rigour in previous reviews (Faulkner, 2005). Given this, these studies will now be described in more detail along with their limitations.

Marzolini et al (2009) examined the effects of PA among people with psychosis through an RCT. Participants were randomly assigned either to a control group or a group which exercised twice a week for 12 weeks. Thirteen individuals participated in total, seven in the PA group and six in the control group. Those in the PA group undertook both aerobic exercise and resistance training. Marzolini et al (2009) demonstrated that there was an improvement in mental health symptoms in those who undertook PA, compared to those in the control group. Mental health was assessed by the Mental Health Inventory (MHI) (Veit & Ware, 1983) which is a self-report questionnaire measuring overall emotional

functioning, consisting of negative and positive emotions. An improvement in fitness was also found to be associated with an increase in mental health symptoms and in particular a decrease in depression scores. The results of this study may be compromised because of the small sample size, emphasising one of the problems in researching this area. Beebe et al (2005) found similar results in a similar sized PA RCT, (n=12) in people with schizophrenia. Severity of psychopathology was measured on the Positive and Negative Syndrome Scale (PANSS). Fitness was the measure of PA and post-intervention fitness was found to have increased, BMI had reduced and there were fewer psychiatric symptoms. However the results were not significantly different from the control group - as fitness increased and BMI was reduced in the control group as well as the experimental group.

The 3rd study included in the Gorczynski & Faulkner (2010) review was larger (n=61) and compared yoga with exercise (walking, jogging and relaxation) (Duraiswamy et al, 2007). Those who participated in yoga were found to score significantly better on PANSS than the exercise group and on QoL (this study is discussed further in section 2.3). However, there was no true control group as exercise was compared with yoga and allocation concealment was unclear (Gorzczynski & Faulkner, 2010).

Less rigorous forms of quantitative research have also found PA to be beneficial in treating the symptoms associated with psychosis. Ng et al (2007) compared inpatients with bipolar disorder who volunteered to take part in a walking group against those who did not participate. Over a 12 month period 14 people chose to participate in the walking group and 35 did not choose to participate. At discharge, self-reported depression and anxiety measured by the Depression Anxiety Stress Scale (DASS) (Lovibond and Lovibond, 1995) were significantly lower in those who had participated than those that had not. No control of potential confounding variables could be accounted for because of the naturalistic setting, however observing the participants in their actual setting could offer a more accurate representation of a participant's behaviour. Nevertheless, there was no randomisation of the groups and the measure of PA was limited as it was only assessed through attendance at the group.

Undertaking qualitative research with the participants in this study could have offered further depth and understanding of PA carried out in this naturalistic setting.

The studies outlined suggest that a) there is not an abundance of RCTs of PA in people with psychosis and b) RCTs that are available are not the best quality. Furthermore, Faulkner & Taylor (2005) suggest that top quality RCTs may not be suitable for the study of PA and psychosis because:

- An RCT may require modification of normal treatment or exercise promotion opportunities; raising the issue of what is being evaluated (NHS Executive, 2001).
- Attempts at generalisation may be limited because of the wide variation of clinical settings such as outpatient, inpatient and community settings (Burbach, 1997; Morgan, 1997). Generalisation could also be problematic because of the heterogeneity of the symptoms of the illness and medications.
- PA and its outcomes are likely to be highly individualised (Fox 2000; Beebe et al, 2005).
- Dropout may occur in those individuals who are placed in a non-preferred treatment group and do not experience the psychological benefit they would have expected.
- Blinding investigators to treatment condition is difficult.
- Experimental work is difficult because of the small numbers of available mental health SUs at one place at one time. This affects the power of the studies to detect significant changes.
- RCTs answer a 'circumscribed set of questions and issues related to outcome rather than to process and to efficacy rather than effectiveness' (Roth & Parry, 1997, p370). Therefore, the external validity and generalisability of RCTs has been questioned.
- Strict inclusion/exclusion criteria which may not reflect people seen in routine services.

The point about individualised outcomes is particularly relevant to the rationale behind the methods employed in this thesis. RCTs look at differences between groups and therefore do not reflect individual responses and preferences. The aim of this thesis is to understand how individual differences such as self determination may influence the relationship between PA and QoL, and to understand personal experiences of PA rather than focusing on standard interventions that may be beneficial to some but not to others. Faulkner & Taylor (2005) recommend that alternative and more flexible methodological approaches could complement RCTs and address some of the issues RCTs are unable to tackle, such as helping to understand how and why PA may benefit people with psychosis. Qualitative research is claimed to hold the key to a better understanding of the mechanisms underlying the effect of PA on QoL providing a richer, more informed view than is possible through a RCT (Mutrie, 1997).

A well conducted ethnography study by Faulkner & Sparkes (1999) shed some light as to how PA may be beneficial for people with psychosis, using qualitative research. The principal researcher in the study took the role of participant-observer, where he worked at a hostel for homeless people with mental health problems. The researcher undertook walking and swimming with the participants twice a week, for 30 minutes over 10 weeks. Three participants who were diagnosed with schizophrenia took part in the study. Generalisation of this study may be limited, however, rich information was gleaned about how PA could be beneficial. It emerged that the participants were distracted from their voices during and after PA and they had more regular sleep patterns. The general behaviour of the participants was found to improve, including ameliorated hygiene, an improved mood and less aggression. These findings were uncovered through observation and interviews with the participants and staff at the hostel. This methodology encourages concepts and explanations to emerge which may not have been previously studied, which a) pave the way for more extensive research to be carried out and b) adds knowledge as to why and how PA appears to be beneficial for people with psychosis. This study also highlights that whilst PA was found to be a distraction from voices, it was not only a reduction in symptoms which explained the benefits of PA - other meaningful factors for recovery emerged. The next section considers the literature which has

investigated the wider implications of PA in people with psychosis, rather than just alleviation of symptoms.

2.2.3.3 PA and self

The self or identity is often described as being lost or forgotten when in a bout of acute psychosis (Hayne & Yonge, 1997) and it has been argued that an important part of recovery in people with psychosis is the development of a new sense of identity (Bonney & Stickley, 2008). This can incorporate a re-emergence of meaningful aspects of an individual's old self with an integration of their experiences of psychosis, which can also be incredibly meaningful (Padilla, 2001). PA has been found to be one method to recover a part of a previous meaningful identity. Carless & Douglas (2010) employed a narrative approach to discuss the experiences of PA in people with SMI. Through interviews it emerged that PA can be used to rebuild an athletic identity in some people with SMI. It is stated that if an individual demonstrates a strong athletic identity prior to the onset of their diagnosis, a re-introduction of PA can help individuals to control their life story, reinforcing this identity. However, in this study, a discussion of PA and the development of self was limited in people without an athletic development prior to the onset of diagnosis.

In the field of exercise psychology, studies have predominantly focussed upon PA and physical self as outlined in the model by Fox & Corbin (1989) (See figure 2.2.3.3).

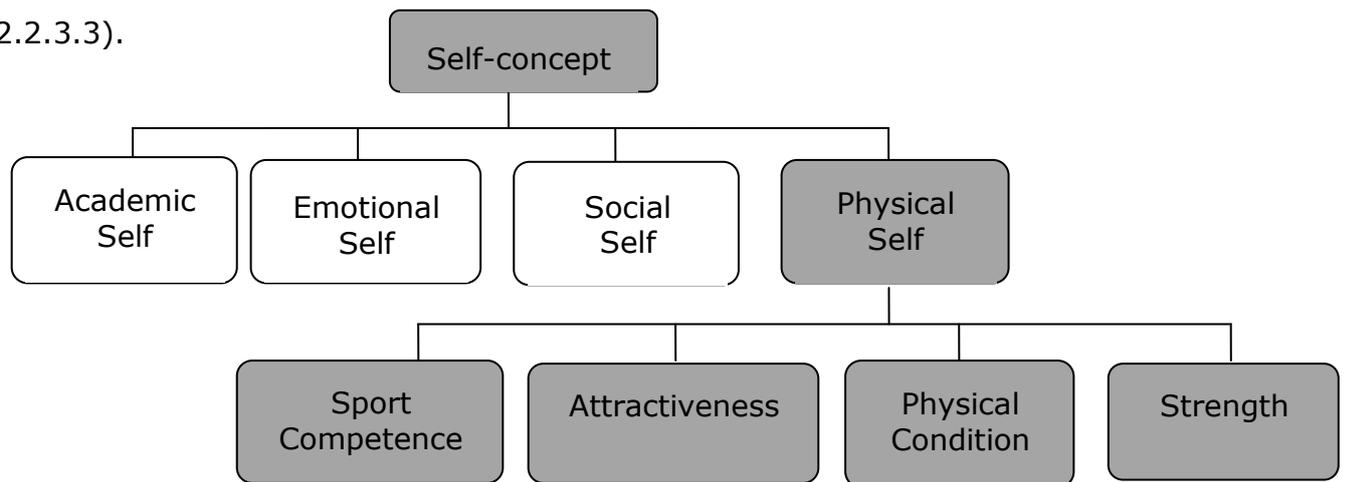


Figure 2.2.3.3 Fox & Corbin's (1989) outline of the self

The self-concept is the perception that we have of ourselves and self-worth is how we see ourselves in relation to each domain of self-concept. It is this perception of self which is described as self-esteem (Thatcher et al, 2011). Self-esteem refers to the value and perceptions placed on aspects of the self, such as physical, social, emotional and academic domains. These are suggested to be underpinned by temporary perceptions of worth and competence such as sporting ability or physical appearance for the physical domain of global self-esteem (Fox, 1998). Self-esteem has been reported to be low in people with psychosis and this is a predictor of poor QoL (Gurege et al, 2004). PA has been found to improve a person's physical self-perceptions or body image in people without psychosis (Martin & Lichtenberger, 2002). It is argued that improving body image in people with psychosis through PA could be a key benefit as they have been found to have a negative view of their bodies and can find it stigmatising (Veit & Barnas, 2009, De Hert et al, 2006).

Soundy et al (2007a) carried out interviews with participants diagnosed with psychosis who attended a community outpatient centre. One of the key barriers to participating in exercise was self-presentation (an attempt to control and monitor impressions others form of oneself (Soundy et al, 2007a)). Concern that their body may be negatively evaluated, because of their weight prevented people from exercising as well as increasing paranoid thoughts; one participant described feeling that he was being 'watched' at the sports centre. This may present a major barrier to the uptake of PA in this population. It also highlights the possibility that PA could have an adverse effect on an individual with psychosis because of their vulnerabilities. However, Soundy et al (2007a) found that a paradox exists as weight loss was also found to be a motivator for PA. A direct measure of body image (Body Weight and Self-Esteem, (B-WISE); Awad & Voruganti, 2004) was used to assess the relationship between PA, BMI and body image in a study carried out by Arbour-Nicitopoulos & Faulkner (2010). They found that there were no differences of body image across BMI or PA intensity. This may be explained by the choice of measure implemented to assess body image. Arbour-Nicitopoulos & Faulkner (2010) pointed out that only one aspect of body image (weight loss) is assessed in this multi-dimensional concept and further consideration of other

factors such as physical functioning are required. Qualitative research could explore this concept in greater depth by exploring the experiences of individuals.

Fitness has been identified as a factor which may improve self-esteem in the general population (Spence et al, 2005). Qualitative research in people with psychosis has also found that an increase in fitness is beneficial, however its effect on self-esteem has not been directly assessed on a self-report measure. An improvement in fitness was felt by participants on a walking programme for people with psychosis, and they reported feeling rejuvenated at their ability to walk further and to lose weight (Fogarty & Happell, 2005). Carless & Douglas (2010) also found that for some participants, a perceived increase in fitness was seen as an achievement and this helped them to feel more capable of undertaking other meaningful activities such as vocational work. This finding has been supported in other qualitative research. Priest (2007) found in an ethnographic study for people with mental health problems that undertaking PA was beneficial as it was viewed as an achievement, it was doing something, but more than that it was doing something perceived as positive for their self. An improvement in perceived competence was also demonstrated in a study which implemented a lifestyle intervention with the aim of improving physical health outcomes in people with SMI (Shiner et al, 2008). They carried out interviews with eight participants and found that participants enhanced their self-esteem by gaining control over aspects of their health through diet and PA. However, this lifestyle intervention had multiple components and it is difficult to distinguish if PA was responsible for the enhanced self-esteem. In addition, only participants who were successful in making changes were interviewed, therefore the experiences of those who were not as successful were unidentified, potentially missing detrimental effects of PA.

Although the studies discussed in the above section suggest that PA can enhance feelings of competence and self-esteem in people with psychosis this has not been assessed through the use of self-report measures. Assessing such concepts quantitatively will allow for a greater amount of participants to be studied and would be able to assess if there are any negative effects of PA on the concept. However, a sense of competence and improved physical self-perceptions are

only two factors which could aid in the development of self and further qualitative studies would enable further exploration of PA and identity. By investigating experiences, further considerations of PA and self could emerge.

2.2.4 Context of PA and QoL

The setting in which PA takes place may be the crucial ingredient for people with psychosis (Carless & Douglas, 2008) who often face significant barriers in undertaking PA. Crone (2007) undertook interviews with people with mental health problems engaged in a walking project. It emerged that PA may be beneficial because of the opportunity to meet people and the knowledge and appreciation of nature. These experiences imply that it may not be the PA itself that is beneficial but the broader context and process of the PA.

2.2.4.1 Environmental factors

Pondé et al (2009) investigated leisure activities which were perceived to be beneficial or detrimental to well-being for people with psychosis. It was found that those activities which were perceived to be most beneficial were those undertaken away from the home, such as walking, playing sport, gymnastics classes and dancing, however being outside was viewed as negative if pollution was present. Although this study highlighted that PA may be more beneficial if it is outside the home, there was a lack of depth in the discussion about the experiences of individuals who participate in PA outside. Green exercise, which is the term used to describe PA undertaken outdoors, has been found to be beneficial to the mental health of people with mental health problems (Mind, 2007). However, little is known about how and in which circumstances it could be beneficial. A green gym, which provides similar equipment to an indoor gym, is available in the local council where this thesis took place, but it is not known how many people with mental health problems use this. Equally, it is not known to what extent green exercise is encouraged in mental health services and this requires further consideration.

Gardening was found to be beneficial for participants with mental health problems as they became absorbed in their tasks which were perceived to be in harmony with the setting (Fieldhouse, 2003). A qualitative approach was

employed and it suggests that engaging in an activity which connects a person with nature was valuable for the mental health of participants in this study. However as gardening was the only type of PA explored in this study it is unclear as to how other forms of outdoor PA could be beneficial. Priest (2007) undertook an ethnographic study, which consisted of interviews and observations of a walking group for people with mental health problems. Overall, it was concluded that walking had a healing balm effect and that being in nature was considered an essential part of this soothing effect. Walking in the natural environment was seen as being therapeutic as it stood in contrast to the artificial surroundings of their home environment of a town, and this appeared to relieve feelings of oppression as well as alleviating emotional pain. However, as this study only took place in one group in the countryside on the edge of a rural town it is unknown if these experiences could be shared with other groups of people, or if walking in different environments such as in a city could be beneficial.

Although the natural environment may have an impact on PA experiences, other factors of the environment have also been found to be important in people with psychosis. The characteristics of the facility where PA is undertaken has been found to be important for the psychological accessibility (feeling safe and not threatened) of people with a variety of mental health problems (Raine et al, 2002). This study explored the views of SUs, service providers and referral agencies to evaluate the accessibility of a community-based exercise facility for people with mental health problems. The appearance of the gym was found to be important which was non-institutional in facade; it was in the community and was perceived of being a physical and psychological distance from mental health services. The professionals who delivered the programme were also of relevance to the participant's experience. It was deemed important that they were not mental health professionals and had knowledge and skills in fitness and PA. The activities offered were found to be meaningful and socially valued and therefore non stigmatizing. Further qualitative studies provide additional understanding of why community based gyms are perceived to be important to people with SMI. Shiner et al (2008) interviewed participants who attended PA sessions organised by a local mental health trust in the community. It is claimed that because the

sessions took place in the community this gave the participants confidence to approach mainstream social activities and created a sense of normality.

The studies in this section all used qualitative methods to explore the PA environment. These demonstrate that the environment in which PA is undertaken is key to the experiences of individuals. However, as only small pockets of people have been interviewed it is not possible to generalise these findings to the wider population of people with mental health problems. In addition, none of these studies have exclusively investigated people with psychosis and the different diagnosis of mental health problems may reflect different experiences of the environment. It is clear, however, that context and environment are important and potentially will have a big impact on the benefits of PA. Given this, it is important to understand the service context in which PA is incorporated into care plans in mental health services. Attitudes of professionals and service managers could also potentially be barriers or facilitators to PA interventions.

2.2.4.2 Social factors

One of the benefits of PA for people with mental health problems, outlined by Crone (2007) was the opportunity to meet people. Isolation is often a problem experienced by people with psychosis, which is frequently perpetuated because of stigma. Goffman (1963) defines stigma as 'an attribute that is deeply discrediting'. The recognition of this attribute leads the stigmatised person to be 'reduced from a whole and usual person to a tainted or discounted one' (p.3). Stigma for people with psychosis has been found to be the greatest barrier to having a complete and satisfying life (Canadian Mental Health Association, 2001). This stigmatisation often results in people feeling unable to integrate into society (Borinstein, 1992) and fear of discrimination can prevent people from going out and being active (Soundy et al, 2007a; Friedli & Dardis, 2002). However, becoming a valued member of society indicates better outcomes for recovery and self-esteem (Pondé et al, 2009; Bonney & Stickley, 2008). In addition, PA has been found to improve QoL because of the potential to alleviate social exclusion (Richardson et al, 2005; Crone et al, 2005, Faulkner & Biddle, 1999).

Some people in a walking group for people with mental health problems reported that they 'felt safe' when there were other people who were also experiencing distress as they were perceived to be non-judgemental (Priest, 2007). However, Darker et al (2007) suggests that the benefit of undertaking PA with others depends on the purpose of the PA. It was observed that if people were walking for respite from their world, they would prefer to walk alone, however if people were walking in the country for pleasure, they would prefer the company of others to share the experience and to improve the psychological benefits. However, this study did not include people with psychosis who may have very different experiences. Soundy et al (2007a) did interview people with psychosis and found that social contact was avoided during some phases of some participants' mental health problems and on these occasions they either chose solitary PA or did not want to undertake PA. This highlights that encouraging group PA may not always be beneficial. This study did not describe any social benefits of PA, however the focus of the study was not concentrated on the experiences of PA, but on identifying actual PA undertaken, support from health professionals, and knowledge and barriers of PA. It is feasible that social contact was only described as a barrier to PA and not a benefit because the opportunity to explore this was absent.

In a study explicitly designed to investigate the role of football and social exclusion, it was found that football helped participants to overcome a sense of social withdrawal (Carter-Morris & Faulkner, 2003). Once again interviews were the method of choice and it was found that football was beneficial for social exclusion as it encouraged people to get out of the house. In addition, participants described how the 'banter' with others helped to integrate and promote a sense of normality. Faulkner & Sparkes (1999) also found that undertaking PA in the community aided the participants to feel normal which enhanced their confidence. Further exploration in this ethnographic study investigated how PA fostered social interaction in three participants. It was stated that PA encouraged interaction with the other members of the study although interaction with the wider community was still limited. Nevertheless, this interaction with group members was found to prevent participants from continuous introspection and encouraged an interest in day-to-day events.

The qualitative work discussed provides some information on how PA could be beneficial to social integration but it is suggested that this could depend upon the stage of illness and the purpose of the PA for the individual. The research is focussed upon PA set up in or by mental health services, with limited findings on type and intensity of PA. Further consideration of PA for social functioning and integration is required. Assessing PA and social functioning cross-sectionally through quantitative measures could provide further support across a wider sample of the population, which could also assess dose of PA. Further qualitative studies could explore deeper understandings of how and why PA may enhance social functioning or indeed how social factors could be detrimental for PA experiences and engagement in PA.

2.2.5 Detrimental effects of PA

Most of the evidence presented so far suggests that PA is beneficial for QoL; however, potential detrimental effects of PA should be considered. Ströhle et al (2007) examined PA in 2,548 participants aged between 14 and 24 who had a variety of mental health problems. Lower rates of PA were associated with higher rates of some mental health problems, specifically anxiety disorders, somatoform disorders or dysthemia. However, at 4-year follow-up, risk of developing bipolar disorder (n=18) was increased if high PA was reported at baseline. The findings were limited because of the small sample of people who developed bipolar disorder. However, the authors suggest that the propensity to engage in higher levels of PA in late adolescence or early adulthood might be associated with a shared vulnerability to bipolar disorder. It is difficult to draw conclusions from this limited evidence, but it is acknowledged that high levels of PA may be associated with bipolar disorder.

Wright et al (2012) found that for some people with bipolar disorder, PA is described as 'a double edged sword' (p.638). PA was described as being both helpful and harmful. This was found to be associated with their mood cycles, in that if a person was experiencing the onset of a manic stage, PA could exacerbate their symptoms. But if they were in a depressive cycle PA could improve mood. This has important implications and merits further consideration.

Pondé et al (2009) found that although sport, walking and dancing were all perceived as positive leisure activities in people with psychosis, excessive physical PA was deemed to be a negative leisure activity. This study did not determine why excessive PA was perceived to be detrimental, or what excessive PA meant. This requires further investigation in a population which are faced with a multitude of barriers to PA, which could impact upon their PA experiences and therefore QoL. For instance, it is argued that people with psychosis find it difficult to participate in PA due to the symptoms of the illness, such as paranoia, side effects of the medications, body image and fear of discrimination (McDevitt et al, 2006; Soundy et al, 2007a). These barriers to PA, could result in low self-efficacy and therefore the amount, intensity and type of PA should be considered (McAuley et al, 1999).

In summary, existing research suggests that PA could be beneficial for a number of different aspects of mental health, including treating the symptoms, enhancing self-esteem and developing a sense of self. In addition it is highlighted that the environment and social context could be important considerations for the experiences of PA. However, there is a lack of information about how PA could be beneficial to a cross-section of people with psychosis, what dose of PA people undertake and the experiences of PA outside of groups organised by mental health services. In addition, more information is required about if and how PA could be detrimental to the mental health of people with psychosis. The section will consider the evidence which has directly investigated the relationship between PA and QoL in people with psychosis.

2.3 PA, QoL and psychosis

Holley et al (2011) reviewed the evidence of the effects of PA and psychological well-being for those with schizophrenia. Various measures and outcomes were used to assess if PA was beneficial for psychological well-being. Those reviewed included only two studies which assessed QoL specifically; the work of Duraiswamy et al (2007) and Acil et al (2008) which are both discussed below. A variety of other outcomes of well-being were included in this review, these consisted of mood, depression, self-efficacy and psychiatric symptoms. Many of the relevant studies have been discussed in section 2.2 and are not considered

in this section. Overall, this review suggests that PA is beneficial for well-being, but because of the wide variation in outcomes and measures used it is difficult to establish how PA is beneficial and which aspects of psychological well-being are most enhanced.

It has been argued that people with mental health problems may struggle to accurately report their subjective QoL (Harvey et al, 2007) and some propose that assessing objective QoL may be more appropriate. Objective QoL involves assessing a person's living conditions; objective attributes of the environment; social functioning and role fulfilment (Katsching, 2006) and is usually assessed by a mental health professional. One reason for some researchers being sceptical about the use of patient completed self-report measures is because subjective QoL in people with psychosis has been found to remain the same over time as improvements to objective circumstances and community care occurs (Barry & Crosby, 1996). However, it is argued that the inner subjective experiences of patients may not change even with major improvements in living circumstances (Skantze et al, 1992). The aim of this thesis is to assess a person's subjective understanding of QoL and so it is felt that an objective QoL measure is not required. There is no conclusive evidence supporting the argument that objective QoL will enhance the validity of the research (Narvaez et al, 2008). In addition, there is evidence that QoL can be rated accurately and consistently by patients (Voruganti et al, 1998).

Acil et al (2008) carried out an RCT with 30 participants in a sample drawn from a Turkish population of people diagnosed with psychosis. The participants in the experimental condition undertook 10 weeks of aerobic exercise 3 days a week for 40 minutes at a time. Three measures of psychiatric symptoms were assessed alongside a measure of HRQoL. The measure used was the Turkish version of the WHOQOL-BREF and the domains measured were: physical health, psychological health, social relations and environment. All domains of the HRQoL and positive and negative symptoms were found to have improved post intervention, however only the results from the HRQoL measure were significantly different to the control group. This demonstrates that PA could be beneficial to HRQoL, but that symptom reduction may not explain this. It is

suggested that symptom reductions alone do not result in meaningful improvements in QoL because other problems remain (Narvaez et al, 2008). This study reinforces the argument discussed in section 2.2.3.2 that it is not always feasible to conduct top quality RCTs in this population. Only a small sample was used (15 in each group) so the study was underpowered, reducing the chances of detecting significant effects.

A larger sample was implemented in a study to assess the differences between yoga and physical exercise on psychopathology in people with psychosis (Duraiswamy et al, 2007). 61 participants were randomly assigned to either of the groups, but no control group was included. At three month follow-up only 41 participants were available. Attrition was attributed to disinterest and a long commute and there was no difference in the dropout between the groups. Both groups underwent either training in yoga or physical PA for one hour a day, five days a week for three weeks. The physical PA group consisted of brisk walking, jogging and exercises in standing and sitting postures and relaxation. Immediately post the three week intervention there was found to be a significant drop in psychiatric symptoms in both groups but only a significant improvement in all of the QoL domains for people in the yoga group. At three month follow-up, participants in the yoga group showed significantly better results for both psychopathology and the social functioning of the QoL measure than the physical exercise group. Although these results could be attributed to a number of factors it is important to consider that different intensities and types of PA appear to have varying effects upon QoL. However, this study was carried out in India where yoga is undertaken more predominantly than in the UK - cultural variations of PA may impact on QoL and should be considered in future research.

Weight loss has been the focus of many PA interventions in people with psychosis and QoL is often assessed alongside this. Although there are differences in the dose of PA implemented in the interventions, similar findings have been reported with respect to PA, BMI and QoL. For instance, a significant reduction in BMI, waist circumference and a significant improvement in the PH subscale of QoL were found after a PA intervention (Poulin et al, 2007). However, these differences were not significant in comparison to the control

group. Although, Poulin et al (2007) found a reduction in BMI and an improvement in some domains of QoL, these were not associated with each other, nor was BMI found to mediate the relationship between PA and QoL. Other research has found that the general health and empowerment subscales of a QoL measure were significantly higher post a 12-week PA intervention, but there were no significant differences in BMI or other physical health outcomes (Skrinar et al, 2005). This suggests that physical health parameters, such as BMI did not account for the improvement in QoL, but it could be the PA itself which caused this change. Interestingly, empowerment is one of the two domains of the QoL measure which has improved and is an area of research which demands further attention.

These studies suggest that PA could increase QoL in people with psychosis, but it is unclear if weight loss is the reason for this increase. Many other explanations for the improvement in QoL could account for this relationship. Some of these have been discussed in section 2.2, but further exploration through a combination of methods is required. Although these studies suggest that QoL could be enhanced following a PA intervention, they do not assess the relationship between PA and QoL in a population sample. Only one study could be found which has assessed if there is a relationship between PA and QoL in a cross-section of people with psychosis. Vancampfort et al (2011) found that PA is positively associated with PH ($r = 0.48, p = 0.001$) and MH ($r = 0.32, p=0.014$) as assessed by the SF-36 in 60 people diagnosed with psychosis. These participants were inpatients at a mental health hospital in Belgium. The PA measure implemented is the 12 month recall Baecke Physical Activity Questionnaire (Baecke et al, 1982). The validity and reliability of this is unknown in this population and it could be argued whether it is appropriate to ask inpatients with psychosis about their past 12 months of PA. In addition this study did not assess intensity of PA. It is therefore argued that a larger community sample is required to assess if a relationship exists between PA and QoL in this population, using a validated measure of intensity and amount of PA.

As discussed in section 1.2.3, subjective QoL, is concerned with both an assessment of multiple dimensions on a self-report measure and also with

exploring a persons' experiences. According to Ring et al (2010) the majority of publications in QoL have employed quantitative methods (usually a self-report measure). This is acknowledged as being beneficial in facilitating rigour and reproducibility, but it is suggested that there is a risk of losing subtlety and distinctions experienced by patients living with health problems-which qualitative methods could explore. Employing MM may assist in understanding why PA could be beneficial for QoL in people with psychosis. The next section will discuss mechanisms which could explain this relationship.

2.4 Explanations for improvements in PA and QoL

Positivist research into PA and mental health is concerned with establishing a relationship between PA and mental health and identifying the precise mechanism underlying a change in mental health, with the most commonly hypothesised being biochemical in nature. The most popular biochemical explanation is that endorphins are released during PA and it is this that enhances the feel-good factor (Hoffman, 1997). Although, this explanation has been postulated for many years, it was only in 2008 that evidence was actually provided for the release of endorphins post PA (Boecker et al, 2008). Ten elite runners participated in this study which asked participants to self-report their euphoria level and to undergo a Positron Emission Tomography (PET) scan. This was carried out on a rest day and 30 minutes after a 2 hour run on another day. Although this research may highlight that endorphins are released, the sample was very limited and there is still no direct evidence that it is the endorphins which cause the positive affect. Many other factors could explain these relationships which were not assessed.

The mechanism responsible for change is suggested to be highly individual specific (Fox, 1999) acknowledging that it may not be realistic to identify one mechanism when such a large number of potential psychological influences may be experienced through PA (Carless & Faulkner, 2003). A combination of biological, psychological and social factors are suggested to be responsible for the mental health benefit (Biddle & Mutrie, 2008; Mutrie & Faulkner, 2003; Fox, 1999). Qualitative research has enabled further exploration in people with mental health problems and appears to infer that the PA context and process are important in the beneficial effects on mental health, including social factors and the exercise

environment (Crone, 2005; Faulkner & Sparkes, 1999). Equally an improvement in feelings of competence and physical self-esteem emerge (Carless & Douglas, 2008) and in people with psychosis distraction from the positive symptoms of the illness appear to improve a person's mental health (Faulkner & Sparkes, 1999), as well as reducing symptoms of depression (Marzolini et al, 2005).

2.4.1 Self-determination theory

As outlined in the introduction, SDT may mediate the relationship between PA and QoL. SDT takes a process oriented approach and therefore can offer a more complete explanation for a change in mental functioning as it allows for a broad range of potential influences (Carless & Faulkner, 2003). The preceding review also highlighted the possible significance of the concepts of competence, autonomy and relatedness in understanding the relationship between PA and QoL. For example, the literature suggests that if PA is perceived to be forced, rather than a choice QoL is lower (e.g. Cerin et al, 2009). PA was also reported to be a tool which enhances competence or self-esteem (e.g. Shiner et al, 2008) and feelings of relatedness were discussed under the section social factors (section 2.2.4.2). In addition to this reviewed literature, Hodgson et al (2011) suggested that PA developed relatedness, competence and autonomy in participants with SMI. SDT was used to explain these qualitative findings as these three needs were satisfied after completing a PA programme. However SDT was not tested in this study, it was only used to explain the results.

SDT complements the recovery perspective which claims that recovery should be characterised by feelings of self-determination. Although, SDT may help to explain some aspects of an improved QoL, there may be others which it ignores. A qualitative approach exploring subjective experiences would provide a deeper understanding of the phenomena of PA and QoL in people with psychosis.

The recovery approach promotes hearing a person's subjective experience and is not focussing on medicalised outcomes. Therefore research looking at the recovery approach has adopted qualitative approaches (Ramon et al, 2007). However, as policy is increasingly developed upon evidence-based practice, it is acknowledged that outcomes need to be assessed quantitatively (Anthony et al,

2003). These outcomes need to be oriented in a recovery perspective, and so the focus is not on symptom reduction, hospitalisation or relapse but on measures such as self-determination and QoL (Anthony et al, 2003). However, Anthony et al (2003) argue that if quantitative outcomes are used, qualitative research should supplement this work.

When evidence-based practices are promulgated for replication without taking subjective experiences or qualitative measures into account, important philosophical underpinnings of practice may be omitted because they are not directly linked to the quantitative objective outcomes.....The point is not whether qualitative or quantitative measures are better; rather is that they are complementary and not duplicative (Anthony et al, 2003; p106)

2.5 Mental health professionals views of PA

It is clear that context and environment are important in understanding the relationship between PA and QoL in people with psychosis (section 2.2.4). The location of care and the attitudes and assumptions of professionals are considerations of this context. An aim of this thesis is to provide information that will be helpful to service managers and professionals in providing PA based activities that are beneficial to QoL. It is recognised that recovery based services for people with psychosis require a joint approach with the SU and professional working in a partnership with joint decision making. To provide a more thorough understanding of PA and QoL in the context of NHS mental health services, it is argued that the views of those who work on a daily basis with people with psychosis are required. Hodgson et al (2011) carried out interviews with people engaged in a PA programme and found that the pivotal component of PA programmes for people with SMI was the personnel involved in initial referral, support for engaging in the programme and the provision of skilled instructors to deliver high quality PA sessions. This research suggests that for PA to be successful, the attitude and knowledge of professionals are important to the success of PA.

The views of mental health professionals and SUs have been found to have different perspectives for both QoL and PA. Angermeyer et al (2001) elicited SUs and psychiatrists views of QoL through open-ended questionnaires. While the service-users considered health, leisure activities, happiness and family as being particularly important to their QoL, the psychiatrists highlighted the absence of medication-related side effects, social integration, independence, social acceptance, psychiatric treatment and social competence. Differences such as these can have an impact upon the care people with psychosis receive. Similar differences have been found on views about PA.

Dean et al (2001) reported a conflict between the perceptions of mental health professionals and SUs with psychosis about physical health needs. Focus groups and interviews were undertaken with mental health nurses, carers and SUs. Professionals and carers perceived SUs to be uninterested in their own physical health. However, this view was not shared by the SUs, who were found to be interested but do not always have any motivation to change. The authors claimed that although professionals are encouraged to work within a holistic approach, nurses continue to operate in a medically dominated culture, creating a reductionist view. Therefore, in practice instead of a focus on health promotion and wellness activities that draw on SUs' strengths and capabilities, the focus is on reactive, illness based interventions (Dean et al, 2001).

This finding has been echoed in a study with clinical psychologists, where it was found that the participants claim to have dispensed with mind-body dualism, but this did not always appear to transfer to practice (Faulkner & Biddle, 2001). This was supported in a qualitative study of 12 mental health nurses working on inpatient wards (Faulkner & Biddle, 2002). This study found that participants struggled to describe the embodied benefits of PA, reinforcing the view of the authors that a mind-body split still dominated practice. However, psychologists did believe in the benefits of PA for an improvement in general self-esteem and that it could be used as part of a normalizing activity (Faulkner & Biddle, 2001). Psychotherapists also reported that they would recommend PA to people if they thought it could improve general well-being and address some of the symptoms of anxiety and depression (McEntee & Halgin, 1996). However, this would depend on

a number of factors, for instance, psychotherapists who exercise were more likely to raise the subject of PA with their clients and those therapists who used CBT rather than a psychodynamic approach were more likely to recommend PA. Prescribing PA does not comply with the theoretical orientation of some psychotherapists and they are therefore unlikely to believe in PA as therapy, perceiving PA is better left to physiotherapists and physical health doctors (McEntee & Halgin, 1996). Faulkner & Biddle (2001) also found that some clinical psychologists believed that physical treatment is not their remit, but that of health psychologists. The authors suggest that an increasing specialisation in health services narrows the appropriate treatment for each profession.

Since the publication of the research discussed in this section, the Department of Health's (2004) White Paper: 'Choosing Health' and the more recent 'No Health without Mental Health' (2011b) have both been published. They both state that QoL should be improved in people with mental health problems and this includes increasing PA opportunities. A more recent attitudinal survey among mental health therapists in Australia found that 51% of respondents believed recommending PA was part of their job. Therapists were aware of the benefits of PA for mental health but not as a priority for adjunctive treatment (Phongsavan et al, 2007). Burton et al (2010) found that many psychologists were interested in and capable of promoting PA. Survey responses were collected from 236 psychologists in Australia and 53% reported recommending activity often to their clients. The survey research suggests that psychologists, therapists and mental health workers are more positive about PA than some of the SUs report about attitudes of mental health professionals in the earlier qualitative research. However this survey leaves a lot of questions, such as what is PA recommended for - is it physical health, mental health, QoL, recovery? How is it recommended? Do professionals believe it can be beneficial for the QoL in people with psychosis? How should PA be implemented? Or should it be encouraged within a recovery perspective? How do services ensure any PA is matched to the individual needs of the person with psychosis? These questions are unable to be answered through a survey and limited research has used qualitative methods on a range of staff to explore their experiences of PA in people with psychosis (Wright et al, 2009).

2.6 Summary

The literature reviewed in this chapter highlights that PA appears to be beneficial for some domains of QoL in the general population. There is a smaller body of evidence which claims that PA could be beneficial for the QoL in people with psychosis. However, a fuller picture of this phenomenon is required. In addition, conflicting evidence exists concerning prevalence and patterns of PA in this population, with no research which has investigated amount of PA using a validated measure for people with psychosis in England.

Researchers in the field of PA and mental health have called for a variety of different methodologies to be used (Faulkner & Taylor, 2005; Crone et al, 2005). Quantitative methods have dominated the literature in this field and therefore there is a lack of understanding about a person's experience of PA and QoL. Exploring a person's experiences may assist in understanding how and why there may be a relationship between PA and QoL. It is also consistent with the recovery approach, which seeks to provide services as a partnership, matching provision to the individual needs of the person which may vary over time. Although the literature suggests a relationship exists between PA and QoL in the general population, this relationship has not been established in people with psychosis. It would therefore be beneficial to investigate this relationship with quantitative measures which assess amount and intensity of PA and how this relates to recommended PA levels. Qualitative research which explores a person's experiences of PA and QoL would add meaning and understanding to the quantitative findings. Using both methods can ensure the research both captures the experience of the person with psychosis qualitatively and also identifies more general relationships and trends using quantitative methodology (De Civita et al, 2005). Exploring the experiences of mental health professionals would add another layer of meaning to the discussion and inform the development of support for PA in services and the community. Chapter three will discuss the methodology for this thesis to assess PA and QoL in people with psychosis.

Chapter 3

Methodology

The purpose of this chapter is to discuss and justify the methodology employed in the thesis. A defining characteristic of any research problem is that it is a:

State of affairs that begs for additional understanding.....the purpose of research inquiry is to 'resolve' the problem in the sense of accumulating sufficient knowledge to lead to understanding or explanation (Lincoln & Guba, 1985 pp.226-227)

If we look to recent natural disasters, people require deeper knowledge and understanding. For instance, when the 2011 earthquake and ensuing tsunami hit Japan, the news was dominated by people looking emotionally lost. They were seeking answers to how and why this could have happened; what was the meaning of this? Equally, around the world people were interested to know what had happened; How many people had died? What was the extent of the damage? What was it like to live through this? And the media responded by providing us with statistics about the number of deaths, the number of people missing and scientific explanations were provided as to why this happened. Of equal importance were the stories provided through interviews with people describing their lived experiences of the natural disaster, helping us to understand what it is like to have lived through this. To make sense of this phenomenon, both quantitative and qualitative methods were used to produce more knowledge, allowing for a more thorough understanding of the Japanese tsunami.

With respect to this thesis, chapters one and two highlighted how additional understanding of PA and its relationship to QoL in people with psychosis is required. In addition, to provide greater depth to this knowledge, it is also perceived that an exploration of the experiences of PA for people with psychosis is required. This would provide some context to statistical findings and provide exploration as to what it means to be physically active for the participants, with the subsequent aim being to understand how PA can be implemented and

promoted based upon both the quantitative and qualitative findings. I am also interested in the perspective of professionals who work in mental health to see if their views and SUs' views corroborate and to investigate the practicalities of implementing PA in community mental health services. Ultimately, in order to gain 'sufficient knowledge' to expand the understanding of this research problem it is argued that both quantitative and qualitative research methods are required to 'provide multiple sources of converging evidence' (Yin, 1994, p93).

Throughout this chapter I will explain and justify my use of MM which I believe to be essential in addressing the main research question of how PA is related to QoL in people with psychosis. Issues surrounding MM research and a discussion of paradigms, ontology and epistemology will be given. I will go on to discuss the philosophy of pragmatism which was used to underpin the choice of methods. This will be followed with a justification for the methodology deemed most appropriate for the qualitative studies.

3.1 Mixed Methods

Combining different methods within one study does not come without criticisms or difficulties and this will be discussed throughout this section.

A variety of definitions have been proposed for MM research; Johnson et al (2007) amalgamated these definitions, resulting in the consensus that MM research is:

An intellectual and practical synthesis based on qualitative and quantitative research; it's the third methodological or research paradigm (along with qualitative and quantitative research). It recognises the importance of traditional quantitative and qualitative research but also offers a powerful third paradigm choice that often will provide the most informative, complete, balanced and useful research results (p129).

The definition of MM alters depending upon the purpose of the research. Greene et al (1989) identified five purposes for MM research: a) triangulation, which allows for the corroboration or convergence of sets of findings across different

methods; b) complementarity, which enhances, elaborates or clarifies specific findings from one method with findings from another method; c) development, which refers to using the results from one stage of research in a sequential design for the development of the methods for the following stage; d) initiation, which develops new frameworks or perspectives through highlighting paradox, missing or conflicting findings that might lead to the reframing of a research question and e) expansion, which refers to extending the breadth of a study by using different methods for various research components (Johnson et al, 2007). The initial purpose for using MM is for complementarity and expansion as it is argued that QoL, PA and psychosis all require a greater breadth of study than is permitted through using one method.

Expansion is required in QoL research as according to Ring et al (2010) the majority of publications in QoL have employed quantitative methods. Although this is acknowledged as being beneficial in facilitating rigour and reproducibility, it is suggested that there is a risk of losing subtlety and distinctions experienced by individuals living with health problems. Ring et al (2010) recommends that combining qualitative and quantitative approaches in QoL research would enhance health research. I will outline how this combination of methods can facilitate understanding with respect to a study carried out by Cutler et al (2009) investigating QoL and tourettes syndrome (TS) in young people.

There were two aims of the study: 1) to find out if tics impact upon the QoL of children with TS or whether the associated symptoms of TS affect QoL; 2) to describe the subjective experience of young people with TS to enable an exploration of which aspects of TS the young people perceived to impact upon their QoL. Aim one was assessed quantitatively through self-report measures and aim two was assessed qualitatively through focus groups. The quantitative research found that QoL was lower in those children with TS than those without TS. QoL was most adversely affected in the areas of emotional well-being and school; this was complemented by the results of the qualitative study which provided additional in-depth information about how QoL affected people with TS at school. For instance, it was reported that TS was especially difficult to manage at school because of the distraction caused in trying to control the tics. This

information could not have been found from quantitative results alone, as it was not assessed by the measures implemented. The quantitative results suggested that children's social QoL was significantly poorer than those without TS. However, the focus groups identified that the children with TS reported having friends who were accepting of their TS, but did get teased from a wider circle of peers and worried about the views of others they knew less well. In this instance, there was a slight conflict in the results of the two methods. The qualitative findings assist in explaining this conflict. The authors explained that the finding on the QoL measure that TS is related to poorer social functioning, could relate to the qualitative finding that participants with TS were worried about how others outside of their close circle of friends perceived them. Additional findings reported that the ratings of symptom severity accounted for 47% of the variance in QoL (as assessed through the quantitative study) suggesting that other factors may also have an influence on QoL. The qualitative findings shed some light on what these factors could be as it was found that those children who accepted their TS as 'one part of who I am' were more able to manage it and this reduced the impact that their TS has on their QoL. It is argued that using MM in this study provided a more holistic picture of the phenomenon in question.

In addition to QoL research requiring a MM approach, researchers in the field of PA and mental health have also called for a variety of different methodologies to be used (Faulkner & Taylor, 2005; Crone et al, 2005). Quantitative methods have dominated the literature in this field and therefore there is a lack of understanding about a person's experience of PA. Exploring a person's experiences may assist in understanding how and why there may be a relationship between PA and QoL. Although the literature suggests a relationship exists between PA and QoL in the general population, this relationship has not been established in people with psychosis. It would therefore be beneficial to assess this relationship with quantitative measures, and qualitative research would explore a person's experiences of PA and QoL which would add meaning and understanding to the quantitative findings. Using both methods can ensure the research has a dual approach of capturing the experiences of the person with psychosis qualitatively and also identifying more general trends using

quantitative methodology (De Civita et al, 2005). Furthermore, use of a qualitative methodology, to understand the perceptions and experiences of professionals involved in the care of those with psychosis, also provides us with an appreciation of shared and divergent experiences adding a further perspective of the phenomenon in question.

MM research is particularly appropriate for health research where it is becoming increasingly common and increasingly accepted as a methodology (O’Cathain 2009). Historically, qualitative methodology was dismissed as ‘poor science’ and disregarded in favour of quantitative methodology, particularly RCTs. However, researchers have begun to question pure quantitative methods for their inability to answer questions such as why and how do some interventions work and others do not (Pope & Mays, 1995). According to O’Cathain (2009) this has resulted in a ‘quiet revolution’ in which combining methods have become more acceptable. The proportion of commissioned studies classified as MM research has increased from 17% in the mid 1990s to 30% in the early 2000s (O’Caithan et al, 2007). Examples of MM research can be seen in cross-sectional (Cutler et al, 2009), evaluative and intervention research (Smith et al, 2010; de Silva-Sanigorski et al, 2010; De Bock et al, 2010; Rowell & Polipnick, 2008), policy development (Sosulski & Lawrence, 2008) and nested into RCTs (Schuster et al, 2009; Brady & O’Regan, 2009). In addition, Ring et al (2010) have reported that regulatory authorities such as the European Medicines Agency (EMA) promote the use of MM research to establish content validity for patient-reported outcomes (EMA, 2005).

One of the reasons for the increase in research implementing MM is because it can assist in overcoming some of the weaknesses inherent in both quantitative and qualitative methodology. Johnson & Turner (2003) propose that the combination of methods should result in complementary strengths and no overlapping weaknesses. Table 3.1 highlights the weakness of each approach and how the alternative method may be able to help balance those weaknesses.

Table 3.1 Strengths and weakness of quantitative and qualitative methodology (Johnson & Onwuegbuzie, 2004)

Weaknesses	Strengths
Quantitative	Qualitative (to balance quantitative weaknesses)
The researcher's categories that are used may not reflect local understandings.	The researcher can explore the understanding of the local constituencies.
The researcher's theories that are used may not reflect local understandings.	The researcher can explore a person's experiences which may develop new or existing theory.
The researcher may miss out on phenomena occurring because of the focus on theory or hypothesis testing, rather than on theory or hypothesis generation.	The researcher can explore a person's experiences which may develop new or existing theory.
Knowledge produced may be too abstract and general for direct application to specific local situations, contexts and individuals.	Knowledge produced will be directly applicable to a small population of people.
Qualitative	Quantitative (to balance qualitative weaknesses)
Knowledge produced may not generalize to other people or other settings (i.e., findings may be unique to the relatively few people included in the research study).	Knowledge can generalise to a wider population than qualitative work.
It is difficult to make quantitative predictions.	Quantitative predictions can be established.
It is more difficult to test hypotheses and theories.	Hypotheses and theories are more easily tested.

3.2 Paradigm wars

Although mixing methods has been used successfully, producing meaningful and in depth information, some researchers claim mixing quantitative and qualitative

methods is not possible as the underlying paradigms are incompatible (Guba, 1987; Denzin & Lincoln, 1994).

Paradigms are a person's socially constructed world view, informed by the assumptions of a specific philosophical perspective (Mertens, 2003, Greene & Caracelli, 1997). Although a number of paradigms have been postulated, two major paradigms are in operation today: 1) positivist/post-positivist, employing mainly quantitative methods and 2) interpretivist/constructivist, using mainly qualitative methods with calls for MM to be the third paradigm (Johnson & Onwuegbuzie, 2004). Each of the paradigms are outlined in table 3.2.

Table 3.2 Comparison of Four Important Paradigms Used in the Social and Behavioural Sciences. Adapted from Tashakkori & Teddlie (1998)

<i>Paradigm</i>	<i>Positivism</i>	<i>Postpositivism</i>	<i>Pragmatism</i>	<i>Interpretivism</i>
Methods	Quantitative	Primarily quantitative	Quantitative & qualitative	Qualitative
Logic	Deductive	Primarily deductive	Deductive & inductive	Inductive
Epistemology	Objective. Knower and known are dualism	Modified dualism. Findings probably objectively "true"	Both objective and subjective points of view	Subjective point of view. Knower and known are inseparable
Axiology	Inquiry is value-free	Inquiry involves values but they may be controlled	Values play a large role in all stages of the research	Inquiry is value - bound
Ontology	Naïve realism	Critical or transcendental realism	Multiple interpretations emerge from transactions in an external reality, dependent upon the expected consequences.	Relativism
Causal linkages	Real causes temporally precedent to or simultaneous with effects	There are some lawful, reasonably stable relationships among social phenomena. These may be known imperfectly. Causes are identifiable in a probabilistic sense that changes over time.	There may be causal relationships, but these are constantly evolving.	All entities simultaneously shaping each other. It's impossible to distinguish causes and effects.

The positivist paradigm dominated social research until the 2nd World War (Phillips, 1990) which coincided with the supremacy, in psychology, of the behaviourist approach. Positivism and behaviourism are based upon Cartesian philosophy, positing dualisms between body-world and mind-body. Modern day scientific method was developed on the foundation of Descartes' philosophy that science is based on reason. The principle premise being that the truth of knowledge can be established through systematic analysis, laying the foundation for further truths to be learnt and understood (Langer, 1989). Descartes reasoned that the self is intuitive and finite, failing to acknowledge that the individual may have an impact upon the establishment of scientific knowledge. Therefore, this paradigm proposes that a value-free, single truth can be obtained through objectification of the research phenomena. Both positivism and behaviourism suggest that the cause and effect of social phenomena can be established and affirms pre-existing structures, suggesting that people are reducible to nature. Positivism was always criticised by pragmatic and constructivist philosophers, as they believe that science is not value-free and it is not possible to gain an absolute truth. However, in psychology, there was only a shift in paradigms when the pre-eminence of behaviourism began to recede as theory was found to be limited in explaining phenomena (MacKenzie, 1977). Psychologists were also unconvinced that humans were so passive in their development and reacted against the neglect of the role of the conscious and the subjective person. In psychology new perspectives of cognition and humanism emerged, whilst in philosophy new paradigms materialised which took precedence over positivism. Post-positivism became the dominant framework, however this was still in direct conflict to the interpretivist paradigm.

Post-positivism is underpinned by a critical realist ontology, acknowledging that it is not possible to obtain an absolute truth. However, it is possible to 'probably' gain the truth, and to establish cause and effect through extensive testing. Post-positive researchers also accept that research is value-laden but states that these values can often be controlled e.g. controlling for bias with randomised designs and double-blind experiments. The dualisms proposed by Descartes underpin this paradigm and therefore some of the tenets of post-positivism are similar to positivism; cause and effect of pre-existing structures can be tested,

social phenomena can be studied objectively and humans are reducible to nature. Experimental and correlational designs are dominant, using quantitative methods (Johnson & Onwuegbuzie, 2004).

Interpretivism rejects Cartesian dualisms and therefore posits that the researcher and participant are inseparable (Green & Caracelli, 2007). It is considered that a person cannot be studied objectively as they are not separate from the world and the mind is not distinct from the body; research is value-laden, and therefore multiple, socially and historically constructed realities exist. Interviews, focus groups and ethnography are some of the dominant methods implemented within this paradigm (Tashakkori & Teddlie, 1998).

3.2.1 Incompatibility thesis

Paradigm purists saw the dichotomy between the two different paradigms as too diverse and the 'incompatibility thesis' (Guba & Lincoln, 1989) was postulated. Smith (1983) stated:

One approach takes a subject-object position on the relationship to subject matter; the other takes a subject-subject position. One separates facts and values, while the other perceives them as inextricably mixed. One searches for laws and the other seeks understanding. These positions do not seem to be compatible given our present state of thinking (Smith, 1983, p12).

In this view it is impossible to combine a quantitative and qualitative methodology (see table 3.2, for an overview of the different epistemological and ontological positions of the research paradigms).

Increasingly, the incompatibility view is being discarded, in part, because researchers are successfully carrying out MM research. Also as according to Reichardt & Rallis (1994), there are enough similarities between the two paradigms to enable the use of both methodologies. Both post-positivists and interpretivists contend that knowledge is fallible, however the incompatibility thesis is predicated on the notion that this is only postulated by the interpretivist paradigm. This is refuted by post-positivists who state that:

The results of an experiment probe but not prove a theory.....it is our inescapable predicament that we cannot prove a theory or other causal proposition (Campbell & Stanley, 1966, p35).

Reichardt & Rallis (1994) further contend that the methodologies are compatible as both paradigms allude to the theory-ladenness of facts. Interpretivists claim that this was unique to their own paradigm, however post-positivists also accept that a number of theories could explain the obtained data. This is extended further by both post-positivists and interpretivists positing that the theory, framework and interpretation of the results will be influenced by an investigators values, knowledge and beliefs.

Reichardt & Rallis (1994) argue that these epistemological and methodological similarities are the foundations for the use of a combination of qualitative and quantitative methodologies. However, the philosophies underlying the paradigms are still contrasting.

3.3 Pragmatism

Pragmatism is the most widely used philosophy to support MM research (Johnson et al, 2007). Howe (1988) posited the philosophy of pragmatism in response to the incompatibility thesis and claims that research paradigms can remain separate, but they can also be combined with another research paradigm.

The pragmatism movement was initially developed during the latter decades of the 19th century by the American philosopher Charles Sanders Peirce (1839-1914). This philosophy was elaborated on by William James (1842-1910), John Dewey (1859-1952), George Herbert Mead (1863-1931) and Arthur F. Bentley (1870-1957) (Maxcy, 2003). These philosophers agreed that social science inquiry was unable to access the 'real world' solely through a single 'scientific method' (Maxcy, 2003). Meaningful research for these pragmatists began not with a single method or set of methods but with ordinary experience and the desire for a better world (Wolfe, 1999). This enables the researcher to combine methods and ideas that best address and provide tentative answers to their research question(s) (Johnson et al, 2007).

Pragmatism addresses the concerns of both post-positivist and interpretivist paradigms by proposing that there are two types of analysis; quantitative and qualitative (Rosenthal & Bourgeois, 1980). In accordance with the post-positivists, universal causal structures exist, but these will never be able to be pinned down (Cherryholmes, 1992). Pragmatists such as Charles Sanders Peirce (1839-1952) differ from post-positivists as they propose that people emerge from these universal structures, they are not reduced to them. These universal structures set the stage for experience in which meaning is interpreted through the intentions and actions of the mind-world relationship (Rosenthal & Bourgeois, 1980). This second type of analysis is in harmony with the interpretivist paradigm and rejects the Cartesian dualism between science and values. According to pragmatism, research is value-laden in concordance with both post-positivism and interpretivism. This is an important premise in pragmatism – research is guided by a person's values; the topic, variables, and analysis are all chosen as they are congruent with a person's values about the appropriateness to answer the research question. The study is carried out in anticipation of the results, which will be consistent with the values of the researcher (Teddlie & Tashakkori, 1998). Both post-positivists and interpretivists claim that the results from a study are accurate and are based upon the 'best' methodology for developing new knowledge, according to their world view. Pragmatists reject the notion of the 'best' methodology and the 'correct' results and accept the use of both methodologies, acknowledging that some results and explanations will be disregarded in favour of alternative explanations. This is not because the researcher believes that the methodology is better or the results are more consistent with reality but because they have produced the results and explanations that are closer to the researcher's value system (Cherryholmes, 1992). There is no way of knowing which approach is the better and which is closer to the 'truth' as a person's values will strongly influence their approach to reality. In addition, pragmatists claim that it is unlikely that truth will be found as the world is constantly evolving. Darwinian theory influenced pragmatists such as John Dewey (1859-1952), proposing that the world and the person are dynamic; therefore the results of a study will be interpreted with thoughts about anticipated future consequences.

For pragmatists inquiry began and ended in empirical experience, however, unlike British empiricism, pragmatism was concerned with the consequences of the experience rather than being retrospective and focussed on prior experience (Muelder et al, 1960). Dewey believed in an interpretivist view of the research process and therefore considered there to be multiple subjective realities. These realities were created through social transactions rather than discovering pre-existing form and structure (Vanderstraeten & Biesta, 1998; Yardley & Bishop, 2008). Although knowledge is grounded in external reality, pragmatists also concur with the relativist (interpretivist) view that knowledge emerges in relation to a particular goal in a particular historical and social context, rather than an association to an ideal of universal objective 'truth' (Yardley & Bishop, 2008). By embracing empiricism, pragmatism encourages commonsense practical thinking (Maxcy, 2003). Therefore the aim for pragmatist inquiry is not to obtain a truth that is detached from experience, but to reach for a richer, better experience, through whichever methods are deemed necessary (Maxcy, 2003). James (1909) challenged the mono-methodological ideals of research when he wrote:

The truth of an idea is not a stagnant property inherent in it. Truth happens to an idea. It becomes true, is made true by events. Its validity is the process of its validation (edited by Gunn 2000, p135).

James and Dewey together propose that the function of a theory is that it can solve problems, not whether it is true or false (Rescher, 1995).

However, MM research is not always carried out based upon the pragmatist paradigm; various ontological and epistemological positions are employed. For example, a realist perspective may be enlisted to verify one true view. Miller (2003) states his position as a 'minimal realist' and proposes that quantitative methods should take priority over qualitative in order for the inferences to be more systematic leading to the 'best' and most feasible explanation. If divergent results were found between the quantitative and qualitative, the qualitative results would be ignored, this information becomes redundant and an opportunity to further understanding of the phenomena is missed. As the

underlying positivist paradigm does not support the use of qualitative research, paradigm purists would also question the use of this method. Although some MM researchers combine studies to verify one set of findings against the other, others want to understand a phenomenon in more depth.

Whichever research design or paradigm a researcher is most comfortable with impacts upon the dominance of the different methods within a MM study. Some are quantitative dominant, some are qualitative dominant however some are of equal magnitude. Morse (2003) claims that MM research has to have either an inductive or deductive thread running through it. For example, the quantitative study would enhance the qualitative interpretation in an inductive research project. If the thread is deductive the quantitative study would dominate with the qualitative being used to explain the quantitative results. Morse (2003) proposes that it is not possible to have a study where both the quantitative and qualitative studies have equal weighting. However, pragmatism allows for the studies to have equal status as neither a realist nor relativist position is taken. Johnson et al (2007) also disagrees with Morse's position that it is not possible to have equal status designs claiming:

Our disagreement is based on our observation or interpretation that many philosophers of epistemology and/or science hold nuanced positions that typically involve a blending of assumptions, beliefs and preferred analytical techniques (p127).

Contradictory findings between the two methods may lead to one method being prioritised over the other even if this was not the intention from the start (Creswell et al, 2008). However, if a pragmatist perspective underpins the research rather than a realist or relativist perspective, the dominant method used to explain the contradictory findings will depend upon the researcher's values, interpretations and anticipated consequences. For instance, research which has prioritised one method over another has been dependent upon the researcher's perception that one method was more developed than another (Chesla, 1992) or that one method had more validity than the other (Russek & Weinberg, 1993). It is proposed that employing pragmatism to underpin the

research allows the methods to have equal weighting throughout the research process. However, if contradictory findings emerge, one method may gain priority over the other to explain the results but this will depend upon the researcher's views and interpretation of the findings.

A MM design, acknowledging both quantitative and qualitative as equal has been proposed by Tashakkori & Teddlie (1998). This suggests that it is possible to explore and verify a theory in respect to future consequences and the researcher's values. This design according to Creswell et al (2003) is called concurrent triangulation; quantitative and qualitative studies are carried out simultaneously, equal priority is given to qualitative and quantitative studies and the studies are integrated at the interpretation phase.

3.4 Thesis design

A concurrent triangulation design, underpinned by pragmatism, is the design and underlying theoretical perspective for this thesis. Consistent with pragmatism, I believe that there is no single right or a best method to study PA and QoL in people with psychosis. However, the phenomenon needs to be investigated from different perspectives to enable a thorough understanding of this subject which is still in its infancy. Research in the field of PA and psychosis is partly limited as the psychiatric literature is dominated by the post-positivist paradigm and the associated methodology is inherent with difficulties. In the case of psychosis and PA, the sample has to be drawn from a small population group which limits the number of potential participants; generalisation is difficult as psychosis is a heterogeneous illness, with multiple pharmacological interventions. In addition recruitment can be difficult because people live in different community and clinical settings and because of apathy induced by the illness and its medication (Faulkner, 2005). Faulkner (2005) claims that 'a greater methodological diversity' is required to help overcome these problems and to shed more light on this field of study. Utilising MM could help conquer some of these difficulties and advance understanding.

As discussed in chapter one, a recovery approach is beginning to be implemented into mental health practice. This highlights the importance of the

experience of the SU being heard. It is argued that research should reflect this practice as service development should consider the views of the SU (Faulkner & Carless, 2006). However, service development is also reliant upon large, generalisable studies that can test external universal structures. The combination of methods could also be integral to developing guidelines of which the recovery approach is in concordance.

The phenomenon under study would not be understood as comprehensively without either of the quantitative or qualitative studies, especially with regards to the definition of QoL (section 1.2.3) used for this thesis which alludes to the use of both methods. Pragmatism is therefore appropriate to this study as the philosophy allows for the mixing of methods and also allows equal weighting to be given to the qualitative and quantitative methods. This is deemed to be important for this thesis as it has emerged from the literature that there is equal need to establish if a relationship between PA and QoL exists and to explore the experiences of PA in this population. In addition, utilizing a MM design can aid in the development of theory to explain why PA may improve QoL. A large number of theories have been proposed, yet none have been confirmed (see section 2.4 for an overview). MM allows for the development of theory as well as potentially confirming an existing theory.

The purposes of the study are to expand and complement, therefore three studies (one quantitative and two qualitative) have been proposed which aim to expand the knowledge of PA and QoL in people with psychosis. The three studies will be used to complement each other (seek elaboration, enhancement, illustration and clarification (Greene et al, 1989)) to answer the research question of: How does PA relate to QoL in people with psychosis? An outline of these studies and methods can be seen in figure 3.4.1.

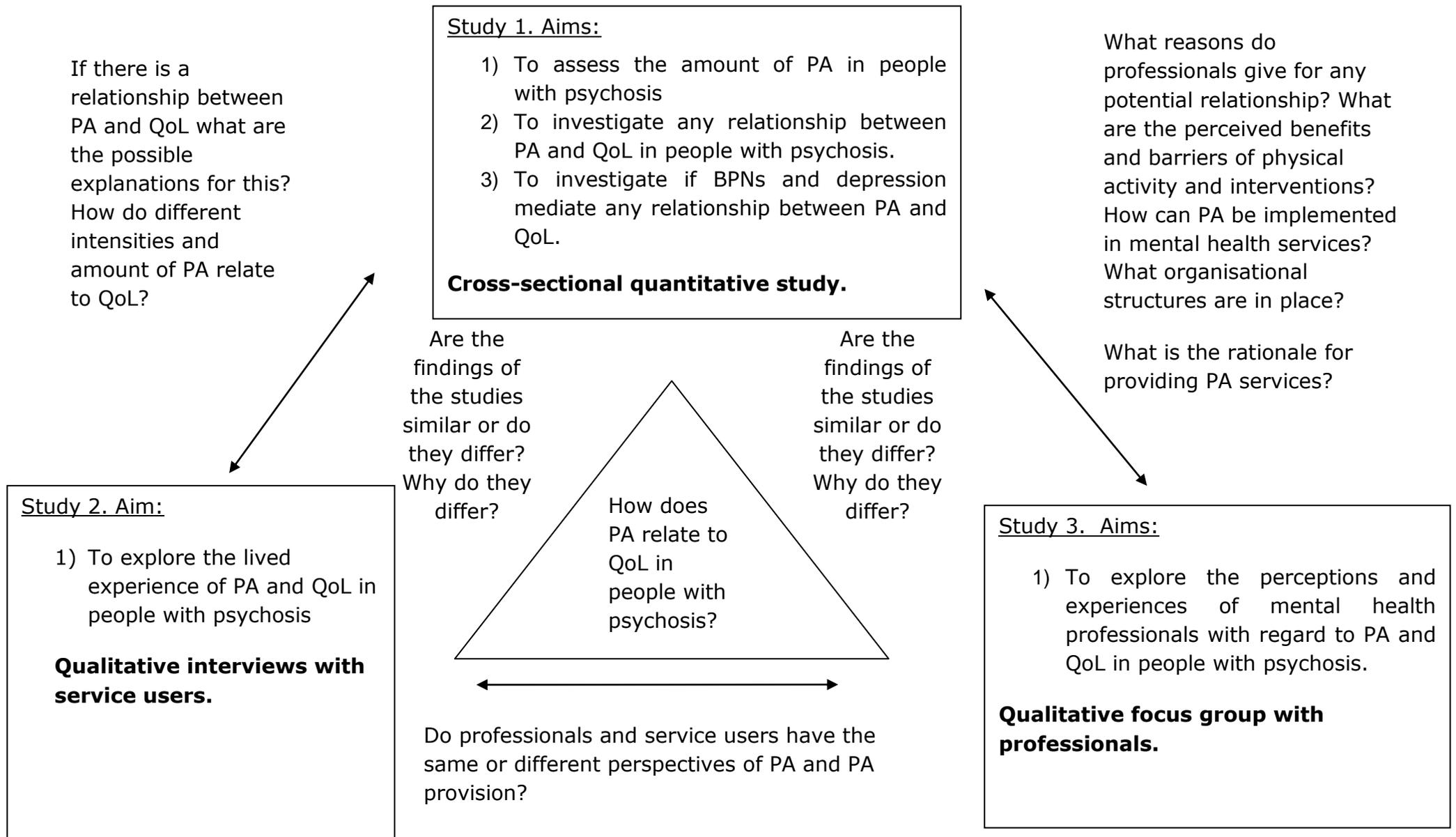


Figure 3.4.1 outline of the studies of the thesis

The quantitative study will investigate the amount of PA people undertake in psychosis, if there is a relationship between PA and QoL and to test SDT and depression as mediators of the relationship. According to pragmatic theory, external structures exist independent from the person. However, these structures are continually evolving and the interpretation of these structures emerges from the person's values, perceived future consequences and their experiences. In the case of this thesis the relationship between PA, SDT and QoL is the potential external causal structure. The interpretation of this will be aided through qualitative interviews, exploring the meaning of the external structures whilst creating new forms and structures. The research is therefore inductive and deductive with regards to theory.

3.5 Qualitative methods and an introduction to phenomenology

There are several different approaches available to qualitative psychological research, with varying epistemological positions, for example: discourse analysis, grounded theory, ethnography, phenomenological approaches, thematic analysis and more. These are briefly outlined and the appropriateness of their use for the current study explored:

- Discourse analysis is concerned with language in use. It is argued that meaning is created through shared and mutually agreed-on language which mediates and constructs our understanding of reality (Lyons, 1971). However, the aim of the current study aspires to look beyond language and for us to consider individual experiences of a certain lived phenomena.
- Grounded theory originates in sociology and proposes that meaning is negotiated and understood through interactions with others in a social process (Blumer, 1986). The purpose is to develop an explanatory theory of basic social processes, investigated in the natural environment (Glaser & Strauss, 1967). Psychologists have since adopted this method but the focus is still on explaining the social and cultural factors which may influence a group of individual's behaviour. Whilst this approach would enable an investigation of the social processes of PA and QoL, which is

deemed to be important to this phenomenon, it may neglect the individual subjective experiences. In addition, as the principal objective of grounded theory is to develop theory, large samples are often required. Furthermore, grounded theory posits that for theory to be thoroughly grounded in the data, theoretical or conceptual framework should not be predetermined (Glaser & Strauss, 1967). This was not seen as appropriate in this concurrent MM study in which a theory was being tested in the quantitative study.

- Ethnography is not a single research method but a style of research encompassing many different methods of data collection and analysis (Brewer, 2004). It has been defined as:

The study of people in naturally occurring settings or 'fields' by means of methods which capture their social meanings and ordinary activities, involving the researcher participating directly in the setting, if not also the activities in order to collect data in a systematic manner but without meaning being imposed on them externally (Brewer, 2000)

Ethnography involves an in-depth investigation of the involved setting. However, the focus of this thesis is on people with psychosis living in the community where there is a wide variety of organisations and services available, thus many situations or places would be considered part of the involved setting. It was not deemed practical to investigate all of these different organisations and all SUs who access these services. Further, I did not want to narrow the focus or scope of the overall study or research design. In addition, ethnography usually entails observation and a number of interviews with participants; this was not seen to be feasible in this population in which circumstances are continuously changing. There is evidence where ethnography has been conducted successfully about PA in this population (Faulkner & Sparkes, 1999). However, these studies have been more narrowly focused, for example Faulkner & Sparkes' (1999) study was conducted in one hostel for homeless people with mental health problems. Furthermore study is required into the lived experiences of PA in

people with psychosis who live in the community but who may or may not access community services.

- Phenomenology is concerned with the lived experiences of individuals, illuminating our understanding of experiences in the real world (Walton, 2001). A phenomenological method was deemed to be the most appropriate to satisfy the aims of study two (interviews with SUs). As a pragmatist position is taken for this thesis, phenomenology is well suited to explore the experiences of individuals and how meaning is interpreted from the external structures tested in study one (quantitative study). Using phenomenology to underpin the research and analysis provides an in-depth investigation of the lived experiences of PA and QoL. Further discussion of phenomenology and its philosophical roots can be seen in section 3.5.1.
- A thematic analysis is a method for identifying, analysing and reporting patterns across a data set (Braun & Clarke, 2006). This is seen as a flexible approach and whilst it may be guided by a specific theoretical perspective, such as phenomenology or grounded theory, this is not always required (Braun & Clarke, 2006). The type of thematic analysis depends upon the aims of the study. A thematic analysis with a flexible theoretical position was considered the most appropriate for study three (focus group interviews with professionals). As the aims of study three include exploring professionals' perceptions of PA for SUs, consisting of their combined views on the organisational structure of PA services, a flexible approach was required. Therefore, employing a specific philosophical theory to underpin the analysis may not be beneficial in understanding the professionals' shared perceptions of policy and organisational structure. Although no specific theoretical position was taken, the analysis was conducted within an interpretivist paradigm. This resulted in me being cognisant that there are multiple interpretations of external structures. Further discussion of this can be seen in section 6.2.6.

In summary, the inductive studies of the current thesis (studies two and three) use different qualitative methodologies in order to investigate the overarching research question and related aims of: To explore the lived experiences of PA and QoL in people with psychosis (study two) and; To explore the perceptions of mental health professionals with regard to PA services and PA and QoL in people with psychosis (study three). Study two will include semi-structured interviews and take a phenomenological stance and associated analysis, whereas study three will involve a focus group discussion that will be analysed using a general thematic analysis.

3.5.1 The philosophy of phenomenology

Phenomenology is the study of experience and how objects appear to consciousness (Spinelli, 2005). A number of variants of phenomenology exist, but the fundamental premise to all forms of phenomenology is that proposed by Edmund Husserl (1859-1938) the founder of the philosophy. Husserl famously suggested that to understand a person's experience the focus should be on 'the things themselves in their appearing' or how the world appears to consciousness. This is to understand the immediate, pre-knowledge and pre-reflective experience of a person. This is known as the *lifeworld*. Husserl also believed that it is possible to identify universal structures, named *essences* which underlie the experience.

3.5.1.2 Intentionality

For Husserl ([1936] 1970) the essential feature of experience is intentionality. To experience is to be conscious and to be conscious is to be conscious of *something*. Intentionality is therefore the interrelationship of our consciousness and the world and it is through this relationship that meaning is attached to the world (Spinelli, 2005). As humans we strive to make sense of the world, without meaning we become anxious and frustrated. Therefore, we stamp meaning on the objects as they appear in consciousness. The objects we experience could be a physical object such as a table or it could be a thought or an idea. For instance, if I am conscious that I am happy then I am happy about something. I am attaching meaning to the 'thing'. There is no evidence that 'things in themselves' truly exist, as reality is contextually construed by each individual.

Cartesian philosophy claims that there is a clear distinction between objective and subjective reality. Objective reality claims that objects exist outside of our conscious knowledge and they are separate structures to our consciousness. What we perceive as being out there is actually there. Whereas phenomenology claims that true reality is unknown as what we perceive to be real is linked to our own constructions of meaning (Spinelli, 2005).

The way objects are perceived will depend upon the meaning that is attached by each individual. Reality, for phenomenologists is the interpretation of the perceived objects and reality, and there is no distinction between objective and subjective reality. Cartesian philosophy argues that the mind and body are ontologically distinct, with the mind being immaterial and the body being material. Consciousness for Descartes is inner-directed and controls our actions. Phenomenology rejects Cartesian mind-body dualism and states that consciousness is embedded in the body (Merleau-Ponty, 1945). Nietzsche claimed that there is no 'ghost in the machine', directing our actions, but that the mind and body are 'part of the same operation, the operation of will' (Warnock, 1970). If consciousness was directed inwardly, how would we come to have contact with the world outside and how can we access the world of another person, trapped in their own subjectivity? (Langdrige, 2007). Phenomenologists argue that subjective experience can be accessed by another person as the mind is not internal and private but is out there in the world. Although how much can be accessed is an ongoing debate, returned to in section 3.5.1.4. It is this relationship between consciousness and the world that phenomenologists are interested to understand the lifeworld (Langdrige, 2007).

3.5.1.3 Noema and noesis

Husserl outlines that there are two 'correlational poles' (Ihde, 1986) that make up intentionality; the noema (what is being experienced) and the noesis (how it is experienced) - the two notions are inextricable. The noema is the object where our attention is focussed and the noesis is how this object is interpreted; how each individual places meaning on this object through their own cognitive, affective and cultural biases and how each individual could interpret that object in different and unique ways (Spinelli, 2005). It is because of this uniqueness of

each person's experiences that phenomenologists argue it is not possible for humans to interpret each experience in the same way and to therefore claim that all intentional acts are the same. In this thesis PA is the noema, how this is experienced by the individuals is the noesis. It could be argued that the quantitative study of this thesis ignores the noesis and only focuses on the noema as there is no attempt to explore the how.

The aim of phenomenology is therefore to understand the pre-reflective immediate experience, the lifeworld of a person. However, how much of this experience is accessible to another person and how this information is extracted is also a matter for debate (Langdrige, 2007).

3.5.1.4 Descriptive vs hermeneutic phenomenology

Essentially there are two main type of phenomenology - descriptive and hermeneutic. Husserl's work ([1936] 1970) lies within the descriptive variation in which he claims that to gain access to the immediate experience - to return 'to the things in their appearing', there is a need to suspend the everyday from consciousness - by bracketing the 'I' of the self. The 'I' consists of a person's 'natural attitude' which is a person's beliefs, experiences and knowledge, also known as our taken-for-granted presuppositions. According to Husserl, (Spinelli, 2005) the natural attitude can be removed from the correlation between the noema and noesis to gain access to a sphere of experience uncontaminated by the 'I'. This is known as the transcendental ego and is achieved through epoché, which is the method of bracketing off the natural attitude. Through epoché, Husserl believes it is possible to identify a universal essence underlying the experience on the basis of this single experience (Langdrige, 2007). The experience can therefore be described accurately without the need for explanation or interpretation.

Heidegger ([1927] 1962) a student of Husserl's, diverged from his mentor, arguing it is not possible to bracket off the natural attitude to unmask a universal essence from a single experience. Husserl acknowledged this by the end of his career, but still claimed that a description of the experience is sufficient to understanding the meaning. Nevertheless, phenomenologists remain

working in this tradition. Heidegger, a hermeneutic and existential philosopher, rejected this notion claiming that the meaning of an experience can be understood through interpretation-or hermeneutics. It is not possible to identify the essence in a neutral or detached way and can only be interpreted through historical and cultural contexts (Ihde, 1986). As the relationship between noema and noesis is inseparable, according to Heidegger, it is not possible to fully untangle and therefore only partial explanations of a person's experience can be gained and the uniqueness of each person's experiences highlighted. Hermeneutic phenomenology accepts that people have shared experiences, however each person's interpretation of a noema will be different depending upon their noesis - acknowledging a person's culture, attitude and previous experiences of the noema.

In addition, it is argued that it is not possible to identify a universal essence through the study of one experience, but through exploring a number of different people's experiences of the same phenomenon an interpreted essence can emerge.

3.5.1.5 Hermeneutic phenomenology

Heidegger agrees with Husserl's notion of 'returning to the things themselves' but differs in his view of how this is explored. Heidegger is more concerned with ontology and the everyday world of Being and Understanding, whereas Husserl was mainly interested in epistemology (Svenaeus, 2001). Heidegger was therefore concerned with what it means to be or to exist rather than what it means to know, and believed that to understand Being an hermeneutic process is required (Racher & Robinson, 2003). Heidegger proposes a threefold forestructure of understanding upon which all interpretation is grounded:

1. A fore-having: we come to a situation with a practical familiarity, that is with background practices from our world that make an interpretation possible
2. A fore-sight: because of our background we have a point of view from which we make an interpretation

3. A fore-conception: because of our background we have some expectations of what we might anticipate in an interpretation.

For Gadamer (1900-2002) this interpretation is limited and aided through language, especially conversation. It is seen as the means by which we understand the world and central to understanding is self-understanding which is culturally and historically situated (Langdrige, 2007). Gadamer suggests that understanding is both limited and enabled by 'our horizons', but these horizons are overlapping and developing all the time. We can therefore gain mutual understanding through our fusion of horizons. In this thesis the fusion of horizons occurs through the interpreter (me) and the interpretation of the text (the transcribed interviews). This fusion of horizon moves in a circular fashion between part and whole with no beginning or end. This is known as the hermeneutic circle. Heidegger ([1927] 1962) states that we are always in this hermeneutic circle of understanding. Our world is always already meaningful and intelligible. We understand and interpret something as something because we have a background of shared human practices, which allows us to be involved in daily activities as meaningful events (Plager, 1994). It is because of this shared understanding that interpretation is possible. However, to understand the phenomenon under study moving between the parts and the whole is required; a constant interpretation of the text, acknowledging background, co-constitution and pre-understanding.

3.5.2 An introduction to phenomenology as research

As stated there are two main variants to phenomenology, either descriptive or hermeneutic and therefore different phenomenological research methods have been proposed based upon the underpinning assumptions. However, the main focus of either type of phenomenological research is to understand and describe the lived experiences of the phenomenon under study. The objective of the researcher is to 'return to the things themselves' and therefore to describe the lifeworld of the phenomenon under study.

The method in which the researcher can attempt to return to the things themselves is where research methods differ, based upon the variants of phenomenology.

Giorgi's method of descriptive phenomenology, also known as the Duquesne School (Giorgi, 1985; Giorgi & Giorgi, 2003), is the most established form of phenomenological method and rigidly adheres to the philosophy of Husserl. Often, participants are asked to provide written accounts of the phenomenon, although unstructured and semi-structured interviews can be used. Analysis is undertaken through engagement with epoché and the phenomenological reduction. This is where the researcher attempts to bracket off their preconceptions of the phenomenon and describe what appears in their consciousness. All detail that is perceived should be described without meaning being attached. Imaginative variation is then carried out which is a process of imaginatively varying elements of the phenomenon in order for the essence of the phenomenon to appear.

Hermeneutic methods of phenomenology do not usually engage in epoché and as their foundations lay with Heidegger's philosophy, it is claimed that a phenomenon can only be understood through interpretation. The most common method is Interpretive Phenomenological Analysis (IPA), founded by Jonathan Smith in the late 1990's (Smith, 1996). This method follows a very structured thematic approach to analysis. The focus is on the experience of the lifeworld and findings would acknowledge that they are interpreted with the researcher's preconceptions. However, IPA is also concerned with an individual's cognitive processes; this is at odds with phenomenology's rejection of a mind-body dualism (Langdridge, 2007). It has therefore been subject to criticism as it is not perceived to be truly phenomenological (Willig, 2001).

Another hermeneutic phenomenological method is proposed by Max van Manen (1990). A much less structured approach is taken in this type of analysis than in IPA and it is stated that the method should be appropriate for the sample and the phenomenon under study. Van Manen (1990) proposes using four existential givens of the lifeworld: temporality (lived time), spatiality (lived space), embodiment (lived body) and sociality (lived relation with others), which can be used in the interpretation of the analysis. Further consideration of these existentials can be seen in sections 5.4.1, 5.4.2, 5.4.3 & 5.4.4. In this approach epoché is also not undertaken.

A van Manen (1990) hermeneutic approach to phenomenology is taken for study two in this thesis. A hermeneutic approach was decided upon, in consideration of the wider thesis. I would find it very difficult to engage in epoché given the quantitative study and its analysis is undertaken concurrently with the qualitative studies. Equally my views fall into line with Heidegger as I believe that there is always some form of interpretation between researcher and text as I am embedded in social and historical values.

The perception that an individual's social and historical values impact upon research is also fundamental to pragmatism as it is to a recovery approach to psychosis, providing further justification of the approach. The recovery approach outlines that meaningful experiences are central to recovery and these experiences are culturally interpreted by each individual. Therefore, a hermeneutic phenomenological approach is well suited to exploring the meaning of PA in recovery from psychosis, which acknowledges and aims to understand the cultural and historically situated individual.

The phenomenological method of van Manen (1990) was chosen over IPA as it allows greater freedom with the analysis and is less prescriptive than IPA. This was deemed important in this MM study where flexibility was required. Additionally, greater flexibility was required in a population of people with psychosis who are known to have cognitive difficulties. Furthermore, as the focus of this study was on PA and individuals with psychosis, the four existentials outlined by van Manen were deemed to add further depth to the understanding of the lived experience of PA.

3.6 Summary

This chapter argues that both quantitative and qualitative methods are required to contribute a significant knowledge to the phenomenon of PA and QoL. Pragmatism is postulated as the philosophy which allows these methods to be combined together in one research project. In addition to this a rationale was provided for study two to be informed by hermeneutic phenomenology, which entails a rich exploration of the lived experience of the phenomenon under study. It is believed that this methodology is the most appropriate to achieve the

aims of the study. The specific methods of each study will be described in the following three chapters. There is one chapter dedicated to the methods and findings of each study.

Chapter 4

Study One: A Survey of Physical Activity and Quality of Life in People with Psychosis

This chapter will detail the methods and results of study one: a quantitative study assessing the relationship between PA and QoL. This chapter contains the methods, findings and discussion of the findings for study one.

4.1 Introduction

As discussed in the literature review of this thesis - people with psychosis have been found to have lower scores on QoL measures than the general population (Bobes and Gonzalez, 1997). Poorer QoL also tends to be related to poorer physical health and the negative symptoms of psychosis, most notably depression (Koivumaa-Honkanen et al 2001; Ho et al, 1998). A number of studies have suggested that PA can improve QoL in people with psychosis (e.g. Holley et al 2011; Acil et al, 2008; Carless & Douglas, 2008). Although QoL has been measured in small scale experimental studies of PA in people with psychosis (Acil et al, 2008; Duraiswamy et al, 2007), the relationship between QoL and the amount of PA in a community based cross-section of people with psychosis has not been assessed. In addition, the amount of PA in this population has not been measured, using a validated scale in England. Some studies have found that people with psychosis undertake less PA than those in the general population (Elmslie et al, 2001; Brown et al, 1999). Whilst other studies have found no differences in the percentage of people achieving the recommended levels of PA (Cairney et al, 2009; McLeod et al, 2009; McReadie, 2003).

Studies have shown a high prevalence of depressive symptoms among people with psychosis (Sim et al, 2004). These are associated with poorer recovery, less employment, lower activity, increased rates of rehospitalisation and greater suicidal tendencies (Sands & Harrow, 1999; Siris, 2001). Therefore, in considering the relationship between PA and QoL in people with psychosis, the

role of depression could be considered as a possible mediating factor. This is further supported by findings suggesting that greater levels of PA are related to a reduced risk of depression (e.g. Bernaards et al, 2006), and may reduce depressive symptoms in those without psychosis (e.g. Dunn et al, 2005).

In addition, it is argued that the basic psychological needs (BPNs) of autonomy, competence and relatedness are thwarted in people with psychosis who are not in recovery (Carless & Faulkner, 2003). PA has been found to improve the BPNs in the general population (Gagne et al, 2003; Standage et al, 2005; Wilson et al, 2006; Fox, 1997), and in those with mental health problems (Hodgson et al, 2011, Crone, 2007, Carless & Douglas, 2008). It is therefore suggested that these factors could help explain any potential relationship between PA and QoL in people with psychosis (Carless & Faulkner, 2003).

4.2 Aims and objectives

The aims of study one are threefold:

- 1) To assess the amount of PA in people with psychosis
- 2) To investigate any relationship between PA and QoL in people with psychosis.
- 3) To investigate if BPNs and depression mediate any relationship between PA and QoL.

The hypotheses are:

- There will be a positive relationship between PA and QoL in people with psychosis.
- People with psychosis who reach PA guidelines will have a better QoL than those who do not achieve the recommendations.
- PA will be related to depression and BPNs in people with psychosis.
- The relationship between PA and QoL will be mediated by BPNs and depression.

4.3 Method

4.3.1 Design

A cross-sectional survey design was used with self-report measures to investigate the amount of PA and the relationships between PA, BPNs, depression and QoL in people with psychosis.

4.3.2 Participants

A convenience sample was utilised in order to gain the maximum number of participants available from a small population. Care was also taken to recruit participants attending a range of services, thereby increasing variability in the sample.

Participants were recruited from working age adult services. It was decided to exclude inpatients and focus only on those living in the community. This would ensure patients with acute mental health problems would be excluded and ensure the survey reflected the amount of PA carried out by people with a diagnosis of psychosis in the community. Inevitably, those who were inpatients would have restricted opportunities for PA.

The Inclusion criteria were as follows:

- Aged between 18 and 65.
- Having an ICD-10 diagnosis of psychosis, including the illnesses schizophrenia, bipolar disorder, schizoaffective disorder, schizophreniform disorder and major depression with psychotic features.
- In community care.
- Have reasonable literacy skills and able to consent and complete the questionnaires.

Exclusion criteria:

- If they were 'in crisis' at the moment, as determined by the key worker or psychiatrist.

- If they had not been formally diagnosed as having psychosis by a mental health professional.
- If they did not speak English (resources were not available to fund translators).

4.3.3 Measures

Participants were asked to complete demographic information on: sex, age, ethnicity, marital status, employment, living arrangements. Participants were also asked to report if they had any other co-morbidities and what medication they were currently taking. Diagnosis was gained from a mental health professional, usually the key worker (mental health professional assigned to the SU) or consultant psychiatrist, with the participants consent (see appendix one).

A number of self-report measures were included to assess the variables of QoL, Depression, PA, BPNs and depression. These are described below with a justification for their use.

4.3.3.1 Measuring QoL

SF-12 (Ware, 1996) (See appendix two)

Participants completed the SF-12 (Ware 1996); a subjective QoL self-report measure. The SF-12 is a shortened version of the SF-36 (Ware & Shelbourne, 1992) and generates two summary scores of physical health (PH) and Mental health (MH). Eight subscales are also derived: General Health, Physical Functioning, Role Physical, Role Emotional, Bodily Pain, Vitality, Mental Health, Social Functioning.

Awad (2000) suggests six points should be adhered to when measuring QoL in people with psychosis. These six points are outlined below with a rationale provided for the choice of measure in this study.

1. *QoL is a multidimensional construct and this has to be reflected in its measurement.* As can be seen from the description above the SF-12 provided a

number of subscales assessing multiple components, representing the multidimensional nature of QoL.

2. *The scale has to be appropriate to the population under study, the clinical condition and the phase of illness. It's psychometrics have to be known and documented.* Although the SF-12 scale was not designed specifically for a population with psychosis, both this scale and the longer SF-36 have been frequently and accurately used in this population. A global measure of QoL was chosen over a specific one for people with psychosis to enable the norms to be compared to a variety of populations. Utilising the SF-12 counters some of the criticisms levelled at subjective self-report measures, such as; the measures are often limited in terms of psychometric properties (Wilkinson et al, 2000). Both the SF-12 and SF-36 have been found to have high validity and reliability when implemented in this population (Pukrop et al, 2003; Vojta et al, 2001; Salyers et al, 2000; Russo et al, 1998; Tunis et al, 1999; Leidy et al, 1998). The SF-36 was found to have good test-retest reliability and internal consistency. These scores ranged from 0.71 (social function subscale) to 0.89 (physical function subscale) in a population of people with psychosis (Hewitt, 2007). Although a lot of the validity and reliability research has been carried out on the SF-36 rather than the SF-12, Ware et al (1996) found the MH and PH of the SF-12 were highly correlated with their respective components on the SF-36. In addition, Salyers et al (2000) found that test-retest reliability was 0.79 for both PH and MH in people with psychosis on the SF-12.

3. *QoL is a subjective phenomenon and any approach has to include patients self-reports.* The SF-12 is a subjective measure, an objective measure was not appropriate for this study.

4. *The scale has to be adapted to the life of psychotic patients - some can be taxing on the compromised cognitive ability of many patients with psychosis.* The SF-12 only entails 12 items. Therefore it was beneficial for people with psychosis who are known to have a limited attention span (Mialet et al, 1996; Rund et al, 1998). In addition, the most frequently used measures in the research discussed in chapter two are the SF-36 or the SF-12.

Before the study took place, all of the measures used were piloted amongst a group of SUs to assess comprehension and the length of time to complete the measures. On average the questionnaire pack took 20 minutes to complete, with the SF-12 taking under 5 minutes. The participants reported that they found it clear and easy to understand.

5. *Scale to be consistent with theoretical framework that the researcher uses to understand and define QoL in the study.* The summary domains and the subscales were consistent with the theoretical framework of recovery, and therefore are consistent with the fifth recommendation. In addition, the SF-12 assessed mental health, physical health and social functioning which are considered important aspects of QoL with respect to PA and psychosis as discussed in chapter two.

6. *The scale has to be sensitive to pick up relatively small changes.* This point was not considered upon the choice of measure as the objective was not to assess change in QoL over a period of time, but to obtain a cross-sectional assessment of QoL.

Scoring of the SF-12

Procedures for the scoring of the SF-12 were followed from the user's manual for the SF-12 (Ware et al, 2009).

Following data input, re-coding of the reverse items was undertaken. The protocol outlined that raw scores should be calculated for each of the 8 subscales and these were transformed to a score of 0-100. These transformed scores were standardised and a norm-based score was calculated for each of the sub-scales. The advantage of using the norm-based score is that the results for one scale can be meaningfully compared with the other sub-scales and the two summary measures of PH and MH and their scores can be directly compared to the general population. A linear z-score transformation was used in order for all eight subscales to have a mean of 50 and a SD of 10, based upon the 1998 general US population. Although it could be argued norms from the UK should be used, it is strongly recommended by the authors (Ware et al, 2009) that to

promote consistency across measures that the norms for the US are used for ease of comparison.

To compute the two summary scores of PH and MH, the z-score of each SF-12 was multiplied by its respective physical or mental factor score coefficient to gain an aggregate physical and mental health summary score. These aggregate scores were transformed to a norm-based score with a mean of 50 and a SD of 10.

4.3.3.2 Depression measures

A variety of instruments exist for measuring depression, however, it is argued that not all of these are appropriate to measure depressive symptoms in people with psychosis (Chemerinski et al, 2008). Therefore, specific measures have been designed to assess depressive symptoms in people with psychosis such as the Calgary Depression Scale (Addington et al, 1990). This scale has been found to be superior to some scales developed for those in a non-psychotic population, such as the Hamilton Depression Rating Scale (HAM-D) (Hamilton, 1960) and the Present State Examination (Wing et al, 1974). However, the Beck Depression Inventory II (BDI-II) (Beck et al, 1996) has presented similar results to the Calgary Depression Scale in people with psychosis and correlates significantly (Addington et al, 1993). This suggests that this is an accurate measure of depression in people with psychosis. In contrast to the Calgary Depression Scale, the BDI-II is a self-report measure, rather than a clinician-led assessment of depression and was therefore more appropriate to a self-report survey, because of the emphasis upon the subjective person. It was also chosen to be used for the current study, as the results can be compared across different populations (Chemerinski et al, 2008).

The Beck Depression Inventory II (BDI-II) (Beck et al 1996) (see appendix three)

The BDI-II is a 21 item self-report measure, assessing symptoms of depression in adults.

Internal consistencies have generally been reported to be high for the BDI-II (coefficient $\alpha > 0.90$). Convergent validities have been reported to be moderate to high ($r > 0.50$) with other self-report and clinical rating scales of depression in psychiatric populations, including those with psychosis (Colis et al, 2006). Test-retest reliability of 0.93 is high (Beck et al, 1996).

Scoring of the BDI-II

The BDI-II was scored by summing up each of the ratings on each of the 21 items. Each item was rated on scale from 0-3 and total scores range between 0 and 63. A continuous score was reported, and the scores were categorised into minimal (0-13), mild (14-19), moderate (20-28) and severe (29-63) symptoms of depression.

4.3.3.3 Physical activity measurement

To the author's knowledge two PA scales have been assessed for validity and reliability in a population of people with psychosis; the short version of International Physical Activity Questionnaire (IPAQ) and the 7 day PA recall questionnaire. The latter scale was found to be reliable but with questionable validity (Soundy et al, 2007b), whereas the IPAQ was found to have a correlation coefficient of 0.68 for reliability and 0.37 for criterion validity (compared against accelerometer), based on total reported minutes of physical activity (Faulkner et al, 2006). This was similar to reliability and validity information for the IPAQ used in the general population with scores of reliability of 0.8 and criterion validity (compared against accelerometer) of 0.30 (Craig et al, 2003). It was therefore considered appropriate for use in this study.

International Physical Activity Questionnaire (IPAQ) (Craig et al, 2003) (see appendix four)

Data from the IPAQ were categorised into low, medium and high activity levels, and PA was expressed as a continuous measure of the amount of energy expended (METs) over a 7 day period. The intensity of PA was also derived, producing a score for the amount of walking, moderate and vigorous intensity

activity. Scores for the amount of time spent and frequency of each intensity of PA were also calculated.

In addition to the psychometric properties of the IPAQ, there are a further three reasons for choosing the IPAQ. Firstly, it is deemed as being easy to administer and relatively undemanding for both respondents and investigators (Faulkner et al, 2006), especially as the short form was only 4 questions long. Secondly, it assessed walking behaviour which is reported as being the most common type of PA for people with psychosis (Richardson et al, 2005; McLeod et al, 2009). Thirdly, the IPAQ has been frequently used in a variety of countries and in population surveys (Craig et al, 2003), producing comparable data and promotes consistency in measurement (Faulkner et al, 2007). The IPAQ is easily available at <http://ipaq.ki.se/> and in a number of different languages.

IPAQ scoring

The scoring of the IPAQ followed the protocol outlined on <http://www.ipaq.ki.se/scoring.pdf>.

Following data collection and input, the IPAQ data was reviewed. Craig et al (2003) state that PA data is usually skewed; they therefore recommend measures to be taken in an attempt to normalise the data. In line with these recommendations for scoring IPAQ, values less than 10 minutes of PA was transformed to 0 and daily activity bouts more than 180 minutes were capped at 180 minutes.

The scores for IPAQ were presented as a categorical outcome into low, medium and high PA and a number of continuous outcomes. The continuous outcomes consisted of: total volume of PA, volume of vigorous, moderate and walking, total amount of PA, amount of vigorous, moderate and walking and frequency of vigorous, moderate and walking.

The volume of low, medium, high and total PA was calculated and converted to METs. METs are multiples of resting metabolic rate. One MET is equal to a person's rate of energy expenditure when at rest. As a guide moderate PA is classed as between 3.0 – 6.0 METs and vigorous PA is anything greater than 6.0

METs (Pate et al, 1995). The MET values recommended for use when scoring IPAQ data are based upon a compendium of physical activities (Ainsworth et al, 2000). An average MET score for all types of walking, moderate-intensity and vigorous-intensity activities was derived and the following MET values were recommended when calculating volumes for PA on the IPAQ:

Walking = 3.3 METs*

Moderate-intensity = 4.0 METs

Vigorous-intensity = 8.0 METs

* 3.3 METs is classed as moderate intensity PA.

To calculate weekly METs of each of the categories, the following equation was used: Frequency (days) x Duration (minutes) x Intensity (MET value). The scores of each of the categories were summed to calculate the total physical activity METs for the week.

The frequency of PA was reported, which is the number of occasions each of the different intensities of PA were undertaken in a week. The total amount of PA and amount of PA for each intensity was also reported which is frequency x duration and therefore does not include METs.

Categorising the data

The categories outlined below were cut-off points based upon PA guidelines (Craig et al, 2003).

High volume of PA

The two criteria for classification as 'high' were:

a) vigorous-intensity activity on at least 3 days achieving a minimum Total PA of at least 1500 MET-minutes/week

Or

b) 7 or more days of any combination of walking, moderate-intensity or vigorous-intensity activities achieving a minimum Total PA of at least 3000 MET-minutes/week.

Medium volume of PA

The pattern of activity to be classified as medium was either of the following criteria:

a) 3 or more days of vigorous-intensity activity of at least 20 minutes per day

Or

b) 5 or more days of moderate-intensity activity and/or walking of at least 30 minutes per day

Or

c) 5 or more days of any combination of walking, moderate-intensity or vigorous intensity activities achieving a minimum total physical activity of at least 600 MET-minutes/week.

Low volume of PA

Participants not achieving medium or high levels of PA were categorised as having low PA levels. If they did not achieve medium levels of PA, they were not achieving public health recommendations of 150 minutes a week of moderate-vigorous PA a week.

4.3.3.4 Measure of Basic Psychological Needs

As outlined in chapters one and two, self determination theory was used to investigate possible mediating factors in the relationship between PA and QoL. A key element of this theory was that the BPNs of autonomy, competence and relatedness need to be satisfied, in order for QoL to thrive. There was only one appropriate measure of BPNs available, as detailed below.

The Basic Psychological Needs in General Scale (Gagne, 2003) See appendix five

This scale is a 21 item self-report measure assessing the three psychological needs of autonomy, relatedness and competence, based on SDT.

Research has been undertaken assessing the psychological needs and well-being in relation to exercise, with the context specific measure of The Basic Psychological Needs in Exercise Scale (Vlachopoulos, & Michailidou, 2006) has often been implemented. This scale was not deemed as relevant to this study as

it assumes that people are active and specifically assesses if an individual's psychological needs are met in a PA context, rather than in general. As the current study aims to assess PA across a population in which some will not be active, this scale was not appropriate.

The BPN in general scale has not been assessed for validity and reliability in a population of people with psychosis. However, construct validity has been assessed in the general population where confirmatory factor analysis found that the three needs of autonomy, competence and relatedness do represent distinct categories and this corresponds to the items on the scale (Johnston and Finney, 2010). Johnston and Finney (2010) found that the three needs as assessed by the scale correspond to the external theoretical constructs of well-being and QoL.

Scoring of Basic Psychological Needs scale

Scores for negatively worded items were reversed. The sum of each subscale was calculated and an average was derived to form the three subscale scores of autonomy, competence and relatedness. The scores could be presented as an overall score of need satisfaction, however this was decided against as more in - depth information can be gained from using the subscales.

4.3.4 Procedure of recruitment and data collection

Local mental health charities and managers of NHS community teams in the South West Yorkshire Partnership NHS Foundation Trust were e-mailed a letter of invitation (see appendix six) to discuss the possibility of administering questionnaires to their SUs. The teams included: Community Mental Health Teams, Assertive Outreach Teams and Day Services. If managers expressed an interest in participating, a meeting was arranged with either themselves or their team. At the meeting the research was explained and instructions were given to professionals on how to administer the questionnaires. In order to recruit participants who were attending the range of services available from the Trust, three different methods of administering the questionnaires were employed, depending upon the team providing a service and what the professionals thought was feasible. See figure 4.3.4 for an overview of this procedure.

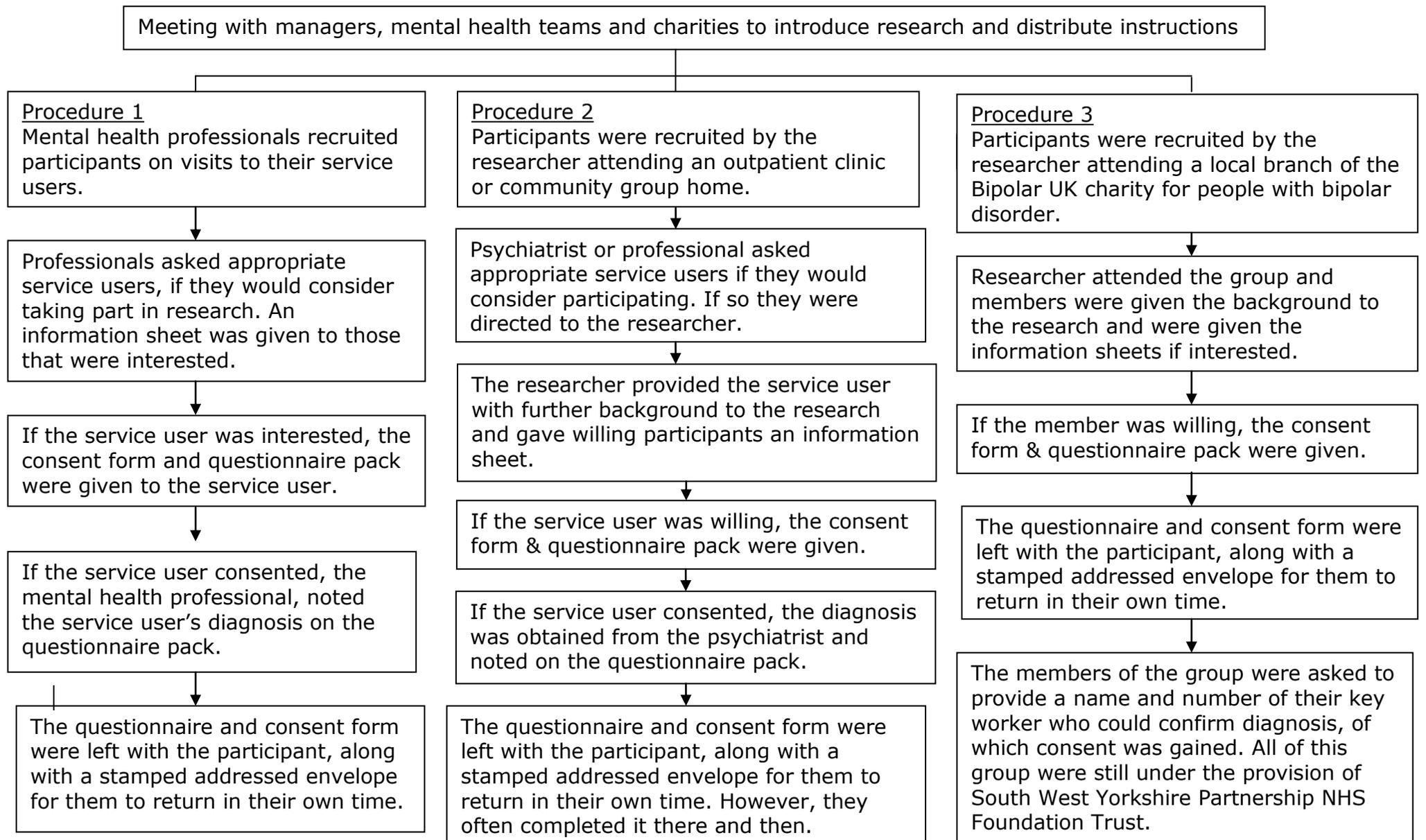


Figure 4.3.4 Procedure for recruitment and conduct of study one

The information sheet can be seen in appendix seven and the consent form in appendix eight.

In procedure two, participants were asked if they required any assistance completing the questionnaires. If assistance was required, the researcher went through the questionnaires with the participant in a confidential room.

31/79 (39%) of the participants required assistance in completing these questionnaires. A code was given to those who required assistance, in order for any differences in these responses to be explored within the analysis.

Return of the questionnaires

Once the questionnaire and consent form were returned, the SU's name was given a code which was utilised thereafter in the data analysis and recording of data. The consent forms were separated from the questionnaires and were kept in a locked filing cabinet in a restricted access room. Only the researcher had access to the filing cabinet. The data was stored on a password protected computer.

4.3.5 Ethics

Ethical approval from the University of Huddersfield and from the NHS Local Research Ethics Committee was gained. Approval was also gained from the participating NHS Trust where the participants were receiving care (Approval letters can be seen in appendix nine).

A number of ethical considerations were undertaken; most of these issues were addressed in the procedure outlined above. For instance, the anonymity of the participants was ensured through coding the questionnaires and storing the coded questionnaires separately from the consent forms. However, further considerations of confidentiality were adhered to. In procedure one, when the professionals were asked to note the SUs diagnosis, they were asked to do this by inserting a code which represented one of the mental health problems which fall under the psychosis umbrella (see appendix ten). This precaution was undertaken as the questionnaire with the diagnosis stated could be in the

participant's home for a number of days or weeks, before they returned the questionnaire.

In procedure one it was decided that the professionals would not stay and help SUs complete the questionnaires on a number of ethical fronts. Firstly, it was deemed unfair to put extra pressure on professionals who were already busy. Secondly, if they had stayed whilst the questionnaires were completed the SU may have felt coerced into completing the pack. Thirdly, the SUs may not have wanted the mental health professionals seeing how they rated items. Indeed, during procedure two when I had the opportunity to deliver the questionnaires myself, a number of SUs were concerned that professionals would see the results and would only complete the questionnaires on assurances that the scores would not be shared. However, there was a caveat to this response; if it was identified, through the scoring on the BDI-II that the participant was at risk to themselves, the researcher would be obliged to inform a professional – usually their key worker. The participants were asked to provide details of their key worker and this condition was made clear in the information sheet provided at the time of consent.

Obtaining the diagnosis of the participants was also an important consideration. As aforementioned, the diagnosis of each individual was gained from either the psychiatrist or key worker with the consent of the participant. It was deemed appropriate to gain this diagnosis from a professional because it was possible some participants may not know their diagnosis. However, during data collection it became apparent that some participants were offended that this information was required from a professional when they felt they were capable of providing it themselves. It was explained to these participants that whilst they were aware of their diagnosis, not everybody knows what diagnosis they have been formally provided. This did result in some participants deciding not to complete the questionnaires. However, it did become clear during procedure two that not everybody was aware of their specific diagnosis. Some participants knew they had some form of severe mental illness, but were not sure which and some participants would claim they had a different diagnosis to that reported by the psychiatrist. On other occasions, people had no idea what diagnosis they had.

Asking the professionals for the diagnosis with the participant's consent was deemed more appropriate than gaining access to medical records. It was not necessary to obtain this clearance as the only essential information required was the diagnosis, and it was much more practical to obtain this directly from the professional.

4.3.6 Analysis

Analysis plan

The initial analysis plan consisted of:

- 1) Descriptive statistics of demographic information and outcome measures
- 2) MANOVAs to be carried out to assess the differences across procedures
- 3) ANOVA to establish if there is any difference in QoL for those that do and do not meet the PA guidelines.
- 4) ANCOVA for potential co-variates upon assessing the difference of QoL in people that do and do not meet the guidelines.
- 5) Correlations (either pearson's product moment or spearman's rank order correlation, depending upon if the data met the assumptions of parametric tests) between PA, QoL, depression and BPNs.
- 6) Partial correlations to control for demographic variables in any relationship between PA and QoL.
- 7) Multiple regression to determine if BPNs and depression mediate any relation between PA and QoL.

Two tailed tests would be carried out on all the tests.

Sample size

The sample was sought from an estimated population of 3,483 people who are clustered together within the Mental Health Trust as requiring psychosis care. These figures were gained from a census conducted in the Mental Health Trust participating in the study, immediately prior to the commencement of the study. However, the actual number of people with a diagnosis of psychosis in the Trust is unknown and is likely to be much lower than 3,483. This estimated figure included people who did not have a diagnosis of psychosis, but were perceived

to need some aspects of psychosis care. In addition, as all practitioners were asked to provide information on their caseloads, some SUs were represented more than once if they were on more than one practitioner's caseload. Furthermore, some practitioners included SUs who were over 65. The figure also included SUs who were considered to be in crisis and inpatients who were excluded from the study. It is therefore difficult to assess how many suitable people were potentially available to be included in the study. Therefore this presents difficulty in generalising the findings to the wider population.

Sample size was determined through calculating what was required to meet the assumptions of multiple regressions. The aim of the study was to determine if the BPNs and depression mediate the relationship between PA and QoL, using multiple regression. Therefore, the minimum number of participants required was 75 using guidelines by Stevens (1996), who suggests that 15 subjects per predictor are needed for reliable equations. This is based upon there being 5 predictors of QoL. These were: autonomy, competence, relatedness, depression and volume of PA. This calculation of sample size is based upon the p^2 (squared population multiple correlation) of 0.50 (recommended as appropriate for psychological research), with the loss of predictive power or shrinkage to be less than 0.05 and probability at 0.90. This has been found to be an equation which cross-validates well (Stevens, 2002; Park & Dudycha, 1974). Stevens (2002) states that to establish sample size for multiple regression, the importance is on the development of a prediction equation that has generalisability, rather than conducting a power analysis.

4.3.6.1 Analysis procedure

The analysis was undertaken in stages. Initially data was screened for missing data, outliers and normality. Data transformations were carried out on non-normally distributed variables. However it was not possible to transform all variables.

Descriptive statistics outlining the frequencies, percentages and means of demographic information and the outcome variables of: MH and PH and the eight subscales of the SF-12; total volume of PA, volume of walking, moderate and

vigorous PA; total amount of time spent in PA, walking, moderate and vigorous PA; frequency of walking, moderate and vigorous PA; autonomy, competence and relatedness; and depression were reported. The percentage of people in each category of PA and depression was also reported.

MANOVAs were employed to investigate differences between the scores of the questionnaires for the different location and procedures of questionnaire administration.

One-way ANOVAs were undertaken to assess the differences between PA categories and all summary and subscales of QoL. ANCOVAs were carried out to adjust for age on significant findings.

Spearman's rank order correlations were carried out to assess the relationship between PA, QoL, depression and BPNs. Partial correlations were carried out to control for the effect of age and status which were found to be the only demographic variables significantly associated with both PA and QoL variables.

It was intended that multiple regressions would be carried out to assess if BPNs and depression mediate the relationship between PA and QoL. However, because of non-significant weak correlations, undertaking multiple regressions was inappropriate.

All of the data was entered into PASW statistics 17.

4.4 Results

4.4.1 Return Rate

83 questionnaires were returned in total. The different procedures used to obtain the questionnaires produced different return rates. The return rates for the different procedures can be seen in table 4.4.1.

Table 4.4.1 Return rate of the questionnaires

	Number of questionnaires distributed	Number of questionnaires returned	Number of questionnaires to be used	Return Rate
Total	255	83	79	32.55%
Procedure 1	186*	29	29	15.59%
Procedure 2	59	49	46	83.05%
Charity groups	10	5	4	40%

*264 questionnaires were initially given to staff in procedure one, 186 were distributed to SUs.

Table 4.4.1 shows that the most successful method for participants completing and returning the questionnaires was procedure two. The researcher had direct contact with the participants in procedure two and a lot of the participants chose to complete the questionnaires at the clinic.

Table 4.4.1 outlines that 4 questionnaires were returned but were not entered into the analysis. The reasons for this were: one participant did not have a diagnosis of psychosis; two participants had a large amount of missing data; one participant's returned questionnaire showed obvious signs of acquiescent responding. The participant had circled the first possible response for every item on all of the questionnaires. Therefore 79 participants were included in analysis.

4.4.2 Demographic information

Table 4.4.2 shows the demographic information and other descriptive information on the participants. It shows a nearly even split of males and females (40 and 39 respectively). 46.8% had a diagnosis of Schizophrenia, 26.6% Bipolar disorder, and 26.6% had other forms of psychosis. Most of the participants (65%) were unemployed, 6% were employed full time, 9% employed part time, 12% undertaking voluntary work, and 5% retired. Most (71%) were single, 11% were married, 11% divorced, and 4% widowed.

Table 4.4.2. Demographic information of the participants

Demographic	Frequency (n)	Percentage (%)
Diagnosis		
Schizophrenia	37	46.8
Bipolar Disorder	21	26.6
Psychosis	9	11.4
Major Depression with Psychotic features	4	5.1
Schizophreniform disorder	1	1.3
Schizo-affective disorder	4	5.1
Sex		
Male	40	50.6
Female	39	49.4
Ethnicity		
White British	67	85.9
Other white	2	2.8
Indian	2	2.8
Other Asian	2	2.8
Caribbean	3	4.2
Other Black	2	2.8
Missing	1	1.3
Place of completion		
Outpatient clinic	37	46.8
Community teams & charities	33	41.8
Outpatient clinic & group home	46	58.2
Employment		
Employed full-time	5	6.3
Employed part-time	7	8.9
Unemployed	51	64.6
Voluntary work	9	11.4
Unpaid house worker	1	1.3
Retired	4	5.1
Missing	2	2.5
Status		
Single	56	70.9
Married	9	11.4
Divorced	9	11.4
Widowed	3	3.9
Missing	2	2.5
Accommodation		
Alone	32	40.5
Group Home	15	19.0
Partner	11	13.9
Family	17	21.5
Missing	3	3.8

Demographic	Frequency (n)	Percentage (%)
<i>Duration of illness</i>		
0-1 year	2	2.5
1-5 years	19	24.1
5-10 years	7	8.9
More than 10	41	51.9
Don't know	8	10.1
Missing	2	2.5
<i>Medication</i>		
Yes	68	88.3
No	7	9.9
Missing	2	2.5
<i>Co-morbidity</i>		
Yes	32	40.5
No	45	57
Missing	2	2.5
Age	mean = 43.01, SD = 13.63	Range 19-68 years old.

4.4.3 Descriptive information of PA

As outlined above participants were categorised into low, medium or high activity groups. The low category represents people who are not meeting public health recommendations.

Table 4.4.3a Levels of PA categorised from IPAQ scores

Physical activity level	Number (%) of people at level of PA	Number (%) of males at level of PA*	Number (%) of females at level of PA
Low	28 (35.4%)	12 (30.0%)	16 (41.0%)
Medium	33 (45.6%)	16 (47.5%)	17 (43.6%)
High	15 (19%)	9 (22.5%)	6 (15.4%)

* missing (n=3)

Table 4.4.3a shows the levels of PA, categorised into low, medium or high activity groups based on IPAQ scores, for the whole sample and males and females. The low category represents people who are not meeting public health recommendations. This shows that 65% of the population were meeting PA guidelines (medium and high categories), 70% of males & 59% of females (a chi square test showed no significant differences between males and females across the different PA categories). The most recent Health Survey for England (HSE)

(2008) found that 39% of men and 29% of women were reaching the same PA guidelines, suggesting that PA is much higher in a population of people with psychosis. However, the IPAQ was not used in that study but the same PA guidelines were used and the results also calculated using METs.

Comparisons with UK population data which used the IPAQ in a Eurobarometer survey (Sjöström et al, 2006) are as follows: Low (current study 35%, Eurobarometer study 37%); Medium (current study 46%, Eurobarometer study 34%); High (current study 19%, Eurobarometer study 29%); meeting minimum guidelines (current study 65%, Eurobarometer study 63%); prevalence of walking 150 minutes (current study 48%, Eurobarometer study 34%). Table 4.4.3b shows the differences between the findings from this study and the UK population in relation to gender.

Table 4.4.3b Comparison of PA and gender for the Eurobarometer survey and study one.

	Gender	Low (%)	Medium (%)	High (%)	Meeting Guidelines(%)	Walking 5x30minutes/ week (%)
Study 1	Male	30.0	47.5	22.5	70.0	47.5
	Female	41.0	44.0	15.4	59.0	43.6
Eurobarometer	Male	34.0	30.4	35.6	66.0	34.4
	Female	40.7	36.9	22.4	59.3	33.4

Figure 4.4.3a breaks down the percentage of METs and amount of time spent in each type and intensity of activity to achieve the guidelines for those participants in study 1. This suggests that people with psychosis expend more METs in walking than they do in moderate and vigorous PA in order to achieve the guidelines. It also clearly demonstrates that the amount of walking undertaken is much more than the amount of moderate or vigorous PA.

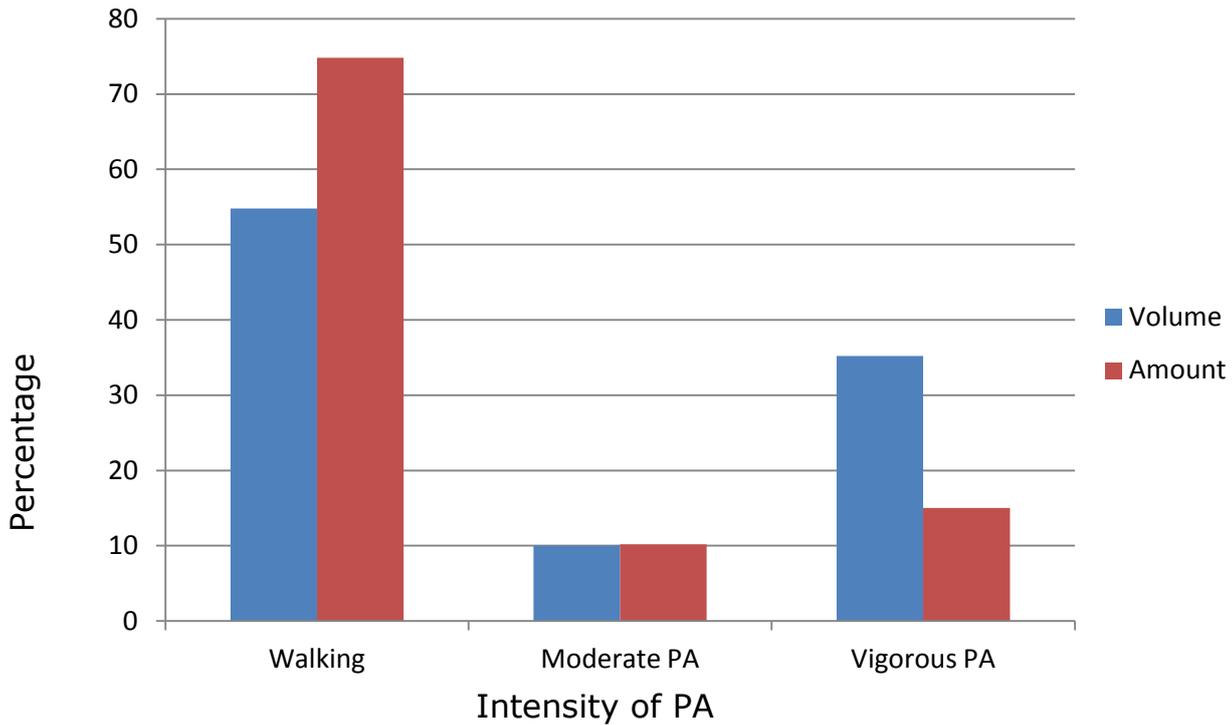


Figure 4.4.3a The volume and amount of PA undertaken to achieve the guidelines

Figure 4.4.3b shows the volume of PA in METS for the different intensities of PA. It clearly shows that the total volume of PA, volume of walking, moderate and vigorous PA are not normally distributed with a large number of outliers. This is also demonstrated in table 4.4.3c which outlines large standard deviations (SDs) for all intensities of PA. Craig et al (2003) states that large SDs are common when assessing PA and recommends that the median measures as well as mean are reported when using the IPAQ. The median data highlighted in table 4.4.3c suggests that the majority of people do no moderate or vigorous PA as the median score is 0.

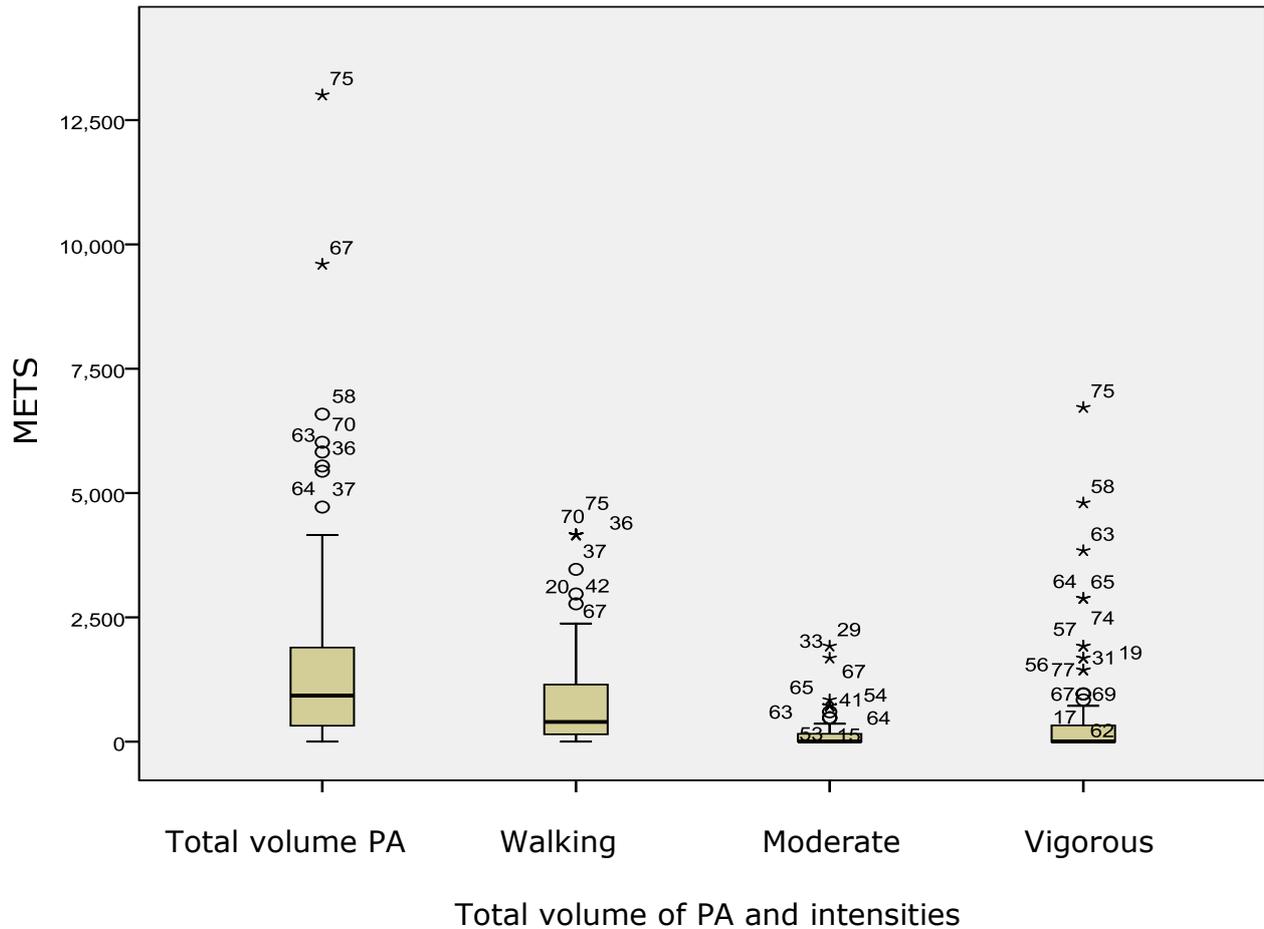


Figure 4.4.3b Box plot of the volume of PA (METS) by intensity

Table 4.4.3c Descriptive data of the volume of PA (METS) by total and intensity

Variables	Mean	Standard Deviation	Median	Range	Missing (n)
MET total	1514.63	1514.63	924.00	0-11718	3
Male	1821.84	2406.37	1179.78	0-13004	3
Female	1444.06	2005.48	714.00	0-9600	0
MET walking	863.47	863.47	396.00	0-4158	1
Male	983.30	1203.79	462.00	0-4158	1
Female	740.57	1045.22	297.00	0-4158	0
MET moderate	165.93	165.93	0.00	0-1920	2
Male	123.22	220.44	0.00	0-840	2
Female	209.74	438.46	0.00	0-1920	0
MET vigorous	486.67	486.67	0.00	0-6720	2
Male	638.18	1357.07	0.00	0- 6720	2
Female	331.28	879.57	0.00	0-4800	0

This data suggests that the PA data was not normally distributed, this was investigated in more detail in section 4.4.6.4.

4.4.4 Descriptive information for QoL

The descriptive data for QoL can be seen in table 4.4.4. Norms for the UK population can also be viewed in this table. This information was obtained from two sources: The norms for the 8 subscales were obtained from Jenkinson, et al (1999). The SF-36 was used in that study to calculate norms. These were used in this thesis as comparisons for the norms of SF-12 were not found for the UK population. However, scores between SF-12 and SF-36 are known to be highly correlated (Ware et al, 1996). The SF-12 UK norms for the summary scores of PH and MH have been reported by Gandek et al (1998). Therefore these are used for direct comparison.

Table 4.4.4 Descriptive data for QoL and UK norms

	N (study 1)	Study 1 Mean (SD)	UK norms Mean (SD)
Physical Functioning	79	45.9 (11.8)	87.99 (19.65)
Male	40	48.5 (10.4)	
Female	39	43.3 (12.8)	
Role Functioning	79	42.8 (11.4)	87.17 (22.01)
Male	40	43.4 (11.5)	
Female	39	42.2 (11.5)	
Bodily Pain	78	44.6 (14.5)	78.80 (23.01)
Male	40	46.9 (14.1)	
Female	39	42.2 (14.7)	
General Health	79	40.2 (12.1)	71.06 (20.43)
Male	40	41.1 (12.2)	
Female	39	39.3 (12.1)	
Vitality	79	43.6 (11.8)	58.04 (19.60)
Male	40	44.6 (11.5)	
Female	39	42.5 (12.5)	
Social Functioning	79	43.9 (12.2)	82.77 (23.24)
Male	40	45.0 (11.8)	
Female	39	42.6 (12.6)	
Role Emotional	79	40.5 (11.8)	85.75 (21.18)
Male	40	40.8 (11.4)	
Female	39	40.2 (12.4)	
Mental Health	79	43.9 (12.2)	71.92 (18.15)
Male	40	44.7 (11.2)	
Female	39	43.1 (12.4)	

	N (study 1)	Study 1 Mean (SD)	UK norms Mean (SD)
PH	78	44.9 (10.7)	50.9 (9.4)
Male	40	46.8 (10.2)	
Female	39	42.9 (10.4)	
MH	79	42.0 (12.1)	52.1 (8.7)
Male	40	42.1 (11.0)	
Female	39	41.9 (12.4)	

As can be observed, the scores are much lower for the population of people with psychosis than they are in the UK general population. This is consistent across all subscales and summary scores.

4.4.5 Descriptive information for BPNs and depression

Table 4.4.5 shows means and standard deviations for all of the QoL, BPNs and depression scores.

Table 4.4.5 Means and SDs for BPNs and depression

	Mean (SD)	N
Autonomy	4.5 (1.1)	78
Male	4.3 (1.3)	
Female	4.6 (1.0)	
Competence	4.2 (1.1)	78
Male	4.2 (1.1)	
Female	4.1 (1.1)	
Relatedness	5.0 (1.2)	78
Male	5.0 (1.2)	
Female	5.0 (1.1)	
Depression	17.2 (13.5)	78
Male	15.0 (12)	
Female	19.6 (14.6)	

On the BDI-II, scores were also calculated for severity categories, with 46% scoring in the normal range, 17% in the mild range, 18% in the moderate range and 20% in the severe range.

The descriptive information provided in tables 4.4.3c, 4.4.4 & 4.4.5 and figure 4.4.3a & 4.4.3b is reported prior to data screening. The data suggested that some of the variables might violate the assumption of normality which is required for most of the statistical tests. This is especially the case for the PA

data which has very large SDs. Further investigation of this data was undertaken.

4.4.6 Data screening

The data was screened for the distribution of scores, outliers and missing data.

4.4.6.1 Missing data

Missing data was limited as can be seen in tables 4.4.3c, 4.4.4 & 4.4.5. The data that was missing was checked to investigate if a pattern existed across variables or participants. This was not the case, therefore the missing values were replaced with a group mean. Tabachnick & Fidell (2001) recommend using this method as it is not as liberal as using prior knowledge i.e. a well-educated guess and it is not as conservative as inserting overall mean values. Therefore the group means were based upon a person's diagnosis as this was deemed the most important determining factor. The three missing values for the PA data were replaced with the mean PA score for that participant's diagnosis. This was a value of 1137.13 for the participant with a missing PA value with bipolar disorder and 1222.43 for those with schizophrenia. The same method was used for the missing values on the other variables to keep the treatment of missing variables consistent.

4.4.6.2 Distributions

Most statistical tests assume that the distribution of variables is normal, especially multivariate analysis such as MANOVA and multiple regressions. The data was tested for normality by investigating the skewness and kurtosis values, the Kolmogorov-smirnov and Shapiro-Wilk values, and also by inspecting a histogram with a normal distribution curve, a normal probability plot and a detrended normal Q-Q plot. The results for the normality tests of the continuous variables are in table 4.4.6.2.

Table 4.4.6.2 Distributions of continuous variable

Variable	Skewness	Kurtosis	Kolmogorov-Smirnov		Shapiro-Wilk	
			Stat	Sig	Stat	Sig
Age	0.020	-1.182	0.092	0.183	0.957	0.012
PH	-0.654	0.122	0.101	0.046	0.964	0.025
MH	-0.003	-0.742	0.062	.200	0.982	0.311
General Health	-0.217	-0.867	0.215	0.000	0.905	0.000
Physical Functioning	-0.876	-0.319	.244	0.000	0.823	0.000
Role Physical	-0.300	-0.824	0.137	0.001	0.923	0.000
Role Emotional	-0.0099	-0.935	0.186	0.000	0.909	0.000
Bodily Pain	-0.679	-1.032	.256	0.000	0.800	0.000
Vitality	-0.234	-0.536	.144	0.000	0.953	0.005
Mental Health	0.430	-0.404	0.195	0.000	0.915	0.000
Social Functioning	-0.639	-0.422	0.207	0.000	0.856	0.000
Autonomy	-0.135	-0.405	0.062	0.200	0.983	0.359
Competence	-0.092	-0.243	0.050	0.200	0.989	0.727
Relatedness	-0.043	-0.802	0.074	0.200	0.970	0.063
Depression	0.768	0.060	0.108	0.024	0.936	0.001
PA total MET	2.798	10.834	0.214	0.000	0.707	0.000
PA walking MET	1.883	2.797	.227	0.000	0.722	0.000
PA moderate MET	3.165	11.826	0.317	0.000	0.546	0.000
PA vigorous MET	3.399	13.254	0.348	0.000	0.846	0.000
PA total time	3.10	11.42	0.25	0.00	0.63	0.00
PA walking time	2.87	8.62	0.27	0.00	0.60	0.00
PA moderate time	3.17	11.83	0.32	0.00	0.55	0.00
PA vigorous time	3.40	13.25	0.35	0.00	0.35	0.00

If the distribution is perfectly normal, skewness and kurtosis value would be 0. For the distribution to be normal the Kolmogorov-Smirnov and Shapiro-Wilk significance value needs to have a significance value of more than 0.05. As table

4.4.6.2 shows the only variables that appear to be normally distributed from this data are the variables autonomy, competence, relatedness and MH. After inspecting the histogram, normal probability plot and the detrended normal Q-Q plot it was decided to treat age and PH as normally distributed as the distribution curve on these histograms were relatively normal and the scores around the normal distribution line were relatively straight.

All of the non-normally distributed variables were attempted to be transformed, see section 4.4.6.2 for a description of this.

4.4.6.3 Outliers

Univariate and multivariate outliers were inspected to investigate if this could account for the non-normally distributed data.

Mahalanobis distance was employed to search for multivariate outliers. The mahalanobis distance showed that there were no multivariate outliers. The distance for the variables used in this study was 15.954, which is under 24.32, the critical value of a chi-square based on 7 variables. These 7 variables include the two subscales of QoL (PH & MH), total volume of PA, depression, autonomy, competence and relatedness.

Boxplots were inspected to assess if univariate outliers existed on each of the scales and subscales. Numerous outliers were evident on all of the PA variables, one outlier was evident on PH, and there were no other outliers on the non-normally distributed variables.

Multivariate statistics are extremely sensitive to outliers therefore it is imperative that they are considered. Initially these outliers were verified as being entered correctly. According to Tabachnick & Fidell (2001) there are a number of strategies to reduce the influence of outliers. Outliers could be deleted, however as multivariate statistics are also sensitive to a small sample size this was decided against as a number of values would need to be deleted from the PA variables. In addition, the outliers were seen as accurate and representative of the population.

Different strategies were employed for treating the outliers for the PA variables and PH. As PH was normally distributed and only had one outlier, this case was changed to be only one raw score below the next most extreme case in the distribution. The score was changed from 12.30 to 19.92. Tabachnick & Fidell (2001) suggest that this method is attractive as often measurement of variables is arbitrary as is the case with QoL measures and the SF-12.

The outliers on the PA variables were kept because they are deemed representative of the population, therefore an attempt to transform these variables alongside the other non-normally distributed depression and QoL subscales was undertaken.

4.4.6.4 Transformation of variables

Transformations were attempted on all of the non-normally distributed variables.

Transformation of variables is not always recommended as interpretation of the variables can become difficult. Tabachnick & Fidell (2001) suggest that if the scale in which the variable is measured is meaningful, transformation can hinder interpretation. However, if the measurement of the scale is arbitrary, interpretation should not be any more difficult. METs are a representative measure of PA energy expenditure and could be described as meaningful. However, the interpretation required is of correlations and therefore this interpretation should not be hindered through transformation of the variable. The measure of depression, the BDI-II, is an arbitrary measure, as are the 8 subscales of the QoL measure.

Transformations can improve the analysis, reduce the influence of outliers and help the variables meet the assumptions of the statistical analysis (Tabachnick & Fidell, 2001). The normal distribution curves and histograms were inspected to decide which method of transformation was required.

Following numerous attempts to transform the variables using various methods, only the total volume of PA score and depression were able to be transformed into a normal distribution.

A logarithm was carried out to transform the total score of PA and a square root was undertaken for the depression data. After transformation both variables were normally distributed with no outliers, see table 4.4.6.4.

Table 4.4.6.4 Distributions of total volume of PA and depression after transformation.

	Mean	SD	Range	Skewness	Kurtosis	Kolmogorov-smirnov		Shapiro-Wilk	
						Stat	Sig	Stat	Sig
Total volume of PA	2.93	0.52	1.52 – 4.07	-0.274	-0.179	0.08	0.20	0.99	0.77
Depression	3.72	1.86	0-7.48	-0.264	-0.501	0.07	0.20	0.98	0.14

4.4.7 Differences between scores for different methods

Multivariate Analysis of Variances (MANOVAs) were undertaken to determine whether there were differences in the scores for the method of completion and different procedures of data collection. Only normally distributed variables were used in the MANOVAs.

A MANOVA was chosen over a number of ANOVAs as more than one dependent variable was to be measured. The outcome measures of total volume of PA, depression, PH, MH, autonomy, competence and relatedness were used as the DVs. The independent variable was completion, the two levels of which were; self-report and helped to complete. The DVs are to be considered together as it was important to know if participants were responding differently across all of the scales. In addition, using a MANOVA reduces the risk of producing a Type 1 error (Pallant, 2005). However, because MANOVA adjusts for an increase in Type 1 error, additional assumptions for sample size, normality and multicollinearity need to be met:

Sample size - The minimum requirement to undertake a MANOVA is for more participants in each cell than dependent variables. There were significantly more participants than this in the data set and therefore it was not imperative that all of the assumptions were met.

Normality - All of the dependent variables were normally distributed and therefore this assumption was met. There were no univariate or multivariate outliers in the sample and therefore this should not distort the analysis.

Multicollinearity - None of the DVs were highly correlated and therefore the assumption of non - multicollinearity was met (see section 4.4.10 for an overview of the correlations).

Differences between participants who completed the questionnaires alone or with help.

There was no significant difference between those who completed the questionnaires alone and those who completed them with help on the combined dependent variables: $F(7,67)=0.955$ $p=0.471$; Wilks' Lambda=0.909; partial eta squared=0.091. When the results for the dependent variables were considered separately, none of the variables reached statistical significance. Wilks' lambda was the chosen statistic as there are equal sample sizes in each cell and the assumptions were not violated.

These results show that there was no difference between those who completed the questionnaires themselves and those who were helped.

Differences between procedures of data collection

The independent variable was procedure, three levels of the IV were reported: procedure 1, procedure 2 and procedure 3. There was no significant difference between the place the scales were completed, on the dependent variables: $F(7,134)=0.887$ $p=0.574$; Pillai's Trace=.170; partial eta squared=0.085. When the results for the dependent variables were considered separately, none of the variables reached statistical significance. Pillai's Trace was the chosen statistic as there were unequal sized groups.

4.4.8 Associations of demographic variables, PA and QoL

A variety of tests were conducted to assess the associations between demographic variables and the main PA and QoL variables. These tests altered depending if the variables were continuous or categorical. Variables, such as

ethnicity were dichotomised. Sex is of course already dichotomised. Diagnosis was categorised as schizophrenia, bipolar disorder and other psychoses. Status was dichotomised into married or not married, employment was dichotomised into employed or not employed; accommodation was dichotomised into living alone or not living alone. Ethnicity was dichotomised into white or not white. Age and duration of illness were kept as a continuous measure. Tests of difference were carried out where there was one continuous and one nominal category such as sex and QoL variables. Correlations were carried out where there were two continuous measure such as age and PA variables. All the tests differed depending if the variables were parametric or non-parametric. Only the two summary scores of the SF-12 were normally distributed, so parametric tests were conducted when these variables were being tested for differences. Total volume of PA was transformed to be normal, but for the purpose of these tests the non transformed variable was used to maintain consistency with the other PA variables. See table 4.4.8 for the results of these tests.

Table 4.4.8 Tests of associations between demographic, PA and QoL variables.

	Type of test	Physical functioning	Role physical	Bodily pain	Mental health	Role emotional	Social functioning	Vitality	General health	PH	MH	Volume PA	Walking	Mod PA	Vig PA
Sex	Mann-Whitney	-1.91	-.28	-1.52	-.69	-.25	-.70	-.75	-.84			-1.13	-1.04	-.18	-1.20
	t-test									1.70	.080				
Diagnosis	Kruskall Wallis	4.99	.89	.95	.71	.10	2.68	1.55	.32			.87	.11	5.15	8.63*
	ANOVA									.89	1.65				
Ethnicity	Mann-Whitney	-1.27	-.56	-.42	-.16	-.07	-.54	-.54	-1.83			-2.05*	-1.59	-.69	-1.55
	t-test									.53	.32				
Employment	Mann-Whitney	-.50	-.17	-.13	-.66	-.73	-.18	-1.01	-.16			-1.73	-1.91	-.30	-1.51
	t-test									.81	-1.13				
Married	Mann-Whitney	-2.36*	-.68	-1.35	-.14	-.03	-.99	-.19	-.56			-2.78*	-1.75	-1.80	-1.42
	t-test									-1.77	.63				
Accommodation	Mann-Whitney	-.32	-.86	-.11	-.69	-.59	-1.73	-1.00	-.53			-1.62	-2.48*	-.63	-.82
	t-test									.83	-.58				
Medication	Mann-Whitney	-.70	-.49	-1.23	-.39	-.29	-1.13	-.08	-.81			-.48	-1.05	-.83	-.18
	t-test									-1.12	.58				
Duration of illness	Spearman's rank correlation	-.05	-.03	-.21	-.02	-.03	.04	.02	.11	-.10	.05	-.24*	.01	-.15	-.36**
Age	Spearman's rank correlation	-.24*	-.06	-.30**	-.185	.112	.26*	.09	-.07	-.36**	.22	-.27*	.04	-.22	-.55**

* <0.05 ** <0.01

Table 4.4.8 demonstrates that there were not many significant associations between demographic variables and the main QoL and PA variables. For instance, a series of Mann-Whitney U tests were carried out to investigate if there were significant differences between males and females across the different intensities of PA. There were no significant differences between males and females for total volume of PA or any of the different intensities:

Total volume of PA ($z = -1.13$, $p = 0.26$); Walking ($z = -1.04$, $p = 0.30$);
Moderate ($z = -0.18$, $p = 0.86$); Vigorous ($z = -1.20$, $p = 0.23$).

Furthermore there were no significant differences of sex on any of the QoL variables.

A significant difference was found for ethnicity and volume of PA ($z = 2.05$, $p = 0.04$). Upon investigation of the mean ranks it was found that those categorised as whites carried out significantly more PA (mean rank = 41.63) than those categorised as non-whites (mean rank 26.55). However, only a small effect size of $r = 0.23$ was calculated.

The findings demonstrated that those that were married scored significantly lower on physical functioning (mean rank = 23.78) than those that were not married (mean rank = 42.09) ($z = -2.36$, $p = 0.02$, effect size, $r = 0.27$). In addition, those that were married scored significantly lower on the volume of PA (mean rank = 20.00) than those who were not married (mean rank = 42.76) ($z = -2.78$, $p = 0.005$, effect size, $r = 0.31$).

A significant difference was found between diagnosis and vigorous PA ($\chi^2 = 8.63$, $p = 0.01$). Upon inspection of the mean ranks it was found that those with other psychoses scored higher (mean rank = 48.93) than bipolar disorder (mean rank = 34.38) and schizophrenia (mean rank = 38.12).

Walking was found to be significantly different for the accommodation type ($z = -2.48$, $p = 0.01$). Those who lived alone conducted significantly more walking (mean rank = 45.84) than those who did not live alone (mean rank = 33.16). However, the effect size was calculated to be small ($r = -0.28$).

The duration of the illness was found to be significantly, yet weakly associated with total volume of PA ($r = 0.24, p = 0.03$) and moderately significantly associated with vigorous PA ($r = -0.36, p = 0.001$).

Age was negatively significantly correlated to physical functioning ($r = -0.24, p = 0.04$) and PH ($r = -0.36, p < 0.01$) on the QoL variables. In addition age was negatively significantly related to total volume of PA ($r = -0.27, p = 0.02$). The strength of the relationship was small, however age was strongly significantly related to vigorous PA ($r = -0.55, p < 0.01$).

4.4.9 Differences between achieving PA guidelines and QoL

One-way between groups ANOVAs were conducted to explore the relationship between different levels of activity and the normally distributed summary scores of MH and PH. A series of Kruskal-Wallis Tests were conducted on all of the 8 non-normally distributed subscales of QoL.

Participants were categorised into three PA groups (Low, Medium & High PA). There was a statistically significant difference between the three levels of PA in PH [$F(2, 76) = 4.37, p = 0.02, \eta^2 = 0.10$] and physical functioning [$\chi^2(2,76) = 7.18, p = 0.03$]. The effect size as outlined by eta squared between the groups for PH was medium. According to Cohen (1988), 0.01 is classified as a small effect, 0.06 is classified as medium and 0.14 is high. A planned comparison was carried out to investigate if those who met the guidelines (medium and high PA) differed significantly from those who did not achieve the guidelines on PH. This was found to be significant [$F(1,76) = 8.55, p = 0.005$], and indicates that achieving the guidelines is associated with higher PH. Inspection of the means (see table 4.4.9) shows that the higher the category of PA the higher the PH. There were no other significant differences between any of the QoL subscales and PA levels.

Table 4.4.9a Descriptive statistics for PH for those achieving guidelines and not achieving guidelines

	PH Mean	PH SD	N	PH norm of the UK population Mean (SD)
Not achieving guidelines	40.74	10.57	28	50.9 (9.4)
Achieving guidelines (medium)	46.06	10.38	36	50.9 (9.4)
Achieving guidelines (high)	49.67	7.70	15	50.9 (9.4)

As can be seen in table 4.4.9, the mean for PH in the high PA category reaches the mean norm for the UK general population.

A further one-way ANOVA was conducted to establish if there was a difference on PH for people in three conditions: those who achieved the guidelines through walking 150 minutes a week; those who achieved the guidelines through a combination of PA; and those not achieving the guidelines. There was a significant difference at the $p < 0.01$ level in PH for the three different PA groups [$F(2, 76) = 4.58, p = 0.01, \eta^2 = 0.11$]. See table 4.4.9b for an overview of the means. A moderate effect size of 0.11 was calculated using eta squared. Post-hoc comparisons using the Tukey test indicated that the mean score for those meeting the guidelines through 150 minutes of walking ($M = 44.50, SD = 10.91$) was not significantly different from either those meeting the guidelines through a combination of PA ($M = 48.43, SD = 8.97$) or those not achieving the guidelines ($M = 40.74, SD = 10.57$). However, achieving the guidelines through a combination of PA was significantly different to not achieving the guidelines.

Table 4.4.9b Descriptive statistics for PH for PA groups of achieving the guidelines by walking 150 minutes, achieving guidelines by a combination of PA and not achieving guidelines

Guidelines	PH Mean	PH Standard Deviation	N
Not achieving guidelines	40.74	10.57	28
Walking 150 minutes	44.50	10.91	17
Combination of PA	48.43	8.97	34

A one way ANCOVA was conducted to compare PH at the different categories of PA whilst controlling for age. After adjusting for age, there was no significant difference between the different categories of PA [$F(2,71) = 2.69$ $p = 0.08$, *partial eta squared* = .07]. However, this was only just non-significant and maintained a medium effect size. The relationship between age and PH was moderate with a partial eta squared of 0.10. The mean ages for the different categories of PA in table 4.4.9c show that the mean age was lower in the high category of PA. Post-hoc comparisons using Tukey test indicated that mean age was significantly lower in the high PA group ($M = 34.79$ $SD = 12.92$) than in medium ($M = 43.91$, $SD = 13.5$) or low levels of PA ($M = 46.23$, $SD = 12.87$). There was no significant difference in age between medium and low intensity groups.

Table 4.4.9c Age and category of PA

Guidelines	Age Mean	Age SD	N
Not achieving guidelines (low)	46.23	12.87	26
Achieving guidelines (medium)	43.91	13.5	35
Achieving guidelines (high)	34.79	12.92	14

4.4.10 Correlations

The relationship between PA variables (total volume of PA, total amount of PA, volume, amount and frequency of walking, moderate intensity and vigorous intensity), QoL variables (PH, MH, general health, physical functioning, role physical, role emotional, bodily pain, vitality, mental health and social functioning), BPN variables (autonomy, competence and relatedness) and depression were investigated using Spearman's rank order correlation. Spearman's rank was used because of the amount of non-normally distributed variables. For the purposes of these correlations the non-transformed total volume of PA and depression were used and included in the non-parametric correlations to keep it consistent with the other PA variables. See table 4.4.10 for an overview of the correlations.

As multiple correlations were undertaken, the use of a more stringent alpha level by Bonferroni's adjustment was considered. Some statisticians argue that the more correlations or outcomes assessed, the greater chance of making a type 1 error (Bland & Altman, 1995). Implementing Bonferroni's adjusted alpha makes it less likely that this will happen. However, it was decided not to use a Bonferroni adjustment as this assumes that all factors tested contribute to an overall null hypothesis (Perneger, 1998). This was not the aim of the current study which was to independently examine each theoretically-plausible factor in its own right (Cerin et al, 2009). In addition, decreasing the risk of type 1 errors increases the risk of type II errors (Perneger, 1998).

Table 4.4.10 Correlation table of PA, QoL, SDT and depression variables

	Total volume PA (METs)	Volume walking (METs)	Volume moderate (METs)	Volume vigorous (METs)	Total amount PA	Amount of walking	Amount of moderate PA	Amount of vigorous PA	Frequency walking	Frequency moderate PA	Frequency vigorous PA
General Health	.14	.03	.14	.14	.11	.03	.14	.14	.13	.12	.16
Physical Functioning	.42**	.19	.31**	.37**	.39**	.19	.31**	.37**	.15	.31**	.39**
Role Physical	.27*	.27*	.11	.10	.29**	.27*	.11	.10	.29**	.16	.13
Role Emotional	.09	.05	.12	.03	.08	.04	.12	.03	.01	.15	.05
Bodily Pain	.16	.15	.14	.17	.16	.14	.14	.17	-.02	.14	.18
Vitality	.09	.11	.19	.03	.10	.11	.19	.03	.04	.18	.01
Mental Health	.07	-.04	.12	.19	.03	-.04	.12	.19	.05	.11	.16
Social Functioning	.32**	.37**	.10	-.08	.36**	.37**	.10	-.08	.39**	.06	-.09
PH	.38**	.22	.24*	.32**	.35**	.22	.24*	.32**	.19	.25*	.34**
MH	.02	.05	.09	-.07	.03	.05	.09	-.07	.04	.09	-.08
Autonomy	.12	.02	.23*	.10	.11	.01	.23*	.10	.02	.25*	.11
Competence	.12	-.03	-.00	.06	.07	-.14	-.00	.17	.05	.05	.19
Relatedness	.15	.05	.09	.06	.13	.05	.09	.06	.02	.12	.07
Depression	-.04	-.01	-.08	-.09	.04	.06	-.08	-.09	-.08	-.18	-.13

*significant at <0.05

** significant at <0.01

Table 4.4.10 shows that total volume of PA (energy expended METS) was significantly moderately and positively related to PH ($r = 0.38, p = 0.001$) and the SF-12 subscales of physical functioning ($r = 0.42, p = <0.001$), social functioning ($r = 0.32, p = .005$), and a significant, but small positive correlation for role physical ($r = 0.27, p = 0.02$). Total amount of PA was significantly moderately related to physical functioning ($r = 0.37, p <0.01$), social functioning ($r = 0.36, p = 0.001$), and role physical ($r = 0.29, p = 0.01$). However volume or amount of PA was not related to MH, other subscales of QoL, Depression, Autonomy, Competence and Relatedness.

Vigorous intensity PA was significantly moderately related to PH ($r = 0.32, p = 0.004$) and the SF-12 sub-scale of physical functioning ($r = 0.37, p = 0.01$). Moderate intensity PA was found to be significantly associated with PH ($r = 0.24, p = 0.03$) and the SF-12 subscale of physical functioning ($r = 0.31, p = 0.005$). Walking was found to be moderately significantly related to the SF-12 subscale of Social Functioning ($r = 0.37, p = 0.001$) and a small but significant correlation was found for physical role ($r = 0.27, p = 0.02$). The frequency of walking was moderately positively associated with social functioning ($r = 0.39, p <0.01$).

The hypothesised mediating factors between PA and QoL - BDI depression scores and the Autonomy, Competence and Relatedness factors of the Basic Psychological Needs in General Scale – were not significantly related to PH.

The only significant correlation between any of the PA variables and any the BPNs was autonomy and the amount ($r = .23, p = 0.045$) and frequency ($r = 0.25, p = 0.03$) of moderate intensity PA. However, these relationships were weak.

The intention was to carry out multiple regressions to investigate the hypothesised mediating factors; however these were not calculated because there was not a strong significant relationship between PA and any of the BPNs or depression variables.

Demographic variables and relationship of PA and QoL variables.

To establish if any of the demographic variables acted as a confounder for any of the relationships between PA and QoL, partial correlations were undertaken. A Spearman's rank partial correlation was used to calculate the correlations between the demographic variables and the PA and QoL variables which were found to be significantly correlated. Correlations were only conducted on variables in which there was a significant finding on both a QoL variable and a PA variable. This was only the case for status and age, see table 4.4.8.

A partial correlation was conducted to control for status in the relationship between physical functioning and total volume of PA. There was a moderate and significant correlation between physical functioning and total volume of PA after controlling for status ($r = .37, p = .001$). Upon inspection of the zero order correlation ($r = 0.42$) it can be stated that status had little effect on the strength of the correlation.

Age was controlled for in partial correlations between physical functioning, total volume of PA and vigorous PA. In addition the relationships between PH, total volume of PA and vigorous PA were also calculated whilst controlling for age.

There was a moderate significant partial correlation between total volume of PA and PH, whilst controlling for age ($r = 0.31, p = 0.007$). An inspection of the zero order correlation ($r = 0.33$) suggested that controlling for age had very little effect on the strength of the relationship between these two variables.

There was a small non significant partial correlation between total volume of vigorous PA and PH whilst controlling for age ($r = 0.16, p = 0.03$). An inspection of the zero order correlation ($r = 0.32$) suggested that controlling for age had an effect on the strength of the relationship between these two variables.

Similar results were evident when controlling for age between physical functioning and total volume of PA and vigorous PA. A moderate significant partial correlation between total volume of PA and physical functioning ($r = 0.38; p = 0.001$) was found. The zero order correlation ($r = 0.42$) demonstrates

that controlling for age had very little effect on the strength of the relationship, between these variables.

Physical functioning and volume of vigorous PA whilst controlling for age found a small but significant positive correlation ($r = 0.29$, $p = 0.01$) with a zero order correlation $r = 0.37$. This demonstrates that age had very little effect on the strength of this association.

Although age appears to explain the relationship between vigorous PA and QoL, it did not explain the relationship between walking and any QoL variables, or moderate PA and any QoL variables. In addition, neither the volume nor amount of PA undertaken was related to age and therefore it was not perceived to affect the relationship between amount of PA and any QoL variables. The main finding was that age only has an impact on the amount of vigorous PA undertaken and older people have lower PH and physical functioning.

4.5 Discussion of study one

Study one set out to establish the amount of PA in people with psychosis in relation to the current PA guidelines. In addition, various relationships between PA and QoL were investigated.

4.5.1 Amount of PA

It was found that 65% of the participants (70% of males & 59% of females) were meeting the recommended levels of 150 minutes of moderate intensity PA compared to 39% for men and 29% for women in the HSE survey (2008). However, the IPAQ questionnaire was not used in the HSE. A slightly older Eurobarometer survey (2002) assessing PA levels in the UK, utilising the IPAQ found results more consistent with the current study, reporting that 66% of males and 59% of females met the guidelines, and overall 63% met the recommendations (Sjöström et al, 2006).

In the current study, of the 65% meeting the guidelines, walking accounted for 75% of the total time spent undertaking PA. This shows walking to be by far the most frequent form of PA for this group. In addition, 48% were found to undertake 150 minutes of walking per week, again more than the

Eurobarometer survey which found that 34% of the UK population walked 150 minutes a week. (Sjöström et al, 2006). These findings were similar to PA surveys carried out in people with psychosis in Australia (McLeod et al 2009), USA (Daumit et al, 2005) and Scotland (McCreadie, 2003). All of these studies compared PA levels in people with psychosis with surveys from their national population and found similar levels of PA to the general population. Equally, it was found that people with psychosis were achieving guidelines by undertaking much more walking than the general population (McLeod et al, 2009). This could be explained by the increased use of walking as a means of transport in this population (Soundy et al, 2007a). The current study is the only survey in the UK known to use a questionnaire which is validated for use in this population, and is the only one to the author's knowledge that has investigated PA levels in comparison to the guidelines in people with psychosis in England. These findings suggest that it is possible for people with psychosis to achieve recommended PA guidelines, however it does not clarify how meeting these guidelines is associated with QoL in people with psychosis. This was investigated further in the current study and will be discussed in the next section.

Although it was found that 65% of this population met the physical activity guidelines, it is important to outline that physical activity self-report measures often result in over-reporting of physical activity (Welk, 2002). Although the validity of the IPAQ in a population of people with psychosis has previously been found to have comparable validity to the general population (Faulkner et al, 2006), the criterion validity was only found to be 0.37 as compared to accelerometer data. Data gleaned from the HSE (2008), stated that only 6% of men and 4% of women from the UK general population achieved PA guidelines as assessed by accelerometers, whereas 39% of men and 29% of women were found to meet the guidelines based upon a self-report measure from the same study. Accelerometers may under-report PA as they are unable to record a number of activities such as upper-body movement and swimming and rely on people remembering to wear them (Welk, 2002). However, based upon previous findings that there are far fewer people meeting the guidelines when accelerometers are implemented than self-report it is suggested that it is unlikely that 65% of the population in the current study actually achieved the PA

guidelines of 150 minutes a week. A further consideration is that a large percentage of the PA reported was walking and walking is the most difficult type of PA to estimate (Soundy et al, 2007b). Therefore, the figure of 65% of people meeting the guidelines should be viewed as the absolute optimum amount of PA, with the accurate figure likely to be much lower.

4.5.2 PA and PH

PH was found to be significantly higher in those that did meet the PA guidelines in comparison to those who did not. This is consistent with cross-sectional research assessing PA and QoL in the general population which has found that PA guidelines need to be achieved for a significant association with PH to be reported (Vuillemin et al, 2005). This is an important consideration as PH was lower than UK norms in those not meeting guidelines. However, PH levels were very similar to the norms in those which were categorised as highly active. Achieving a medium amount of PA is seen as the minimum an adult should be achieving, and it is reported that high levels have been found to be associated with better physical health outcomes (O'Donovan et al, 2010). To some extent this was reinforced in the current study as it was found that people who achieved the guidelines scored significantly higher on PH than those who did not, but upon inspection of the means it was clear that the higher the category of PA the higher the PH. These results should be considered tentatively as after controlling for age the difference of PH scores between achieving the guidelines or not achieving the guidelines became non-significant. However, this was only just non-significant and the effect size between PA and PH was still moderate. It was not surprising that age had an impact upon PA and PH as the mean age for those in the high category was significantly lower than those in the medium and low category. This corresponds to data from the general UK population which has found that the amount of PA undertaken reduces with age (HSE, 2008). This has important implications for the recommendations of PA in this population which will be discussed further in this section.

Further investigation into the relationship between PA and PH found some interesting results with respect to the intensity of PA. No relationship was found between walking and PH. However, there was a positive relationship between

moderate PA and PH and vigorous PA and PH. Most cross-sectional research assessing PA and QoL in the general population has found that PA needs to be at least moderate intensity (Blacklock et al, 2007), if not vigorous intensity (Vuillemin et al, 2005; Cerin et al, 2009), to be related to any of the subscales or summary scores of QoL. However, there is variation in which subscales and summary scores of QoL are associated with intensity of PA in these studies.

Age was found to account for the relationship between vigorous PA and PH, but not moderate PA and PH or total PA and PH. This suggests that the amount of vigorous PA is reduced and PH is perceived to be poorer as age increases. This is an important issue with respect to the PA guidelines and QoL in this population. The PA guidelines suggest that moderate intensity is sufficient but caveat this by stating that vigorous intensity PA will provide additional benefits (DH, 2011). As this study was cross-sectional, causality cannot be established; for example, it cannot be established if age prevents people from being active and this contributes to a decrease in PH or if lower PH and less vigorous PA occur in older people for other reasons. Therefore age needs to be considered when promoting PA in this population.

Although this study did find evidence of a relationship between PA and PH, it should be noted that the significant correlations were relatively small. However it is worth pointing out that a study by Vancampfort et al, (2011) found similar strength correlations of PA and PH which were not adjusted for age ($r = 0.48$, $p = 0.001$) compared to the current study which was adjusted for age ($r = 0.38$, $p = 0.001$). In addition, these correlations are stronger than correlations of PA and QoL in the general population after adjusting for demographic variables (Blacklock et al, 2007). However, the current study demonstrated that only 10% of the variance was shared between PA and PH after controlling for age. This illustrates an important point - there will be many factors that contribute to the PH of individuals. This study suggests that PA may be one such factor although a correlation does not provide evidence of a causal link. Evidence that PA *leads to* improvements in QoL would come from controlled outcome studies investigating the benefits of PA for individuals.

4.5.3 Walking and social functioning

Although walking was not related to either of the summary scores of PH or MH, it was found to be the only intensity of PA to be significantly related to social functioning. Amount and volume of PA were also related to social functioning which is perhaps not surprising as 75% of the total time, and 65% of the volume consisted of walking. Some research from the general population has found that PA improves social functioning irrespective of the level of PA intensity (Wendel-Vos et al, 2004), however, other research has found that only moderate levels of PA are associated with social functioning (Blacklock et al, 2007). Interestingly, walking was also related to physical role (the questions pertaining to this on the SF-12 ask if participants feel they have accomplished less than they would have liked or were limited in the kind of daily activities and work as a result of their physical health). It is suggested that as walking may often be used for transport (Soundy et al, 2007a) people with psychosis have to walk to get to places which helps to fulfil their roles and satisfy their life, including visiting friends and family, i.e. it is a means to an important ends. The more walking they do the greater the physical role, the more they feel they are accomplishing and the less limited they feel. Equally walking is something which requires going out into society and engaging with others on some level. Re-integration into society is an important aspect of QoL and recovery in people with psychosis and this concept is explored more thoroughly in the qualitative findings of this thesis (see chapters five and six).

4.5.4 PA and MH

No relationship or differences were found between any PA variables and the summary score of MH. Riise et al (2003) found similar results in that the level of PA was positively correlated with scores on the PH and to a lesser degree with the MH. Wendel-Vos (2004) also reported significant cross-sectional positive trends for a correlation between PA and PH but not MH for both men and women. However, they also found that over a five year period an increase in PA was associated with an improvement in MH, rather than PH. An explanation for the difference between MH and PH over time could be that a cross-sectional analyses of PA served as a proxy for, for example, a generally healthy lifestyle or health status, resulting in falsely attributing associations to PA (Wendel-Vos et

al, 2004). However, this appears unlikely to be the main explanation as experimental studies do report PA being related to both an improvement in MH and PH. Acil et al (2008) found that after a 10-week PA intervention, participants with schizophrenia had significantly improved QoL, on both PH and MH domains. However, there is a considerable body of evidence which has found that there is a relationship with PH but not MH in this population (Poulin et al, 2005; Faulkner et al, 2007; Strassnig et al, 2003). Faulkner et al (2007b) suggests that this finding might be as a result of a floor effect operating as individuals with psychosis consistently self-report lower scores on the MH domain in comparison to the PH domain (Strassnig et al, 2003). In addition, the finding that there is a relationship with PH but not MH is consistent with some of the research carried out in the general population (Bize et al, 2007). Another explanation could be that self-reported PA and PH may have conceptual overlap inflating the actual relationship between these constructs (Bize et al, 2007). However the SF-12 has been consistently used to assess the relationship between PA and QoL in a variety of populations, including in those with psychosis. A further possibility is that only certain types of PA may be related to MH. Cerin et al., (2009) found that only PA undertaken for the purpose of leisure, not transport or household PA, is significantly associated with MH but this was not assessed in the current study. Further explanations for the relationship between PA and QoL will be discussed in synthesis with the findings from the qualitative studies.

PA should be seen in the wider context of recovery and its role in achieving a fulfilling life. Individual differences will inevitably apply, so that although a certain level of PA may enhance PH, the impact on MH is likely to depend on and be much greater if the PA is meaningful, enjoyable, associated with control and factors such as achievement and social contact. Also, there will be many factors influencing the MH of people with psychosis, especially given the well established problems associated with psychosis outlined in chapter one. This is explored further in chapters five and seven.

4.5.5 Mediators

It was proposed that depression and the BPNs of autonomy, competence and relatedness would mediate the relationship between PA and QoL, and therefore

would be related to PA. However, it was found that the only significant association between any PA variable and any of these proposed mediators was amount and frequency of moderate intensity PA and autonomy. This is interesting considering walking was undertaken more frequently yet was not related to autonomy. It is suggested that moderate intensity PA is associated with autonomy because this is perceived to be something which participants choose to undertake, whereas walking is perceived as something which they have no choice to do. It could be that the more often a person undertakes moderate PA in the week, the more an individual feels they have control over their situation because they are choosing to undertake an activity which is perceived to be a positive and meaningful behaviour for their physical health (Shiner et al, 2008 Carless & Douglas, 2008). The role of autonomy and intensity of PA is considered further in the synthesis of findings in chapter seven. Chapter five enlightens some of this discussion due to the phenomenological nature of study two.

As study one investigated the group as a whole it was unable to explore the role of PA for the individual. It also means that there are numerous questions which are unable to be explored with respects to type and intensity of PA, the role of autonomy and how these impact upon physical, mental and social functioning. In addition as there was only one significant but small association between PA and one of the proposed mediators, the study provided limited insight into why there is a relationship between PA and QoL. The qualitative studies in chapters five and six explore this relationship in more depth and these findings will be combined with the results of this study in the synthesis chapter. As a group survey was conducted in study one, individual experiences of PA and QoL were not revealed. Exploring these experiences will provide a greater depth to this discussion.

There are a number of further limitations of this study, which will be considered in the discussion chapter (section 7.5), along with implications of the findings and further research.

4.6 Summary

This study found that the percentage of people who meet the PA guidelines is similar to the general population, as assessed by a self-report measure. However, walking was much more prevalent in this population than the general population who are more likely to meet the guidelines through more vigorous forms of PA. This appears to be important when considering the relationship between PA and QoL. Different intensities of PA appear to have varying effects on QoL. For PA to be beneficial to PH, the intensity may need to be moderate and walking appears to be of insufficient intensity. However, the lower intensity activity of walking was associated with improved social functioning. There was no evidence from this survey that PA was associated with MH and it is suggested where PA does have a positive impact on MH for individuals it is likely to be because it is a meaningful activity for the individual and associated with various benefits. However, this study did not provide evidence for the proposed mediators to explain the relationships and there are numerous questions remaining to be explored. Various factors will contribute to the QoL of people with psychosis so perhaps one can only expect relatively small effects to be demonstrated in cross sectional designs. These issues will be revisited in the synthesis of this thesis after the two qualitative studies have been discussed.

Chapter 5

Study 2: The Lived Experiences of PA in People with Psychosis

'mens sana in corpore sano' a sound mind in sound body

This chapter will detail the methods and results of study two. Study two is a qualitative, phenomenological study conducted with individuals with psychosis. This chapter contains the methods, findings and discussion of the findings for study two.

In brief, the justification for this study is that there is a limited understanding of how the lived experiences of PA may be beneficial for the QoL of people with psychosis. Qualitative research has investigated PA in people with psychosis, but very few studies have also explored QoL. Furthermore, there are no known studies that have used a hermeneutic phenomenological approach to exploring the lived experiences of PA in people with psychosis.

5.1. Aims

1) To explore the lived experience of PA and QoL in people with psychosis.

5.2 Method

5.2.1 Design

As outlined in section 3.5.2, van Manen's hermeneutic phenomenological approach was deemed to be the most appropriate methodology in the design and analysis of study two. van Manen (1990) proposes that the phenomenological method should not be prescriptive but should be heuristic. However, he does outline six research activities which could be used to guide the research process. These six activities are recommended to be woven together, rather than treated in isolation:

- 1) Turning to a phenomenon which seriously interests us and commits us to the world.

In this study turning to the phenomenon can be seen from the literature review in chapter two.

- 2) Investigating experience as we live it, rather than as we conceptualise it.

Interviews were carried out in this study to investigate the experience. More detailed information can be seen on these on section 5.2.2 of this chapter.

- 3) Reflecting on essential themes

A phenomenological thematic analysis was undertaken in this study. More detail is provided in section 5.2.6 of this chapter

- 4) The art of writing and rewriting

This is entwined within the thematic analysis and more information on how this was undertaken can be seen in section 5.2.6 of this chapter. The actual final writing of the themes can be seen in section 5.4.

- 5) Maintaining a strong and oriented psychological relation to the phenomenon.

Throughout the analysis, writing and reflection, a strong orientation to psychology remained to prevent getting side-tracked or to over-indulge in speculations or settle for preconceived opinions. Evidenced through the writing see section 5.4

- 6) Balancing the research context by considering the parts and the whole

This is the need to constantly refer to the overall phenomenon under study in considering the parts. It is required to verify that the themes and the discussion of the themes contribute to the whole of the phenomenon. This is also known as the hermeneutic circle.

A section can be seen on closing the circle in section 5.5. This outlines how the research considered how the parts contribute to the whole.

5.2.2 Interviews

Individual face-to-face interviews were conducted. Semi-structured interviews were the method of choice to investigate the lived experience of this phenomenon. Semi-structured interviews are a compromise between consistency and flexibility (Langdrige, 2007) and entail an interview schedule of

questions and prompts which should be flexibly employed. As a relatively inexperienced interviewer, this approach provided benefits such as ensuring that the interview fulfilled the aims of study and did not digress from the phenomenon under question. However, the quality of the data would still depend upon my skill as an interviewer to obtain rich information. Therefore, a number of steps were taken to ensure quality data.

5.2.2.1 Developing rapport

Developing rapport is perceived to be essential in obtaining a thorough understanding of the lived experience. To aid with this a meeting was set up with the client before the interview took place. At this meeting information was provided on the study and what was expected of the participant and the interviewer. This was deemed important as the initial correspondence and dissemination of information on the study can impact upon the building of rapport (King & Horrocks, 2010). It was recognised that there is a requirement for a shared understanding on the purpose of the research and if this is not the same, this can harm rapport-building (Warren, 2002).

As identified in the literature review, some people with mental health problems can struggle to engage with other individuals (Borinstein, 1992) and may become anxious. It was felt that meeting individuals before the interview would assist in putting participants at ease.

During the interview caution was taken to listen to the participants' responses, reflect back content, be non-judgemental in any response and to use relaxed body language (King & Horrocks, 2010). These are all skills which I had previously developed undergoing counselling skills and motivational interviewing courses as well as undertaking an MSc module on interview skills.

The interview guide was formed based upon the review of the literature (see appendix 11) and also through engaging in preliminary discussions with service managers, professional leads and by attending existing PA groups for people with mental health problems. To verify the appropriateness of the interview guide it was taken to a research group for people with mental health problems who subsequently approved its content and structure. In addition, this was

reviewed by my supervisor (an experienced qualitative researcher) and also the ethics panel at both the university and the NHS. The interview guide was funnelled and suggested prompts were introduced for use if required. Questions were open ended and were not leading.

According to King & Horrocks (2010) three aspects of the physical environment are important: comfort, privacy and quiet. This was taken into consideration so participants were given the option of where the interview was conducted. However, this could not be their own house, partly as a safeguard for the researcher, but also to ensure the interview took place on neutral ground and in a private place to reduce the risk of interruption.

A dictaphone was used to record each interview, which could impact upon the participants willingness to engage and rapport establishment (Warren, 2002). However, the participants consented to this. Also, it was felt that recording the interview would add to the perceived significance of the interview, as to encourage participants to take the interview seriously.

5.2.3 Participants and recruitment process

Eight participants were deemed sufficient for the current study, as phenomenological studies are carried out with few and varied numbers of participants (Langdridge, 2007). In addition, upon completion of eight interviews it was perceived that data saturation had occurred. The sampling was purposive and snowball, as professionals were asked to identify participants and this led to the identification of other professionals who may know of other appropriate participants. The professionals were briefed beforehand about the study. The criteria the professionals were asked to use were as follows:

- Diagnosis of an illness falling under the psychosis umbrella
- Between the ages of 18-65
- Not in 'crisis' at the time of the interview
- Be willing and able to undertake an in-depth interview lasting about 60 minutes
- Perceived to be active.

Initially SUs were asked to participate if professionals perceived them to be active. If they showed interest, they were given a consent to researcher contact form (appendix 12). This form had the participant's name and number on, so I was able to contact them directly about participating. An initial meeting was organised and I asked them if they perceived themselves to be active as part of this conversation. A decision was taken not to assess if participants were deemed to be active or not using measures of PA. This was decided as there was no prior evidence found which suggested how much PA could be beneficial for the QoL of people with psychosis, and therefore it was unknown if the individual needed to be categorised as active (reaching the PA guidelines).

Participants were purposively selected as being active, to gain an insight into their PA experiences. Purposive sampling is used to ensure that rich information can be obtained for a specific area of investigation (Strauss & Corbin, 1998). Therefore active people were recruited rather than a selection of people who were both active and inactive to obtain an understanding of how PA may be beneficial for QoL. Rich information about PA may not be obtained from those who are not active. Furthermore, gaining an understanding of the experiences of PA from those who are active can provide an opportunity to learn from these experiences and transfer these to PA promotion in those who are inactive. Previous studies have purposively recruited active people with psychosis to make sense of their experiences (e.g. Carless & Douglas, 2008, Crone, 2007), however these studies did not use a phenomenological approach to explore such experiences.

See figure 5.2.3 for an overview of the recruitment consent and conduct of study two. An information sheet for this study can be seen in appendix 13 and the consent form in appendix 14.

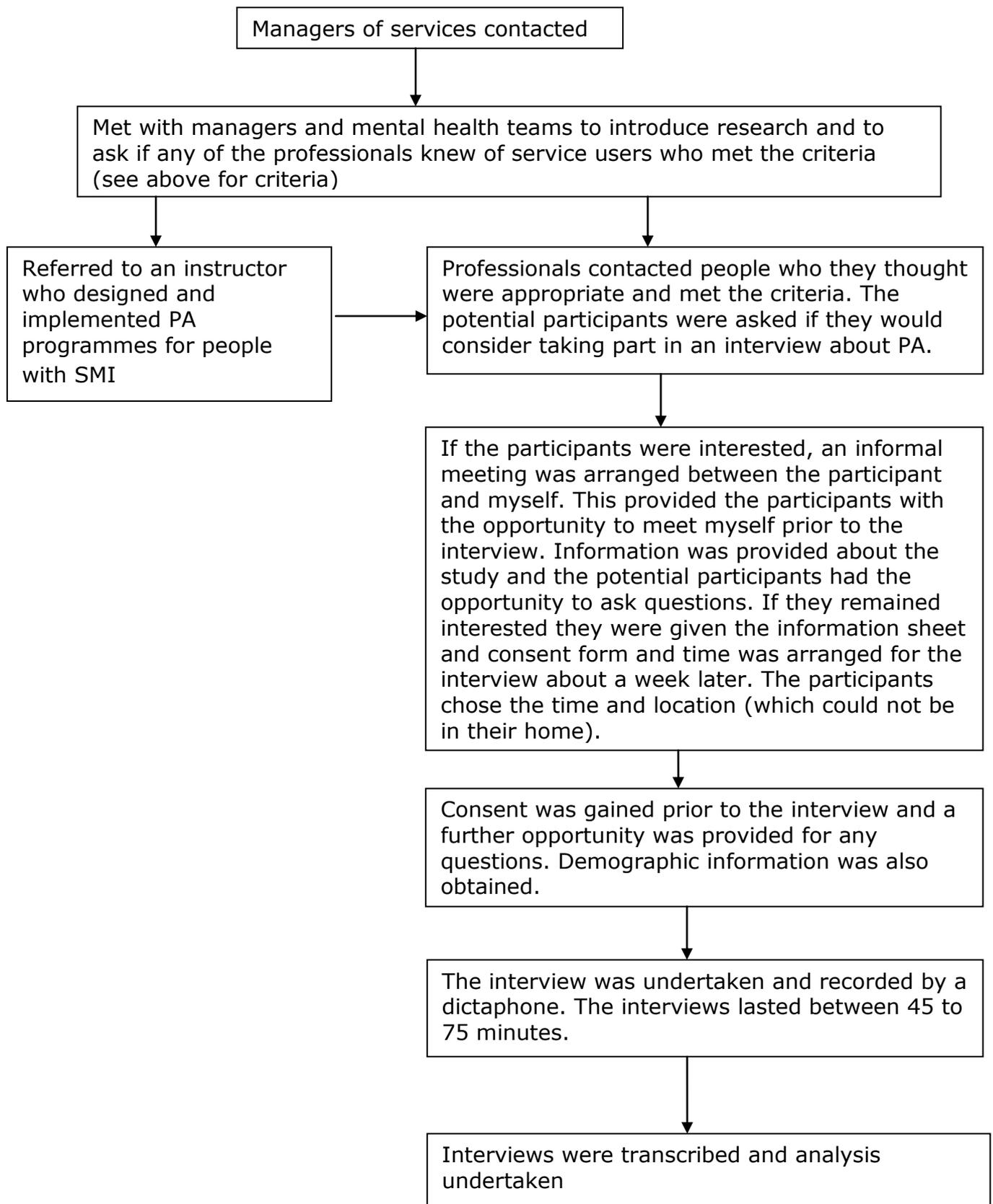


Figure 5.2.3 Procedure for recruitment and conduct of study two

5.2.4 Assessment of quality

The assessment of the quality in qualitative research is very controversial with varying views on how and if it should be undertaken (Maxwell, 2002). For instance qualitative research involves the researchers own interpretation of the participants' experiences and this is acknowledged throughout the research process. Meaning of these experiences is derived from reading and re-reading of the participants stories within the context of the researcher-participant relationship (Gadamer, 1997). Therefore, it is not perceived to be relevant to have a discussion of quantitative constructs such as validity and reliability, as these interpretations may differ for each individual. However, it is recognised that measures can be taken in order to ensure the trustworthiness of the study. Therefore, guidelines produced by Yardley (2000) were used to describe the trustworthiness of this study. These guidelines were perceived to be relevant as they were designed within the context of health psychology. The four broad themes outlined are:

1. Sensitivity to context
2. Commitment and rigour
3. Transparency and coherence
4. Impact and importance

Sensitivity to context. This was adhered to by thoroughly grounding the study in the underpinning theory and phenomenology which the methodology was founded upon. In addition, reflexivity was used throughout the process which aids in considering the socio-cultural context of the study and the relationship between the researcher and participant. A reflective diary was kept as well as being reflective in analysis, in order to be cognisant of my own pre-understandings and prejudice.

Commitment and rigour. This refers to the competence and commitment of the researcher, in which I feel I am undoubtedly committed and the areas in which I felt I may have lacked competence are expressed through reflexive discussion. The study is rigorous as both the data-collection and process and analysis are systematic and the work transcends superficial understandings. This is ensured through thoroughly grounding the analysis in phenomenology. It is argued that

to produce a good quality phenomenological study, the complexity, ambiguity and ambivalence of participants' experiences should be discussed (Dahlberg et al, 2008). This was highlighted throughout the analysis. In addition, I was aware of the language which I used, in order to adequately represent the participants' experiences. It was through these processes that a fusion of horizons was achieved. Furthermore, peer review was conducted by an independent researcher to verify the emerging themes were grounded in the data (see section 5.2.6 for further detail on this).

Transparency and coherence. The findings were presented in a manner which was designed to be convincing. To enhance this, a clear description of the data collection and analysis is provided. Evidence was used from the transcripts in support of the claims made throughout the analysis and reflexivity was discussed as to the researcher's influence on the research findings.

Impact and coherence. One of the principle reasons for this research being undertaken was to apply the findings and produce guidelines for people with mental health problems. The findings from this study could impact upon the beliefs and behaviours of people with mental health problems, professionals and policy makers.

5.2.5 Ethical considerations

Some of the ethical considerations are mentioned in the earlier discussion of the method and a lot of this discussion revolves around issues of confidentiality and anonymity. The first consideration was that pseudonyms were provided for the participants. This was done at the point of transcription. However, other concerns of potential identifiable data were also considered. For instance, names of places such as sport centres and football clubs were also altered to prevent anyone potentially being identified. Once the interview had been transcribed the interview recording was deleted to protect individuals if the dictaphone was lost or stolen.

Before the interview took place, participants were informed that confidentiality would have to be broken if they disclosed that they were at risk to themselves or others. Fortunately this instance did not occur, but if it had participants had

provided the contact details of their keyworker before the interview was conducted.

Procedures were also available in case the participant became upset. The participants were asked to discuss their emotions throughout the interview as this is an important part of their lived experience. It was acknowledged that participants could have become upset, especially if they were discussing previous PA experiences which they felt they were unable to undertake. King & Horrocks (2010) suggest if a participant becomes visibly upset, this should be acknowledged and the participant should be asked if they want to take a break or stop the interview. This was the view taken in the current study. In addition, the telephone numbers for support services available in the NHS Trust were also provided. However, none of the participants became upset during the interviews, despite sometimes describing distressing experiences.

Finally, the safety of both the researcher and the participant was considered. I underwent a Criminal Record Bureau (CRB) check, but this of course was not expected of the participant. Therefore the following safety protocol was undertaken:

- 1) The location of the interview was on neutral ground
- 2) The location of the interview, whilst in a private room was in a public place
- 3) I always had my mobile phone switched on and fully charged
- 4) I always informed my supervisor and husband of the time and place of the interview.

However, there was never an occasion where I felt that my safety was compromised.

5.2.6 Analysis

A discussion of van Manen's research activities of: 'reflecting on essential themes' and 'the art of writing and rewriting' is considered within this section.

van Manen (1990) proposed that a thematic analysis can be undertaken within a hermeneutic phenomenological approach. He stated that themes are not generalisations but are:

The stars that make up the universes of meaning we live through.
By the light of these themes we can navigate and explore such
universes (van Manen p.90)

van Manen (1990) outlined that to form the presentation of the written work, which represents the meaning of the phenomenon, requires a weaving in and out of the parts and the whole. From the beginning he suggests that a tentative structure should be outlined to guide the researcher. He uses the analogy of an artist to explain this concept, in that broad brushstrokes could be used to organise the overall sense of the approach just as a painter prepares a canvas as a broad outline for his work. These brushstrokes were seen as the themes which were constantly refined throughout the writing process. These themes were organised through a further method known as template analysis (TA). TA was devised by Nigel King (1998) and is a thematic analysis which consists of identifying a hierarchical structure with broad themes encompassing narrower themes. A priori themes, based upon previous knowledge, can be established on an initial template. This template is not fixed and is refined throughout the analysis, these initial themes outlined may cease to exist upon final construction of the template (King, 2004). The reason TA was considered suitable for this study was because an a priori template can be formed. This was perceived to be important upon consideration of the whole thesis and synthesis of the three studies. As a result of the literature review and the proposal that the three BPNs of autonomy, competence and relatedness could be related to PA and QoL, an a priori template was outlined which consisted of these themes. The BPNs were coded to aid identification and to prevent over representation of these themes. These a priori themes were used tentatively, in order to be cognisant with phenomenology. I did not want to force my preconceived ideas onto the data.

The first process after transcription was to read and re-read the interview transcripts, making notes in the margins. A sentence by sentence approach was conducted (van Manen, 1990). Thereby for each sentence or cluster of sentences I reflected about what it may reveal for the phenomenon. These notes were transformed into codes and the transcripts were checked for BPN codes. The codes identified were clustered together, attaching meaning. These clusters were

organised to form high order themes and lower order or sub-themes. After reading, re-reading, coding and forming themes for three interviews, a further template (template one) was drawn up (see appendix 15). This provided the opportunity to reflect between the parts and the whole and to look at the meaning units.

As can be seen from template one, the three initial themes of autonomy, competence and relatedness failed to emerge as high order themes, and although there is some reference to autonomy and competence in lower order themes, these were not perceived to be overarching in the phenomenon.

At this stage a quality check was conducted by an independent peer to check that the template was not overly distorted by my own preconceived assumptions. It was acknowledged that my interpretation may be different to this independent person who had her own pre-understanding of the phenomena. However, we agreed that I was representing the participants' experiences adequately and my interpretation was grounded in the data. The analysis then continued on the remaining five interviews and the template further refined (template two). This included adding themes but also condensing the amount of themes (see appendix 15).

Once all the interviews had been analysed and template two was formed, the writing part of the analysis began. The four existentials van Manen claimed pervade the lifeworlds of all human beings were used within the writing process. These four existentials of embodiment, relationality, spatiality and temporality (see section 5.4.1, 5.4.2, 5.4.3 & 5.4.4 of this chapter for more information on these) were used to guide the reflective writing process. According to van Manen (1990) writing phenomenologically is part of the research process and the language used represents the interpreted meaning. Therefore, thoughtful reflection was required through writing and rewriting, this required going back and forth through the different levels of questioning: going between the parts and the whole. This consisted of constantly taking a step back from the analysis and referring to the research question. For each theme I used imaginative variation and considered if each theme was essential to the overall experience of

PA and QoL in people with psychosis. Efforts were made throughout the process to form an adequate representation of participants' voices. It was through this process that a number of incidental themes were discarded and I began to start understanding this phenomenon. The final template (template three) was refined through this process (see appendix 15). In using the four existentials as a guide to writing it appeared that these existentials coincided with some of the higher order themes which had previously been found. Realising this provided what was perceived to be an organised and coherent overview of the experiences of PA and QoL in people with psychosis.

A qualitative data analysis software, NVivo, was used to aid the development of the analysis templates. It is argued that the use of NVivo is appropriate to use in phenomenological research as it enables the manipulation of data at the fine level (Langdrige, 2007). As TA was implemented as the method to organise the data this was seen as beneficial. In addition, I had used the software previously and felt that the use of this would aid my analysis. However, it is acknowledged that using NVivo may inhibit some of the research activities, outlined by van Manen such as 'reflecting on essential themes'. However, these activities were engaged with more thoroughly upon the writing and re-writing in which the template was further developed.

5.3 Participant Portraits

Each participant is introduced detailing their demographics, illness histories and characteristics of their interviews that are not evident in transcripts.

Tina

At the time of the interview Tina was a 34 year old female who had been diagnosed with bipolar disorder for over 10 years. She worked part-time and lived with her boyfriend. Tina moved to her current town to live with her boyfriend, moving away from the city where she was born and leaving her friends behind. She worked part-time as a secretary at a small business.

Tina's PA regime had fluctuated throughout her life, at the time of the interview she was on an individualised exercise programme, specifically designed by an exercise specialist for people with SMI. To undertake this programme Tina was referred by her Community Psychiatric Nurse (CPN). She had been on this programme and active for six months at the time of interview.

Tina's interview took place in a small room at the local sport centre which she attended. She stated that it took her a lot of courage to get to the sports centre, but she did not appear nervous. She was an extremely friendly person who appeared to be very outgoing and appreciative of the opportunity to discuss her positive experiences of PA.

Ann

Ann was living in an independent home for those with mental health problems where she had freedom and independence over her daily life and choices, but she did not work. Ann was 21 at the time and was diagnosed with schizophrenia. She chose to be active by attending the gym once a week, walking in the local area and dancing in her own room and in other rooms at the home. Ann talked about friends that she has, but she only talked about them when describing PA before she was diagnosed with psychosis.

Ann's interview took place in a private room at the home where she lived. It was a big room with a big open window looking out onto the grounds. Ann was

talkative and described aspects of both her illness and PA with clarity. At times Ann seemed to be distracted and was conscious of viewing people walking past the glass door. At the end of the interview she seemed keen to leave, but also talked about how pleased she was that she had been able to help me.

Paul

Paul was a 32 year old male who was diagnosed with schizophrenia 12 years previously. He lived with his girlfriend and undertook voluntary work. Out of all the participants, it is Paul who appeared to take PA the most seriously. He had recently returned to competitive football for his local team where he used to play before diagnosis. He had taken part in his first match three days before the interview and he was very eager to tell me about it.

The interview with Paul took place in a private room in the day centre which he attended. To begin with Paul was very keen to discuss his PA experiences but appeared to hold back when discussing his mental health problems; for instance, he talked about not naming the illness because of the perceived stigma. However, he openly discussed periods of time where he had been extremely unwell. He described his experiences with great fluidity and often returned to points in which he wanted to expand upon.

Tom

Tom's interview took place directly after Paul's, in the same room. He was also very talkative and was the most reflective participant. He would take time to think before he answered the questions and often it felt like he had previously pondered over the questions I asked. He talked of psychotherapy and potentially issues we covered around PA could have also been discussed with his psychotherapist.

Tom was 34 and diagnosed with schizophrenia, he undertook voluntary work which entailed working outdoors one day a week, building bridges and footpaths in local areas. It is something in which he placed great value. He had also just enrolled for a college course. At the time of the interview he attended sport

sessions organised by the local mental health trust and chose to walk for leisure. He did not discuss any other friends or a significant other.

Larry

Larry was 58 and diagnosed with bipolar disorder. He was married and had a daughter at university. Larry was very serious about his PA and viewed it as part of his treatment. Like Tina he was on an individualised exercise programme designed in collaboration with an exercise specialist for people with SMI.

The interview with Larry was the longest interview in terms of time and lasted for 75 minutes. Larry spoke quite slowly and on occasion struggled to find the words to express what he wanted to say, but he talked through what he meant until it became clear. Larry used analogies frequently to help describe his experiences.

Mike

Mike was 21 and had a diagnosis of Bipolar Disorder. He had a girlfriend but lived at home with his Mum. PA was something which Mike was not interested in prior to the onset of his illness, but is something which he placed great importance on now. He talked a lot about the research he had done into the benefits of PA and a healthy lifestyle. Mike did not work but alongside PA he enjoyed doing woodwork and this is something he would like to take further.

Mike talked openly and honestly during the interview. He sometimes talked like he was trying to work out for himself why he undertook PA and I found myself asking 'why do you think that is?' quite frequently. He touched on the surface of things which I wanted to know more about, but sometimes struggled to explain what he meant in more depth, however, he could usually describe what he was feeling when encouraged.

Diane

Diane was 54 and diagnosed with bipolar disorder. She undertook work as a carer and other voluntary care roles for neighbours. She was single and had two

sons. One of her sons had died and the other lived in Canada. She moved to Canada for a few years before returning to England. She talked of a brother that she saw frequently who she went on weekly walks with.

The interview with Diane took place in a private room at the offices of a local community mental health team. Diane was very pleasant and was very keen to want to help, however, she appeared to be worried that she would not be able to assist. Diane did need quite a lot of prompting, she gave succinct and interesting answers but I sometimes felt that they lacked depth and when prompted she was not much more forthcoming.

Howard

Howard was 31 and diagnosed with schizophrenia. He had recently started work as a street cleaner, something which he took great pride in. He was single and lived alone. A lot of the experiences Howard shared of PA were what he used to do when he described himself as being more poorly. Out of all the participants, Howard placed the least importance on PA. He did not have a structured PA routine at the time, but did cycle and walk for transport and his job entailed him walking for long periods of time. He had previously undertaken a lot of structured PA, but upon commencement of the job he found it more difficult to carry this out.

The interview with Howard took place in a small room in an outpatient clinic at a mental health hospital. He was friendly and open about his experiences, however on occasion the conversation was stilted. I think this was partly to do with Howard not perceiving PA to be of great importance in his life at that time, but he saw the walking that he had to do for work and transport as sufficient to keep him healthy. The work in which he undertook provided him with a meaningful occupation and he talked about this in detail.

5.4 Findings

As outlined in the method, four existentials of the lifeworld were used to guide the final analysis of the interviews and in doing this four essential themes emerged which were almost synonymous with the four existentials (see figures 5.4.1, 5.4.2, 5.4.3 & 5.4.4).

Although PA was described in positive terms by the participants, it was not always described as an easy behaviour to undertake and the first theme 'cocooned in a web of lethargy and tangled thoughts' explored this struggle to be active. Three other themes explored how and why PA was perceived as beneficial. The theme 'experiencing a snapshot of reality' delves into the actual act of PA and how this can aid in engaging the participants in the 'real world'. PA was seen as a tool in helping those with psychosis to feel and be seen as 'normal' by others in society. PA was also thought to aid the development of new identities. These issues were drawn together under the theme of 'being normal'. Finally, the theme 'dance as if no-one is watching' discusses how PA can be used as a distraction from the participant's perceived negative thoughts.

5.4.1 Cocooned in a web of lethargy and tangled thoughts

Embodiment

We experience the world through our body, therefore things appear through the body rather than simply through consciousness and the person is understood as body-subject (Merleau-Ponty, 1945). When completely engaged in a task such as reading, the body is in tune with the environment. The task holds conscious attention, it is only when a bodily sensation occurs, whether this is pain, sound, fatigue – something else appears to consciousness through our body that our body becomes objective. For instance, when we perceive ourselves as healthy, there is not much objective attention on the body and its everyday function. The body is taken for granted; however, when we are ill we focus on the body and the parts of it that do not appear to be functioning as 'normal'. For example, when we have a cold, we might focus on the pain in our head or in our muscles, we are aware that it might feel more difficult to breath and that we have to constantly blow our nose. In this sense the body as 'object' becomes

highlighted, the body is seen as an object somehow separate from self (Finlay, 2006). The body as object is not only apparent in physical ill health. Walton (1999) found that both medication for the treatment of mental health problems and the illness itself has bodily effects in participants. The alteration of thoughts, beliefs and convictions as a result of this medication meant that participants were profoundly confronted by the mind-body connection. This mind-body connection appeared to alter through participating in PA for the participants in this study. This is apparent throughout the four themes, but embodiment was perceived to be central to 'being cocooned in a web of lethargy and tangled thoughts'. This is now discussed.

'being cocooned in a web of lethargy and tangled thoughts'

This theme explored the battle which the participants described facing to be able to conduct PA. At the time of the interviews, PA was an activity which all participants chose to do, but often found difficult. However, some participants described periods in their illness where PA was something that they could not even contemplate undertaking. The differences in this struggle and how participants report overcoming these difficulties is discussed.

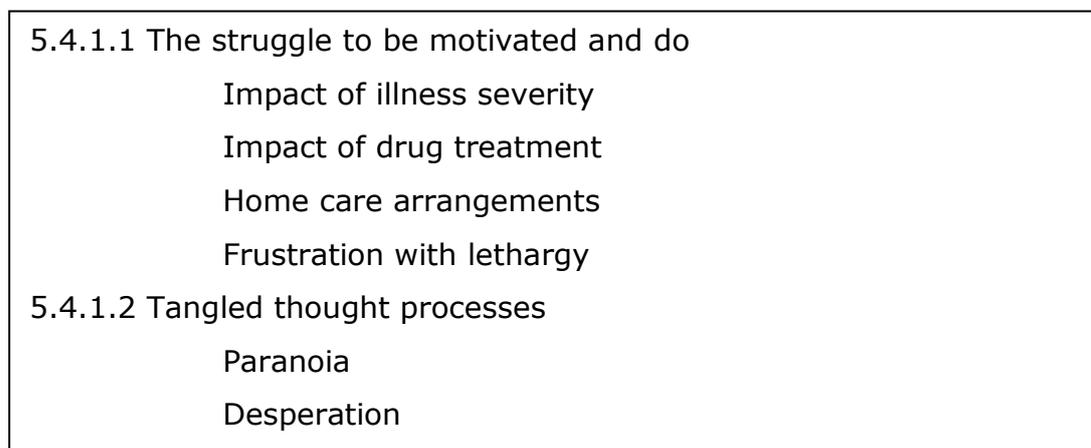


Figure 5.4.1 Template 1, thematic structure of being cocooned in a web of lethargy and tangled thoughts

5.4.1.1 The struggle to be motivated and do

Throughout the interviews different terms were used to describe what I perceived was a lack of motivation. Lethargy (Mike), inertia (Tom) and not being in 'that motivated way' (Ann) were all terms used which appeared to describe the struggle to be motivated to do anything and in particular PA. These terms described not only what prevented the participants from being active but often it was these same aspects which encouraged them to be active. The body and mind are embroiled in the struggle to be motivated, it is not something which is under the control of the mind. I borrowed Mike's term and used the word lethargy. Lethargy is having heavy muscles and a reluctant mind.

Impact of illness severity

The participants described their experiences of PA alongside their experiences of their illness and the perceived severity of it. When the illness was seen to be at its worst, PA could not be considered a remote possibility. Some of the participants described how when they perceived their illness to be at its most extreme or in 'the pit of dung' as described by Tom, the needs of the body were neglected. It was as though the mind, self and body were seen as separate entities, where the body does not feel that it belongs to them. At this point in the illness it was as though they were completely consumed in their mind, they were living and existing in their minds and their bodies were left desolate, rendering PA impossible:

I think I've touched base with all the points of the extremes of it [illness] to the point where I've just let my body, I've been so wrapped up in my mind that I let my, didn't clean my teeth for a year, didn't wash and didn't, just let everything go, I was skinny as a rake I were eating perhaps once a day, if that and then just enough to nourish me I was totally consumed in my mind (Tom).

For Tom he was unable to use and care for his body for a long period of time, during a phase of severe illness. PA was not a remote consideration. However, when participants were in what I perceive to be less extreme stages of their illness, symptoms of their illness can still eliminate the possibility of being active.

For some participants at this stage of their illness, there was a desire to use their body through PA, however, this wish was overhauled by perceived symptoms. It was as though any motivation to be active was taken from them. For instance, Ann described how her voices and subsequent depression prevented her from being active:

Well sometimes you can just let your voices get on at you, you know what I mean when you've got schizophrenia, psychosis... you feel that depressed that you just want to go to bed and just lay there (Ann).

The last thing that Ann could do was to be active, because her thoughts would not allow this to happen - it was as though her thoughts paralysed her body. In this quote it was not necessarily the voices that prevented Ann from being active, but the depression that ensued after an incessant onslaught from the voices. It was as though the voices wore her down and deprived her of any motivation to be active. Earlier in the interview she described the voices as 'being evil', which in itself could be detrimental to Ann's mood and subsequent desire to be active. Hearing relentless 'evil' things could deflate Ann further and overpower any desire to be active.

The participants described being prevented from being active by their illness at different perceived stages. When the illness was seen to be at its worst, there was no intention to be active because there was perceived to be no connection between mind and body. The body was deserted as the mind took control. When the participants perceived their illness to be in a better phase, there appeared to be recognition of the body and a desire to use their body in an active fashion.

Impact of drug treatment

The lethargy felt was often attributed to the drug treatment which participants had to take. Participants frequently felt that they were over-medicated and this not only thwarted PA but any form of movement:

I wasn't taking them sometimes [medication] because I didn't like them, 2mg of risperidone would have been enough but they put me on 6 and it knocked the crap out of me, so I just lay there on the bed (Mike).

The participants recognised the effects the medication had on their body, which allowed them to notice their body in existence. However, in these examples it is clear to see why in these circumstances PA was impossible to achieve. The medication which was meant for 'mental' illness, occupied the entire body which induced tiredness and lethargy. It seemed as though when the participants felt they were over-medicated or over-sedated, the medication was just like being enclosed in a straight-jacket. However, these descriptions of medications were discussed at a time in their treatment when they were not happy with their drug treatment. At the time of the interviews the participants were accepting of the medication which they were currently taking. They felt that they were taking enough medication to prevent their mind from ignoring their body, but not enough to sedate their mind and body:

Medication, getting the balance right that makes so much difference, they are from what I can gather far more what appears to be about sedation – keep them sedated, quiet and subdued and that will do, you know we are entitled to a life as well (Tom).

It was perceived that the sedation Tom described was like being anaesthetized. My experience of waking up from anaesthetic was one in which my body felt heavy and my mind did not want to engage in thought. I did not have any energy to move or think - it was as though my mind and body had been numbed; I had very limited sensation. This highlighted how the medication appeared to impact upon most of the participants. I knew I would soon come round from the anaesthetic and I had willingly been anaesthetized. It is understandable that Tom said 'we are entitled to a life as well', with a hint of anger in his voice. It appeared that he was angry as he felt that his and others with mental health problems autonomy was taken from them. It was clear from

both Tom and Mike's quotes that they would not choose to be sedated to the point in which they cannot move.

Home care arrangements

Some of the participants described how the motivation to undertake PA was quashed through the environment in which they inhabit. This included how participants felt they were treated by mental health professionals. A number of participants described occasions where they felt that the environment they inhabited was stifling. For some participants it was perceived that the people in charge of their care ignored their body and physical health:

Well most people don't look at the physical side they just look at the psychopathological side... and it's like you should see all the symptoms because the mind connects to all of the body...and if you've got a disease in your mind then it goes round your body (Ann).

Ann expanded on this point by outlining how the mental health homes in which she had lived encouraged people to do nothing. It is because of this that she believed that people lose their motivation to do anything. It appeared that in Ann's experience, doing nothing has become habit and once this habit is formed it is difficult to conquer:

I wanna get back into that motivated way... when I got my mental illness it didn't affect me physical side at first but then it's when you start going in rehabs for ages and that and they don't do owt with you... (Ann).

The lack of encouragement to be active meant it became meaningless to be active. Ann believed that it was the promotion of doing nothing that has led her and others to lack motivation. Ann also described occasions where she asked if she could be active and was told that she could not. This is an experience shared by others; Mike described how he was also prevented from undertaking PA on a mental health ward:

I were doing some press-ups actually in hospital and they said you can stop them, you're here to rest, so I stopped doing that and rested up and it just made me worse... just sinking back into chair... I was getting depressed, I went really lethargic and I didn't like it one bit (Mike).

The words 'sinking back into the chair' highlight how it seemed Mike was being swallowed into an abyss. He had been trying to prevent himself from losing control of an integrated mind-body. For Mike, what kept the mind feeling that it belonged to the body was undertaking PA as he had some control over his bodily movements. Once this control was removed his mind took over, and for Mike his body at this time had been swallowed by his mind.

Paul used the word 'stagnant' to describe occasions where he was still and not active. It seemed the environment which the participants described was stagnant. The word stagnant makes me think of murky, heavy, gloopy still water. The water is so dense and unmoving it is difficult to manoeuvre. Like a frog stuck unable to force his way through the murk and the gloop. The sheer effort involved in struggling through the water, meant that they lost the motivation to undertake any PA. This appeared to be borne out of the environment they inhabit but this was enmeshed with other aspects of their illness and the medications.

Frustration with lethargy

Although being motivated appeared to be virtually impossible during some particularly severe phases of the illness, there were occasions where the lethargy motivated people to engage in the world through PA. This heavy veil of lethargy encompassing their body frustrated some of the participants to the extent that it provided them with the impetus to be active:

It's a kind of balance, you become so like personally speaking, frustrated with the inertia that it's then I've got to take action... hopefully when you get the momentum going you keep it going (Tom).

Tom perceived that once an individual had taken action, the momentum needs to continue to keep an individual active and to prevent that inertia or lethargy from returning. PA was therefore not only seen as a way of combating some of the lethargy, but was also to prevent it from returning:

If I just sit down all day I just feel real lethargic, it actually feels like depression is coming back, but I don't give it time to come.... now I feel pretty active it's how I prefer feeling (Mike).

5.4.1.2 Tangled thought process

The struggle to undertake PA was often entwined with the perceived severity of the illness and how perceived symptoms affected some of the participants daily. The symptoms described related to the participant's thoughts and how these thoughts were perceived by the participants to not always be ordered and rational.

Paranoia

Various participants described how paranoia prevented them from being active. Paranoia was a term that the participants used themselves. It was a term they used to outline how upon reflection, they felt unnecessarily anxious about a given situation which prevented them from being active. When the participants described their paranoia it was always in relation to what they feared other people may do to them. For some participants they were fearful about going outside for fear of either physical or verbal attack. Often participants stated that they were paranoid about people laughing at them. Whatever it was that they were paranoid about, upon reflection they blamed their paranoia on their 'voices', their 'negative thought programme', or being 'poorly':

With bipolar you see you start to get paranoid and you don't want to go anywhere because you think people are laughing at you and want to hurt you and it all escalates out of control, it's just like this negative thought programme, so it's stopping me from doing physical exercise and meeting people and enjoying it... also sometimes with bipolar you don't want to get out of bed because

you don't want to face it... really I can't express how difficult it is when you've got to make yourself do something when all you want to do is hide (Tina).

The paranoid thoughts prevented the body from engaging in the world, as though the body was temporarily paralysed. It was as though there was a mental restriction which induced a felt physical restriction. Paranoia not only prevented some of the participants from engaging in PA, but impacted upon their experiences of PA. For instance they did not enjoy the experience as much as when they felt more relaxed. However, it appeared that for some participants the more they engaged in PA, the more the paranoia faded. This was the case for Paul. His description was focussed around a mental health sports group which he attended. This particular quote refers to playing football:

There has been times when I've been more poorly and I've gone down and I've been nervous and if I've been paranoid about somebody, especially if they are physically threatening or anything like that it's put the wind up me a little bit... it takes a good 6 weeks and then once you get used to it... if your fitness comes back you get to know people and you get to know that they're actually big softies really....so yeah I have had times when I've gone and I've been nervous and there are times like now when I go and I'm just relaxed and I go and enjoy it (Paul).

Paul proposed that people need to give it time to get used to being active again. The anxiety Paul initially described was physically realised, he referred to this as an anxiety bubble. The anxiety bubble surrounding him was perceived to be separate from himself; his anxiety was separate from his self. Once his mind and body began to feel more comfortable in the surroundings, the tension reduced, the bubble shrank and Paul's mind was able to relax into his body. Some of the participants described how they needed the help of at least one other person to enable them to cope with their paranoia to engage in PA.

If you've got someone there that's come on I'll meet you there you know like Sam did, Sam said I'll meet you just get yourself to centre, the first couple of times I was absolutely terrified because I was getting myself down on me own and I was frightened but soon as I got here with Sam, Sam did the class with me and made sure I were alright (Tina)

Sam was the pseudonym given for the fitness instructor who worked with Tina. Tina described how it was extremely difficult for her to travel to the sport centre alone and she could only do this in the knowledge that Sam was there. It may be partly because she did not want to let him down, but this was sufficient motivation for her to get to the centre. Tina went on to state that she participated in the class alone after a few weeks which chimed with what Paul stated about how it 'takes a good 6 weeks'.

Desperation

Although some of the perceived symptoms of psychosis induced paranoia and prevented people from being active, it was these same symptoms that for some people drove them to undertake PA. For Mike, PA was something he undertook in a desperate bid to escape his voices and depression, this was perceived to be a tangled web of thoughts. Being active was an occupation which he accidentally found. He happened to start PA because his Mum had some weights in the house – something he had not been tempted to use before. But in his bid to sort his thoughts, he tried using them and found that PA provided him with the opportunity to focus his mind:

I just seem to like be getting drove mad [by the voices and depression] and it drove me to do exercise... but it's [PA] definitely not something that has been pushed it's more what hearing the voices has pushed me to do (Mike).

PA was something Mike chose to do out of desperation to untangle the web of confusion enshrouding him. Participants were entangled in a web of lethargy and thoughts attributed to side effects of medications, a stagnant environment and

symptoms of the illness. This web enveloped them, often preventing a desire to move. However, it was this same web of lethargy and tangled thoughts that some of the participants described a need to be free from.

5.4.2 Experiencing a snapshot of reality

Spatiality

Lived space has little to do with geography and mathematical distances but more to do with 'felt space' (Van Manen, 1990). The environment that we are in affects our disposition. For instance being at sea can make some people free and calm, for others it could bring terror. In the work of Hayne & Yonge (1997) they found that people with psychosis speak of a confined world in which a person often felt a lack of self-agency. It was described as a dark hole into which they were pulled, however it is space in which they can climb out of, and it is through this environment that their life can be re-constructed. How PA can be used to alter the perception of space emerged through the analysis.

'experiencing a snapshot of reality'

For participants in the study, the routine of PA and the act of doing PA aided people to break through the web of lethargy and tangled thoughts. This theme explored what it was like to escape this web, whether this was momentarily or for a longer period of time. To be free of the web was often described alongside what it felt like to be in the 'real world'. This theme explored how the actual act of PA altered the felt space so that participants felt they were in the real world.

5.3.2.2 Preparation

5.3.2.3 The act of 'doing': feeling real

PA and the environment

Too much PA

Figure 5.4.2. Template 2 a thematic structure of experiencing a snapshot of reality

For some participants the felt space in which they occupied when they perceived their illness to be at its worst was described like being at the bottom of an enclosed, murky deep hole:

I know how out of control this can get to and if I allow myself, allow the mechanism to kick in, it's a downward spiral, I've been in that pit of dung it's not a nice place to be and it's a hard place to get out of, I was quite a methodological clean person but that's where I'm basically coming from, I suppose I'm using a negative to a positive, in my own strange way, using that extreme memory to motivate me and keep the basics (Tom)

This quote from Tom, demonstrated how horrific this place can be, it was an extremely enclosed, sticky, murky place. The basics which Tom outlined does not include PA, the basics consisted of cleaning themselves and their household and a focus on basic everyday living. PA was seen as addition to this basic routine, but was something that became part of the routine to provide focus for their day and 'something to clutch onto' (Paul) when they were ill. It was as though PA was a rung on the ladder which they grasped hold of to prevent themselves slipping further back into the hole and to keep them above the layer of dung.

5.4.2.1 Preparation

For all participants at any stages of the illness, some form of pre-exercise routine appeared to take place. For some this was a simple case of putting their exercise clothing on, others described their careful choice of music they chose to accompany them during exercise, for others an important part of the routine was the drive to the facility where they undertook PA. It seemed that the preparation was the first steps to creeping out of their hole and starting to untangle their web to enable them to engage in the world outside of their cocoon:

I'll sit down for ten minutes, and I force myself, and I put my gym stuff on and it gets me into the psyche, and plus it's more comfortable and so I got the gym stuff on, and I got the bottle of water, and I thought 'right I'm ready', right put the trainers on and then I went for ACDC CD and thought I'll listen to that while I go on the treadmill so I put that on and that was quite a motivating factor... and I set the treadmill for 40 minutes (Tina).

However, the physical preparation was not enough for all participants to be able to engage in PA. Paul described how in preparation for his first competitive football game since he was diagnosed with psychosis, he used a CD of 'mindfulness' which encouraged him to focus his mind, to get himself into the right felt space to enable him to undertake this important match:

Paul: It's called mindfulness... attention training, it's a CD and it's got a man's voice directing what to do, six noises and you've got to identify the noises and so on in turn one at a time and when you've done those six, you'll do behind you from the left to the right and you've got to cut everything else out then... the voice tells you to flick from one sound to another and then eventually after doing that you've got to submerge yourself into all the sounds... that has been massively important in getting better, and when I played football on Saturday I did the tape before playing so that I started to feel more in the natural world if you like, remember that feeling and that really really helped the sport

Researcher: That's really interesting, so why do you think it helps?

Paul: Because it stops that being detached from what's going on, not so much in the sense of being unreal, but it stops your mind from wandering and it focuses you and it zooms you in on what you're doing you know, when you're playing, when you're doing it you're in the zone and things do look more real when you've finished it and when you're playing sport, you're still in that zone,

so I'd recommend it to people, but everything's horses for courses.

Paul used mindfulness to feel as though he was in the 'natural' world. In other parts of this analysis it became clear that PA itself is used to aid people in feeling that they are part of the real world. However, interestingly for Paul in this situation, he felt he needed to be in this place before he took part in this important game.

5.4.2.2 The act of doing: feeling real

For some participants the act of PA allowed them to engage in what they perceived as being in the real world. It was like PA permitted the participants to break free from their illness. This was described when participants were in hospital and also when they were in the community. In either environment, their illness was like an oppression, they were being held against their will in an unfamiliar place which was not perceived as being real. PA was their escape from this oppression to a familiar real world.

It were quite a weird period...it were really funny actually because I was stiff as a board...and me nanna and me great auntie came down. I were just sat back you know in my bed like stiff and me nanna immediately shot down with a walking stick down to the nurses station, 'do you realise how stiff my grandson is do you know that he's poorly you're not looking after him properly' and they gave me some procyclidine and then David [name changed] appeared on ward and the stiffness just went with the procyclidine ... and I felt like going, so I went for the walk, really enjoyed it, we had something to eat, and then I got back on the ward and the doctor were shocked that I'd actually been out and gone for a walk and I felt really good and unfortunately for me at that time things didn't go well....but going for that walk that time and I felt that bit better, after feeling so low and being in bed and stiff it was just like it was like this is amazing, I had a snapshot of real life just for a day or two in a bad spell (Paul).

The experience Paul shared demonstrated how the relief from the stiffness associated with the antipsychotic medication allowed him to feel able to go for a walk. Paul described a huge contrast of experiences between the walk and the rest of his life at the time. It was as though the walk encouraged some light to shine on Paul's dark days, it provided him with a view of the outside world. When describing a different experience Paul went on to state:

There's that unreal feeling that you can have when you're poorly, when you're anxious and sport pops that anxiety bubble a little, certainly for that moment when you're doing it and that while after and if you keep doing it, it does pop that anxiety bubble a little bit and things that have looked unreal and flat and maybe a bit darker, become more 3D and more colourful and stuff – that's what I've found (Paul).

Paul claimed that PA helped him to feel more real, as though he was using his body to engage in the world that beforehand he was not able to do because his thoughts would not allow him. Paul described how his perception of objects altered in that they became more alive, more colourful and 3D, his outlook became brighter. It was like Paul had been existing through observing the world on a black and white 2D TV, the glass of the TV was a barrier preventing him from entering into the world. PA was like being given a pair of colour 3D glasses, where he broke down the barrier and entered the 3D world. A world that he could touch and feel, one which he felt was real life. Engaging in this world perhaps permitted Paul's self to re-engage in this 3D world.

PA and the environment

All of the participants described different types of activity and the different space that they undertook PA. For some they liked to be part of a group environment, for others they preferred individual workouts. Some liked to undertake PA inside, others outside.

A bit of cycling, cycling's good for heavy depression as it works on your senses a bit...them bikes in the gym aren't good for depression but I did notice like the proper mountain bike or on the road it was good for depression...I just think if you're on a bike in the gym you're not looking where you're going and just putting brakes on and stuff and going round corners, flying round the corner, I think it's lot better than being on the bike in the gym, I mean you have these reactions...in the brain and responses and stuff, it seems to get them when you're cycling it's a good form of exercise...(Mike).

It was like Mike was experiencing freedom. His depression was perceived as being oppressive, dulling his senses whereas cycling with the wind in his face, with decisions to take, with the environment to take in awakened his senses and provided him with a body world connection.

Tom also believed that being active in nature helped him to balance his thoughts. However unlike for Mike, Tom undertook walking in nature to slow and calm his mind down:

Part of my recovery was - I used to go for a five mile walk everyday of the week no matter what the weather was, wind, rain I find it very calming being out in nature I feel calming and it helps me face the day and put things in balance (Tom)

Too much PA

Although PA was usually described in positive terms, caution was stated with respect to the amount of PA which participants engaged in. It was felt that if participants undertook too much PA too quickly they could return to that unwanted pit:

Paul: If you jump into it too soon...and you're not up to it, it can knock you back,

Researcher: Right, in what way?

Paul: It can make you think you're a failure, it can make you think ...I'm not up to it anymore I can't do it, people are better than me, or you might think, normally I'd run rings round that person but I can't today because I'm very ill or whatever...if you do go and you can and do too much at once you can over flood your brain and you can become a bit foggy...it can make you want to not do anything really, make you a bit depressed actually, but if you take it steady you're alright.

Paul described how doing too much can 'flood the brain', make him 'foggy' and make him feel 'depressed', these were all seen as a return to how things were before he was able to engage in the real world; before he was able to creep out of the pit. However, he also talked about how on some occasions, PA reduced his confidence which also knocked him back down the ladder.

This theme outlined how the act and routine of PA helped the participants in altering their perception of lived space. It also highlighted that the environment in which PA was undertaken impacted upon the individual PA experiences. For some being outdoors in nature helped to control the perceived symptoms, for others, undertaking PA outside only added to paranoid thoughts.

5.4.3 Being 'normal'

Relationality

Lived relation is the social self that we are in the space that we share with others (van Manen, 1990). Interaction with others creates connections and bonds. It is through this interaction that one's own humanness and existence can be affirmed. Hayne & Yonge (1997) found that for those with psychosis, relational turmoil exists between 'me and my mind'. They found that often people talk of 'self-estrangement' in which the self does not act in agreement with its centre and therefore the self feels threatened. Through analysis of the interviews in this

study it emerged that PA was embroiled in an attempt to re-integrate the lived relation, how this occurred is explored below.

'being normal'

Consistently, throughout the interviews, participants described how they wanted to feel normal and how they wanted others to see them as normal. It appeared to me that being normal is self without the symptoms and entrapments of mental illness. This theme explored how PA was used in the quest to be normal.

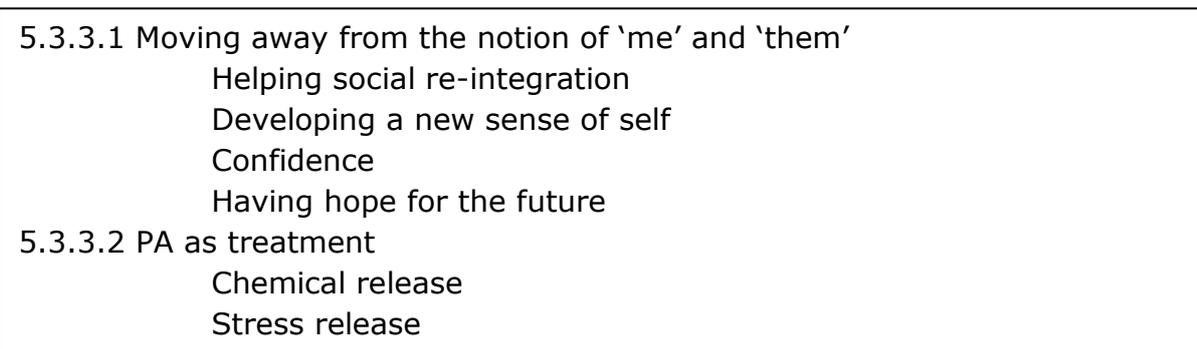


Figure 5.4.3. Template 3 a thematic structure of being 'normal'

5.4.3.1 Moving away from the notion of 'me' and 'them'

Many of the participants discussed how they felt different from others in society. They viewed themselves as a distinct category and did not see themselves as one of 'them'. This was in part, as a result of the perceived stigma that they received from others in society:

It's hard cos I'd like to get out more but I don't know the area and I'm by myself and there's a lot of strange people about whose got discrimination against mentally ill people (Ann).

Out of all of the participants, it was Ann who described most openly the discrimination she faced because of her psychosis, and also her desire to be without these symptoms which distinguished her from others. For Ann, it was her voices that caused her to be different from others in society, and PA was one way that she found to combat these voices:

But the mental illness it's like it wants you, you look at yourself and you think I want to be better, but you get this sense inside you what says I'll never be like anybody else... but here if you try and conquer your voices and overcome them that is probably the best way – exercise (Ann).

Ann appeared to see the psychosis as like a distinct object, something external that has attacked and kidnapped her self, invading her body. I can see that to acquire an unwarranted illness, which you often feel you have no control, can leave you feeling disempowered and downhearted. However, in the quote above Ann described how she felt low because she felt different to other people in society, rather than because of the illness itself. Although for Ann there was no obvious physical sign that she was different from anybody else in society, to me it seemed that her voices were a sign that she was different from the majority of the population. PA was therefore one way to be without this difference.

For some of the other participants, undertaking PA allowed them to be like one of 'them' because they were doing an activity that 'they' do. It was seen as a 'normal' activity like washing, dressing, going to work, eating out:

I like coming to the gym, I like idea of getting in the car, it's like going to work and then coming to the gym and getting in the gym and everybody else is doing it as well, so it must be good you know if they're all eating in a certain restaurant it must be a good restaurant (Larry)

It was as though Larry wanted to be seen doing an activity that was perceived as normal. It was almost like it was reinforcement for Larry that PA was something positive that he should be doing because others in society were doing it.

Helping social re-integration

Engaging in a social world through PA was perceived by some to be the first step in recognition of recovery and 'being normal':

I'm actually saying hello to those people in the street, or instead of feeling really shy and anxious and put my head down, I'm actually looking at them or, been cued into how people work so if you notice that they're not looking at you you look away (Paul).

This quote from Paul followed a description of how walking up the hill to where he lived was becoming increasingly easy, after a gradual increase in PA and engagement with the world. It was as though this participation in walking enabled him to focus on his body, in this case eye contact. This focus on the body brought with it recognition that he was once again engaging with others in the social world, which also produced a sense of achievement.

Some of the participants viewed PA and sport as integral to society and it was perceived that through re-engaging in sport they would re-integrate into this society and begin to feel equal:

I'm bloody 33 and it [sport] gets you back into society. Society is largely about sport, I think a lot of people go to gyms, a lot of people play football, squash, badminton... and it gets you back into proper normal life, with non SUs... both for your well-being and everything... I'm not just talking about the sport... learning how to live again (Paul).

Sport was an important part of Paul's life before he became ill, therefore this re-integration through sport was incredibly meaningful to him. However, not all of the participants were as involved in sport before their illness took a hold of them. Some of the participants would not feel comfortable going to 'mainstream' sport and PA groups, because of the perceived stigma. For them, going to a group for others with mental health problems reduced the isolation felt and for some people an integration into this society with people with mental health problems is better than being alone. Diane described how she preferred to go to an aerobics class for those with mental health problems rather than to a class for 'normal' people:

Meeting other people with mental health problems, knowing that you're not on your own with it, really even though they might have a different problem to you, it's like knowing that there are other people out there (Diane).

Developing a new sense of self

During times of severe illness, participants felt that their self was in turmoil, their experiences were often described as though their self was lost or was in a battle with their mind. PA helped them to develop an identity in which they felt 'normal'; for some participants this was the recognition of a former sporting self, for others it was a recognition of a self without the entrapments of mental illness. In both circumstances it appeared to help settle the troubled relations in mind and self:

It's [being competitive at football] a little touching of the old self, which is something I need to do, perhaps on more occasions (Tom).

For some participants, sport was an integral part of their life prior to the diagnosis of psychosis and for them it was an element of an old self that still existed in the new self. It was part of themselves that they could understand; it was not alien like aspects of their mental illness, medication and change in environment. Equally, it was part of themselves that they saw as being 'normal' or was an activity that helped them to feel 'normal':

One thing I seem to remember from the training session was physical pain, not sadomasochism but physical strain and pain brings you back to yourself ... I could grab hold of myself whereas I was being taken over by my strangeness's... I was scared by myself, it was getting totally insane, it was scary so I had to do something to try get myself some kind of normality (Tom).

For Tom, it was the physical pain associated with PA that made him focus on his body as object. This focus on his body reminded him of his self, he could escape the strangeness - his estranged self.

For those participants who did not perceive themselves to be active prior to mental illness onset, being active can still form part of their new identity. Larry perceived PA as a way of developing himself. He perceived that if PA was part of his routine, and part of his self, that he would be able to cope better with life's challenges:

Well if you're exercising you're developing yourself, I mean mentally so it's just another arrow in your cover that develops and then I'll develop myself in other ways and it all adds to a better thing, at the moment things have been pretty bad but because I've developed myselfit is not as scary and when I hit a bad patch I can sort of weather it out until the weather changes (Larry).

Larry had knitted PA into his self and into his armour which helped protect against the self becoming estranged.

Confidence

Some of the participants, but interestingly most of them men, associated an improvement in strength and fitness with an increase in confidence. Larry described getting fitter as a self-improvement, because he was getting fitter he felt more secure in himself and less vulnerable:

You work out don't you, then you get fit and then when you get fit...you get a confident feeling and I feel more secure because I'm fit...you're a bit more robust and I think well I know it has a knock-on effect (Larry).

Howard also described how being strong gave him confidence. However, it was not just about being strong it was also about developing a skill and being good at that, it was about developing himself, developing a strength of character, a

mental strength. He held the belief that developing the fitness of the body developed the fitness of the mind and getting better at this skill provided him with confidence in himself:

It's like gaining confidence you know I don't think anybody likes to be a pushover, softie when you have a proper workout on a punchbag, it's just like it makes you, honestly, truthfully it makes you feel a lot harder (Howard).

A description of feeling good appeared to often be described because the participants had achieved something of which they had taken control. They had done something which they could be proud of which developed themselves. However feeling good for some of the participants was described alongside looking good. For these participants there was a physical reminder that they have mastered something which they set out to achieve.

I feel as though I'm working towards looking good in my clothes. Looking good when I go out, people don't look at me and think 'god isn't she fat' which is what they used to do before which has added to my bipolar... (Tina).

Losing and maintaining weight was frequently discussed, for Tina this weight loss made Tina feel more accepted by those without mental health problems. She felt less judged because she looked like somebody who was perceived to be more socially acceptable, and it was because of her own hard work that she felt better.

Overcoming the negative symptoms can also increase confidence, through achievement. Ann described feeling like a 'winner' when the voices were successfully ignored and put in their place. It's overcoming negative thoughts and the constant battle with the mind, the greater the battle, the greater the achievement. The effort Ann puts in to fighting the voices is rewarded with being symptom free:

When you're doing it [physical activity]...my voices will try and put me off, but I'm like 'fuck off' and then you feel like you're the winner (Ann).

Hope for the future

A lot of the participants described how their achievements in PA have provided them with more confidence or a more positive outlook. This positive outlook also encouraged people to think about their future:

Because I feel good about myself I want to do more, like I'm looking at things like I've always wanted to do... I'm like 'I really want to do it', I look good, I want to do it I feel better, I'm exercising I feel as though I'm at a stage of me life where everything's coming together (Tina).

PA appeared to provide hope for the future, not only because of the improved confidence in their perception of self, but also because it reminded people that they were capable of achieving something. As they successfully undertook PA in one context, the participants often felt that they could move on to another challenge. PA provided a rung on the ladder to help people achieve their ultimate aspiration – normal life and paid employment.

5.4.3.2 PA as treatment

Some of the participants explicitly used PA as part of their treatment programme. It was not something which had been prescribed but was something which they had chosen to add to their treatment plan alongside medication and for some psychotherapy.

Chemical Release

One way in which participants believed that PA could develop them was through the release of 'good' chemicals into their body. It was as though the perceived good chemicals could counter-act some of the negative chemicals released into the body from either medications or the illness itself. For example, Mike discussed chemicals a lot during his interview and believed that adrenaline and

endorphins were released during PA, which helped him cope with the knowledge of the perceived bad chemicals released into his body from the medications:

I try and have it with the medication so I'm like a normal person, instead of feeling really drowsy or feeling like you've got too many of these chemicals I just try and keep it just like normal (Mike)

Mike had read a lot about his psychosis and appeared to take particular interest in the chemicals involved. Because of this he had also researched PA, had read about adrenaline and endorphins and believed that these were released. The chemicals released by PA were seen as natural, they were produced naturally by the body it was not an unwanted extra pumped into the bloodstream, like medications.

Stress release

A number of the participants described how PA was used as a way to release stress and the associated negative thoughts. Stress was described as something which appeared to have become physically realised:

It [PA] releases your muscles, cos when you're stressed it goes into all your muscles and that, I read in a book, it makes knots in your muscles and...it's like I used to get massages...but these days I don't because I think I don't need it no more 'cos I'm not that poorly any more, but when you're exercising and you're stretching and that, you can feel all the tension leaving you (Ann).

This quote left me pondering, what does Ann feel actually leaving her? Can a person actually feel tension leaving? Ann made sense of this perceived release of tension through knowledge acquired from books. It made sense to me that stress inhabits the body, including the muscles. A release of stress appeared to be reinforced by the visual and actual felt sensation of sweat and its associated heat. As though being hot and seeing sweat being excreted contained the perceived negative thoughts and symptoms:

It's a release of all the negative stuff that I'm thinking...because I do it, and as I'm going along on the treadmill...you get hot don't you because you're exercising, you're body's working and it releases those chemicals... and I just think to myself ahhhhhh [relaxing sound], it's like a stress release (Tina).

This theme outlined how PA helped people to create a new sense of self, one that enabled them to be seen like others in society. For some, this new sense of self incorporated a former 'sporty' self, whereas for others PA aided development of their 'normal' self to make them feel stronger and more likely to cope with challenges. For those who felt comfortable PA allowed them access to engage with a mainstream world, however for those who perceived that others in society would judge them for their illness, undertaking PA helped re-integrate them into a social world, reducing isolation. In addition, PA was seen as a natural and normal treatment which can help to combat some of the perceived negative factors associated with their illness.

PA provided participants with a tool to take control over aspects of their self which they were not satisfied with.

5.4.4 Dance as if no-one is watching

Temporality

Lived time is the subjective time that we experience rather than the objective measured time. Experientially, if we are enjoying ourselves or are absorbed in an activity then time is often described as 'flying by', whereas if we are bored, time passes slowly and can be described as time standing still. The temporal landscape of a person is made up of dimensions of the past, present and future (van Manen, 1997). For people with mental health problems time has been found to unfold in "sick cycles" consisting of times when they are 'ill', and periods of perceived wellness which are interspersed with mounting illness (Hayne and Yonge, 1997). Walton (2001) found that if a person could accept their past illness, they could integrate this into present and this could provide them with hope for the future. A discussion of how a new sense of self has

emerged through the past and present experiences and how this provides hope for the future has been discussed. This current theme, concentrates on the experience of lived time. Specifically, how the experience of time appears to vary depending upon how engaged the participants are in their PA.

5.3.4.1 PA as time out from a focus on symptomology/negative life issues

Walking negative thoughts out of me

Mind over matter

Skill acquisition

Being in the Zone

Environment

Presence of others

Figure 5.4.4. Template 4, a thematic structure of the concept of dance as if no-one is watching

'dance as if no-one is watching'

5.4.4.1 PA as time out from a focus on symptomology/negative life issues

A number of the participants described how PA provided them with a tool to either take time out from their symptomology or provided them with the time and space to work through their perceived negative thoughts.

Walking negative thoughts out of me

Tina provided a thorough and insightful example of the alterations in her thought processes by using her time to walk through these thoughts on a treadmill. In summary, the example she provided was when somebody had kicked the wing mirror off her car which was left on the street outside her house. She described how she was incredibly upset and became paranoid about people 'having it in for her'. To make matters worse, when she reversed her car on to the drive, she drove into her neighbours fence. Tina described being at rock bottom and crying into her neighbours arms. Tina continued:

I got in the house and I thought I just want to go to bed... then I actually got on the treadmill... I just thought I've had enough I get to the stage where I'm exhausted... so it's either go to bed or get on the treadmill, so I got on treadmill ...and I'm walking away on treadmill when you start thinking about things and I stood there and I thought 'why did I get myself into such a state it's only a car, you know it can be fixed and so what if they just decided to cause you loads of problems' and then I thought 'well I didn't knock fence down when I hit it like you know I were going 2 mile an hour'...but it sounds like you've hit it hard when it crashes in car, and I thought 'well they were alright I didn't have to rebuild his fence or owt and I just thought well he weren't bothered cos' all he said to me 'were it's only a bit of wood Tina', so then I started thinking and all the time I were walking on this treadmill and I were thinking 'why on earth were I getting myself all worked up about it, it's nowt it can be fixed' and after that my thought process changed completely, and I just thought 'why, why did I get myself into a state, nobody else is bothered, and after I'd done it I felt quite alright and I weren't upset no more and I thought it aint half as bad as what I thought it were (Tina).

This description demonstrated how Tina believed that walking on the treadmill helped her go from thinking 'everybody hates me' to 'it's nowt it can be fixed'.

I saw this as going on a journey, the beginning of this journey for Tina was 'rock bottom'. It was as though from the outset of this journey she believed that there was only one direction that the walk could take her in and that was upwards. Every step she took she was getting a step closer to finishing her journey, grinding each negative thought down. By the end of her journey the negative thoughts were reframed in a positive manner.

If Tina had not been on this journey, she described how she would have just gone to bed. It was perceived that those same thoughts would be ruminating, but she would be stuck in one place like her thoughts would also be stuck; the

same thoughts being repeated over and over with no chance to escape. For Tina, going on this embodied journey allowed her the time to walk the thoughts out of her through the movement of her body. Tina was not focussed on time as her mind was absorbed in her thoughts and therefore time was not perceived to drag.

Mind over matter

For most participants, PA was used to distract from their thoughts and therefore undertaking a pre-reflective activity which required no conscious thoughts, such as walking was not sufficient.

Ann described how she used PA as an object of attention to focus on something other than her voices. However, for Ann, her voices were only faded, they did not disappear completely. It was like they were background noise that she managed to ignore if she focused on her 'mission' of completing the PA that she had set out for herself:

Well they're there [voices] but you're kind of on a mission, you go on your own mission like everybody does, like you'll set a timer on your rowing boat like for five ten minutes or so and you will focus on doing that (Ann).

For Ann, setting the time on the rowing machine appeared to be important as she knew that if she focused her mind on rowing for those few minutes, she could mute these voices, the voices might still be there, but they could be put to one side.

Trains often go past the place in which I work, these can be distracting and irritating if I focus on them. However, if my mind is absorbed in a different task such as work, I hardly notice this noise, yet it is still there. For Ann, rowing became her focus rather than the voices. It seemed that this focus on a literal amount of time was important for Ann, because it was 'real' time, it was time spent doing an activity that is the same time as the rest of the population. For those 10 minutes she was experiencing time at the same rate as others.

Learning a skill also appeared to distract some of the participants from their voices. Mike used a variety of PA to help with different aspects of his illness. He found that boxing was the best for distracting away from his voices, but he attributed this to the fact that it was a skill that he was just learning:

I think it's because you're thinking whilst you doing it, when you're running your legs just move naturally, but I'm just starting learning... thinking right fast as you do it (Mike).

Being in the zone

When a person was totally absorbed in the activity there was no conscious effort to ignore the voices it was something which happened as a consequence of the activity. I saw this as being like the concept athletes describe of 'being in the zone'. Like these athletes in 'the zone' the participants in this study were completely absorbed in their activity, they were completely focussed on their goal, making it unlikely that distractions would put them off, there was no attention on their body.

As I say the hardest part I've got is combating and beating these voices and the more intense something is the less impact they can have (Tom).

Being in the zone appeared to be different for each person, for some it was the environment which helped them to become absorbed, for some it was the presence of others and for others it was being involved in a competition. However, if an activity was not fully absorbing, time appeared to drag.

For Tom walking in nature was what he found thoroughly engaging:

A voice I would be having a bad time with in my head, but when I was walking and out in nature things calmed down, the rhythm...I don't know what, something inside told me it was the right thing to do, the rhythm of walking it's.... my mind was racing at 100 miles per hour where's walking slowed things down, took time to look around see what was going on in

nature, took the smallest details watching the bees collecting pollen and things you just get lost in the moment (Tom).

The rhythm of walking appeared to be important to Tom. This slow constant rhythm was in stark contrast to his mind which was perceived as working extremely fast, something which he was trying to fight and slow down. Tom viewed that his mind was separate from his body, his mind was racing, but his body was able to walk slowly and rhythmically. He viewed that it was this movement of the body that was able to slow his thoughts down. The rhythm was constant unlike his mind. Of equal importance to Tom was the nature around him, it was through observing this that he was able to 'get lost in the moment' suggesting that he was unaware of literal time.

On occasions, participants described how being part of a group was easier to become absorbed in the activity, but only if others were positive around them:

Once you get there you get a physical lift, you get wrapped up in the excitement, it is rather exciting especially if you're winning, so yeah I think group activities are easier to participate in rather than...solitary ones because you've just got your own thoughts (Tom).

It was as though being surrounded by what he perceived as positive people impacted upon his own thought process, he could sense that other people were enjoying it and he got 'caught up' and 'wrapped up' in these emotions. Tom also described how the competition of football enabled him to get lost in the game. I perceived this to be that he was totally immersed in the game. He was functioning on a pre-reflective level where the task in which he was engaged absorbed his attention, and there was no focus on his body or his voices. For Tom, being engaged with others helped him to be absorbed – he was dancing like no-one is watching yet others were surrounding him.

These participants described how they were in the zone and how actual time became unimportant, there was no focus on this time. This is what I perceive time to feel like when time is described to be 'flying by'. However other

participants described how if they were not engaged in PA, time spent doing PA was a laborious effort and time dragged:

I'm doing just over two miles and yeah it is a bit boring because you think two minutes to go you know what I mean and when you think about it, 40 minutes like that and you think how much longer? And you put all your CD's on that you want like, and you get a bit fed up of that after a bit don't you, and you think orgh god how much longer - 2 minutes to go and by the end you think am I done yet? (Tina)

It appeared that if the mind was focussed on the actual time, the participant was not fully absorbed.

The concept of dance like no-one is watching was a discussion about how a number of the participants managed to use PA to take time out from their voices. For some, it was a deliberate process where they used the time spent in PA to enable them to focus the mind elsewhere or to alter their thought process. On other occasions, I have described participants being in the zone. This is where the participants described being so absorbed in an activity that it was as if their voices did not exist. They were able to undertake PA without the watchful eye of their voices. They were absorbed in an activity where the voices were not watching: they were able to dance like no-one is watching. When participants were completely absorbed in a task there was no consideration of time. They were absorbed in the present, with no thought for the future or past. However, on the occasions where participants were not fully engaged in PA, their thoughts often turned to the future and how much longer they still had to conduct PA until they reached their goal. On these occasions PA was seen as a chore, but the participants kept going as they were determined to achieve their goal.

5.5 Discussion and closing the circle

Introduction

In this study hermeneutic phenomenology has been used to understand the phenomenon of PA and QoL in people with psychosis. The four main themes

which emerged were discussed alongside the four existentials of the lifeworld (van Manen, 1990).

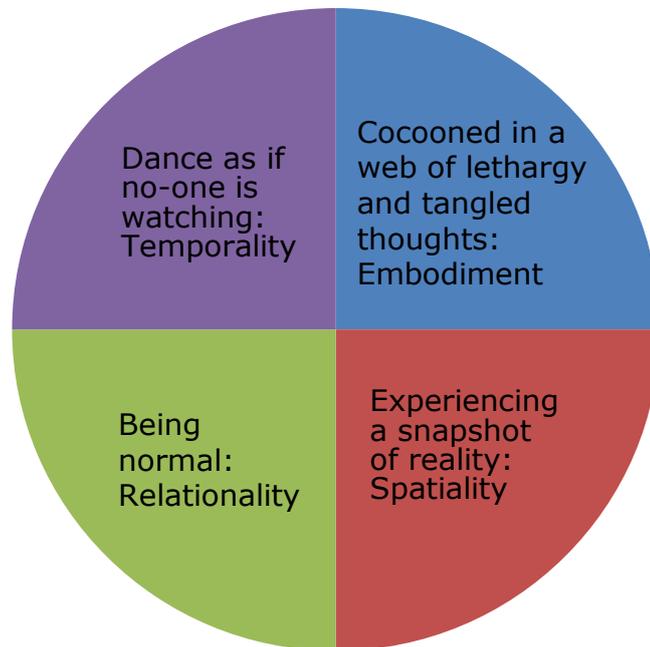


Figure 5.5 Existential interpretation of the phenomenon of PA and QoL in people with psychosis

Each of the eight participants provided me with a different insight into PA. I interviewed the first two of these participants on the same morning in a room in a day centre which they both attended. I approached these interviews with anticipation and hope. I felt a little anxious that I would not receive rich information from the participants or that the interviews would be stilted and awkward. This preconception was prejudiced discussions I had had with other researchers who had carried out interviews with people with psychosis about PA. However, my nerves derived from preconceived thoughts were unfounded, I talked with these first two participants for just under an hour each and in both cases they appeared to talk openly and honestly about their experiences of PA and their experiences of psychosis, rarely detracting from the focus of the interview. This situation followed for a further four of the participants and there were only two interviews where I felt that at times the conversation stilted and the participants did not seem to have much to discuss with respect to the phenomenon. Nevertheless, this was interesting in itself and from what they did say, it came across to me that PA did not play such an important role for them in

their lives as it did for other participants. Throughout the interviews I could see potential themes to guide the analysis developing and during the final interview which was with Ann I found myself thinking 'Ann is describing very similar aspects of the experience to a number of the other participants'. Often I felt it was her words that encapsulated some of the themes that had been developing in my thoughts throughout this interview process.

5.5.1 Parallel and distinctive findings

Although the themes were organised in a way which distinguished the existential givens into distinct themes, there were a number of overlapping qualities. Especially, it seemed that embodiment can help to uncover the essential meaning of the phenomenon in all of the themes. How these themes weave in and out of each other and their place in the whole will now be described with respect to the literature which has explored similar aspects of the phenomenon.

Embodiment: cocooned in a web of lethargy and tangled thoughts

Embodiment was used to describe the struggle the participants faced to be active. It was found that the body was often prevented from being active because it is enshrouded in a web of lethargy and tangled thoughts. Lethargy was associated with symptoms of the illness, side-effects of the medication and the environment where the participant inhabited. Avolition is the term used when describing a lack of motivation in psychiatric discourse. It is one of the negative symptoms of psychosis according to the definition as outlined by DSM-IV and ICD-10. Avolition may therefore be viewed by mental health professionals as part of a person's psychosis. It occurred to me that if professionals view it as part of the SU's illness, SUs may also view it as part of their illness and therefore both professionals and SUs may not believe that they can be active because of their illness. It becomes a self-fulfilling prophecy, reinforcing a culture of limited PA for people with psychosis.

In other literature, work has been carried out which identifies barriers to PA in people with serious mental illness (SMI). McDevitt et al (2006) carried out focus groups in people with psychosis and found that barriers to PA are: mental illness symptoms, medications, weight gain from medications, safety concerns and fear

of discrimination. A recurring theme in the literature is how participants perceive that their medication and their illness are what prevent them from being active (Roberts & Bailey, 2011; Hodgson, 2011).

None of the above studies had undertaken a phenomenological analysis upon the phenomenon and had often been specifically investigating what the barriers were to PA in a population of people with either psychosis or SMI. Study two differed as the focus was on a person's experiences of PA and through phenomenological analysis it became clear that there are a multitude of embodied reasons which prevented the participants from being active. Equally, through the methodology implemented in the current study, it emerged that the same factors that prevented people from being active actually drove them to be active. This study also adds insight into the role of embodiment as it was highlighted that the struggle to be active is inherent in a perceived mind-body dualism by the participants. They perceived that when they were ill, their mind was separate from their body, their body was ignored. However, the medication made people focus on their body which appeared to be separate from self. Because their mind and body were perceived as separate they were in a struggle to connect to the world as though they were not seen as a whole person. However, it was this focus on the lack of action from the body that induced participants to be active.

Upon consideration of the whole, it was viewed that this is an essential theme to the phenomenon of PA and QoL in people with psychosis. This struggle to be active was inherent in the PA experiences of the participants. It outlined how their illness, it's associated symptoms, medication and the environment all play a part in the participants QoL. Without PA, their life was viewed as stagnant, one that participants described being incredibly frustrated with, one which suggests a poor QoL. It was this stagnation that drove people to be active, it was their choice. If they chose to be active they were choosing to fight to improve their QoL. The participants were active players in their recovery. However, a positive experience of PA could be prevented if the perceived tangled thoughts were too great.

Spatiality: experiencing a snapshot of reality

The existential of spatiality enlightened a discussion of how the routine of PA, including preparation and the actual act of PA aids people escape 'the pit of dung' and break into the perceived 'real world'. PA also appeared to help prevent people from falling backwards into undesired places. Different environments presented different experiences, but frequently being outside was described alongside feeling real. However, this depended on the participant, for some being outside undertaking PA was like breaking free from an oppression, however for others undertaking PA outside augments the feeling of oppression because of the fear associated with being outside. Darker et al (2007) found that people found walking more enjoyable if surrounded by nature. This was similar to the finding in the current study, but this was not the case for all participants and it depended on the nature of their perceived symptoms.

Other research has outlined that the characteristics of the facility where PA takes place is important (Raine et al, 2002). For instance PA was found to be more appealing if it was not in a facility associated with mental health services. This did not emerge in the current study. However, most of the PA undertaken was not at facilities associated with mental health services but was either at local sports centres, in their home or outside close to their home. Some of these activities were provided by mental health services and a discussion around mainstream and mental health services was discussed further in relationality. Overall it emerged that for PA to be beneficial and to prevent a return to 'the pit of dung' the individual needed to feel safe and comfortable in their environment.

From the extensive literature searches which I have carried out I have not identified any other studies which have found that PA alters the perception of space in people with psychosis. For me, this is an essential consideration for QoL. When people perceived themselves to be in 'the pit of dung' their QoL was severely affected. They were often physically and mentally confined to a small space unable to do anything. PA appeared to be beneficial when the participants were on their way out of the 'pit', but may still be enshrouded in the web of lethargy and tangled thoughts. The use of the body in a meaningful way

engaging in the world permitted the participants to break into the 'real' world. Or as one participant stated 'sport pops the anxiety bubble'. On these occasions, PA assisted the participants to have a clear, unclouded view of the world, feeling free. Nevertheless, if individuals were not ready to engage in PA or they undertook too much it could take them back into the pit of dung. Therefore PA should not be too exhaustive especially if people do not feel well or prepared on that particular day.

Relationality: Being normal

This existential was used to discuss how the participants strived to be perceived as 'normal'. That was to balance their perceived self, which appeared to have become estranged during times of perceived psychosis. They wanted to feel normal, but they also want others in society to view them as normal. PA was used to help develop a new balanced sense of self.

Carless & Douglas (2010) undertook a narrative analysis of PA in those with SMI with the focus on recovery. They highlighted that PA can be used to rebuild an athletic identity and how this identity can help control their 'life story' with only those who have a positive sport or PA history benefiting from this reclaimed identity. It emerged through the analysis that I undertook that PA also provided the participants with a means of rebuilding their sense of self. However, the current study differed from Carless & Douglas (2008), as the existentials were used to aid analysis. Therefore, using relationality it was perceived that PA could help develop a sense of self in participants with and without pre-existing athletic identity signs.

PA provided participants with a sense of autonomy over their self; it allowed them to take control over their mental health (symptoms), their physical health (fitness, strength and weight loss) and their social health (integration into society). Developing these aspects of themselves enabled them to feel more confident in whom they were. Fox and Corbin (1989) outlined that the self is made up of four components: academic self, emotional self, physical self and social self. The current study suggested that PA aided in developing all of these concepts with the exception of the academic self. However, most of the

participants ultimate goal was to gain full-time employment and whilst PA did not directly enhance the academic self; it did provide them with enhanced self-esteem to think about future courses and careers. Most of the literature into PA and self has directly investigated the physical self (Fox, 1998), however, the current study appeared to suggest that it is not only the physical self which is enhanced. Equally it does not seem feasible to separate the concept of self into the four distinct components as they appeared to be entwined with one another. In addition, PA forced some of the participants to focus on their body. It was the recognition of the body as object that allowed them to be free from their thoughts and reminded them of their selves prior to the onset of psychosis.

Existentialist, Jean-Paul Sartre (1943) believed that humans exist in relation to other people and therefore live differently because of the existence of others. People do not always exist at the pre-reflective level – others have an influence on the awareness of a person's existence and live differently because of this existence. For the participants in this study, undertaking PA was seen to be a normal activity by others in society and being seen by others as 'sporty' was important to their identity. The discussion of PA as a 'normal' activity, lead to a discussion of mainstream PA and PA provided specifically for people with mental health problems. Some participants described how they preferred to go to PA groups specifically for people with mental health problems, whereas others wanted to attend mainstream PA in order to feel 'normal'. This appeared to depend upon how competent the participants perceived they were at PA, but also on their perceived illness severity and the perceived stigma from those who were not diagnosed with a mental health problem. It is suggested that mental health provision of PA is a good place to begin or return to PA, but once an individual's body is used to being active, individuals can be signposted to mainstream PA. However, it is imperative that an individual feels comfortable in their environment and as such should be assessed on an individual needs basis (see section 7.3 for further discussion of recommendations).

In terms of PA and QoL, it was clear to me that 'being normal' was incredibly important to people with psychosis. PA helped people to feel normal through a re-balancing of self. PA aided them to feel in control of their self and therefore

more in control of their life. They once again had autonomy over their life which was essential for recovery and QoL. The re-balancing of self also provided them with hope and confidence for future endeavours.

Temporality: dance as if no-one is watching

Temporality was used to describe how the participants used PA as time out from challenges in their life and perceived negative aspects of their psychosis. This time out provided the participants with the opportunity to work through their thoughts or to be completely distracted from their thoughts depending upon the type of PA undertaken. Time was perceived to either drag, to be unimportant, or to fly depending upon the type of PA. For the participants to be completely distracted from their thoughts and perceived voices, the PA was described as being completely absorbing; as though they were in tune with the environment. However, the participants needed to be comfortable in this environment for the person to be absorbed. Their mind, self and body were perceived to be working as one in the world, there was no focus on the body, thoughts or time. They were once again an embodied being. Other studies have found that PA can help distract people with psychosis from their voices and other symptoms such as hallucinations (Faulkner & Sparkes, 1999; Falloon & Talbot, 1981). But these have not considered how engaging the PA needs to be for people to be able to successfully ignore their voices.

A distraction hypothesis was first postulated by Bahrke & Morgan (1978) to explain how PA improves mood. This theory suggests that PA provides time-out or respite from stressful thoughts. In a number of early studies there was found to be no difference between PA and other forms of time-out such as meditation and periods of rest or relaxation (Berger et al, 1988; Brown et al, 1993; Glazer & O'Connor, 1992). This suggested that PA was one of many tools which could be used to provide this time to escape. However, this hypothesis has since been dismissed as the sole explanation for improvements in mental health as PA has been found to have a negative impact upon affect (Backhouse et al, 2007). However, in the current study, PA provided the respite from symptoms which was perceived to be of the utmost importance. The purpose of this time-out

varied across individuals and situations; some used it to focus on their thoughts and to work through them whereas others used PA to distract from thoughts, by either focussing on their body or the environment, this is known as attentional focus (Morgan, 1978).

Attentional focus during PA has been reported to vary perceptions of exertion, affective responses and physiological stress depending upon if the attentional focus is on environmental stimuli (dissociation) or on one's body (association) (Lind et al, 2009). Association is characterised as the focus on bodily sensations such as changes in respiration, temperature and muscular fatigue (Morgan, 1978). Whereas dissociation is regarded as a cognitive process of actively blocking out sensations of pain or discomfort related to physical effort (Morgan, 1978). Studies have shown that thought content becomes more associative as physical intensity or perceived exertion increases and there is less impact from psychological factors (Lind et al, 2009). This has implications with respect to the current study. Some participants required PA to be of an intensity in which there was no space for cognitive processes in their mind and therefore attentional focus needed to be associative. In the general population this type of focus has negative implications in terms of affect (Biddle & Ekkakakis, 2005). However, for some participants in the current study this focus on physiological responses was important to a) highlight that they were doing something positive for their body and b) to ensure that they were exercising at a perceived intensity which prevented their thoughts from intruding. In these circumstances, it was perceived that PA would be much better than other activities at providing distraction. For instance relaxation was suggested to some of the participants to help reduce symptoms, however, this was found to encourage them to focus upon their thoughts. Whereas, PA not only provided the time-out but a release from these symptoms; a release which they described physically seeing was leaving them through sweat.

For others dissociated attention was used to distract from their thoughts by focussing upon aspects of either the social or physical environment. In these situations PA does not need to be physically intense but there needs to be a sufficiently stimulating environment to provide distraction. It was in these

situations that I described participants as being 'in the zone'. Being 'in the zone' is theoretically described as having feelings of 'flow' (Csikszentmihalyi, 1975). This is the experience of optimal engagement and fulfilment where time is described to fly. Flow is when individuals are not consciously aware of their movements and actions; they are concentrating on striving towards a goal and experience a loss of self-consciousness (Csikszentmihalyi, 1975). This loss of self-consciousness was very important for some of the participants in this study in order for them to be completely distracted from their voices.

However, for some participants the attentional focus needed to be dissociated and therefore the intensity of PA was to be low in order for them to concentrate on their thoughts and to solve problems. In considering QoL, PA allowed people to use their time in a positive and meaningful manner. It was time spent either working through negative thoughts or it was time spent being free from their voices. Both these negative thoughts and voices were often described by the participants as wearing them down and contributing to the feeling of lethargy. Therefore any time out from this was perceived as being beneficial, it gave them a relief from the constant badgering enabling them to feel refreshed. Although this relief from these thoughts and symptoms may only be temporary it was beneficial to QoL, because it reminded people that they were capable of being an integrated solid self who could engage in the world. Even on the occasions where time was seen to drag and their self was not solid, QoL was still seen to be enhanced. This was because the participants have achieved a goal through completing an exercise task and it was the achievement of this goal which was perceived to enhance QoL. It provided people with hope and prevented the negative spiral where the thoughts and voices became dominant by allowing respite from these, preventing a further wearing down of the self.

Across the themes, different types of PA emerged as being beneficial for QoL. However, this was very individual specific and often depended on the purpose of PA. There was no clear evidence of a gender split although men did talk of competition and women did not. In contrast, females were more likely to discuss structured PA classes, such as aerobics and dancing. However, PA was meaningful to both sexes and was often used for similar purposes: to feel

normal, to engage in the real world or to distract themselves from perceived negative thoughts. To enable this integration of self a number of implications were discussed. These are discussed further in section 7.2.5 upon a synthesis of all three studies.

5.4.2 Closing the circle

Before I undertook these interviews, I believed beyond doubt that PA could be beneficial for the QoL of people with psychosis. This is partly as a result of having undertaken the literature review but also because of my own beneficial experiences of PA. In some respects it seemed like common sense; PA helps people feel better in those without psychosis so why should it be any different for those with psychosis? Equally, when I began this process I thought PA could serve as a form of treatment for people with psychosis, as in it could simply treat the symptoms. What I neglected to consider was what PA could mean to people with psychosis. My simplistic view has been utterly quashed and what I have found is that whilst overall PA does appear to be beneficial for QoL in those people interviewed, the experiences shared outline that the reasons why and how are very complex. Across the people I interviewed it seemed that they were often embroiled in a struggle to function as they would like. PA was frequently discussed as an activity that aids them in this struggle, in winning a battle and was perceived as enriching their day-to-day lives. However, undertaking PA was a battle in itself, with a number of barriers presented.

Although PA was used by some to treat the symptoms of psychosis as I originally presumed, it also appeared to improve QoL in a number of other ways. Upon closing the circle, it seemed that PA provided participants with the time out from the perceived negative aspects of their illness and helped people to break free of the web of lethargy and tangled thoughts. Breaking out of this web allowed people access to the real world where they felt normal and began to build a new identity where they felt physically and mentally stronger. Their self was re-integrated into the body and the body felt solid and whole again. With subsequent challenges, mental or physical it is envisaged that the circle will continue.

Chapter 6

Study three: Professional focus groups

This chapter will detail the methods and results of study three. Study three is a qualitative study investigating the perceptions and experiences of mental health professionals about PA and QoL. This chapter contains the methodology and findings which are integrated with a discussion of the literature.

In brief, study three was considered necessary to add a different perspective of the phenomenon of PA and QoL in people with psychosis. An understanding of mental health professionals' assumptions and experiences of PA allows an insight into the observed potential benefits and detriments of PA for those with psychosis and those professionals involved in their care. These could be similar or differ from individuals with psychosis experiences and could offer further implications in the delivery of PA services. Previous research into mental health professionals attitudes towards PA is either dated (e.g. Dean et al, 2001; Faulkner & Biddle, 2001) and precedes new DH (2006, 2011c) policy in mental health care, or is survey based (e.g. Phongsavan et al, 2007). Therefore, it is argued that current PA provision needs to be explored through qualitative methods alongside a discussion of facilitators and barriers to PA service implementation.

6.1 Aim

The aim was to explore the perceptions and experiences of mental health professionals with regard to PA and QoL in people with psychosis.

6.2 Methodology

6.2.1 Design

A qualitative focus group design was used for study three. An interpretivist paradigm was implemented in the design and analysis of the focus groups. See section 6.2.6 for more discussion on this.

6.2.2 Focus groups

Focus groups were implemented as the aim was to not only reveal professionals' perceptions of PA within community mental health but also to understand the cultural and organisational context. It was therefore deemed important to form a group where experiences could be shared about organisational practices and experiences (Blumer, 1969).

Participants were all from one mental health Trust. The locations of the focus groups were on the Trust's property in which all of the participants were familiar. Private and quiet rooms were used where there was little chance of interruption. Chairs were organised in a circle in both focus groups. A small coffee table was in the middle for one focus group, for the second focus group an unmovable table was in place.

The focus groups were moderated by the Director of Studies for the PhD who worked as a Clinical Psychologist within the Trust. This was decided because I have relatively little experience of leading focus group facilitation, and it was felt that participants might respond more readily to someone who was deemed to be their equal, rather than someone who was just beginning their research career. I was present at the focus groups as an observer and periodically asked questions if it was felt that further elaboration or clarification was required for my own understanding. The interview guide for this study can be seen in appendix 16.

6.2.3 Participants, recruitment and conduct of study three

A convenience purposive sample was obtained. Professionals who had previously engaged in the research process by helping with recruiting participants for either study one or two were approached. It was perceived that those who engaged with the process in study one and two would be more willing to participate in a discussion about PA. In addition, they may be more likely to have engaged with and be knowledgeable about PA and service provision within the mental health Trust. It was acknowledged that this may exclude the views of those who may have negative perceptions of PA to participate. However, the focus of this study was to explore professionals perceptions and experiences of PA and therefore if

they had little interest or knowledge of provision their input may have been limited.

It was intended to obtain a reasonably heterogenic group, with respect to the professionals' professional role; this was to enable a range of perceptions to be shared about the culture of PA in community mental health. Therefore a range of professionals were contacted, these included: Service Leads, Psychiatrists, Clinical Psychologists, Physiotherapists, Occupational Therapists (OT), Community Psychiatric Nurses (CPNs) and Support, Time and Recovery workers (STR). See table 6.2.3 for a list of professionals who participated and their professional title.

Table 6.2.3 Participant details of the focus groups.

Focus group	Name	Profession
1	Kevin	Psychiatrist
1	Tom	Professional Lead.
1	Richard	Support Time and Recovery (STR) Worker
1	John	Occupational Therapist (OT)
2	Terry	Community Psychiatric Nurse (CPN)
2	Sally	Community Psychiatric Nurse (CPN)
2	James	Support Time and Recovery (STR) Worker
2	Lee	Support Time and Recovery (STR) Worker
2	Sarah	Young person's development worker
2	Charlotte	Placement Student Nurse

Ten professionals participated in the two focus groups. Six participants per group had been arranged initially; however two were unable to make the first focus group. There are no set rules to group size in focus groups (King & Horrocks, 2010). However, too many could make it difficult to control the discussion and too few could make it difficult to sustain the discussion (Morgan, 1997). King & Horrocks (2010) suggest that the size of the group depends upon the individuals participating. For instance, if the participants were a group of teenagers who had not met before, it could be anticipated that low level of involvement could occur. However, for this study it was anticipated that high levels of engagement would be apparent as the participants were highly motivated professionals and

therefore 4-6 participants was appropriate. Figure 6.2.3 shows the procedure of recruitment, consent and conduct of this study.

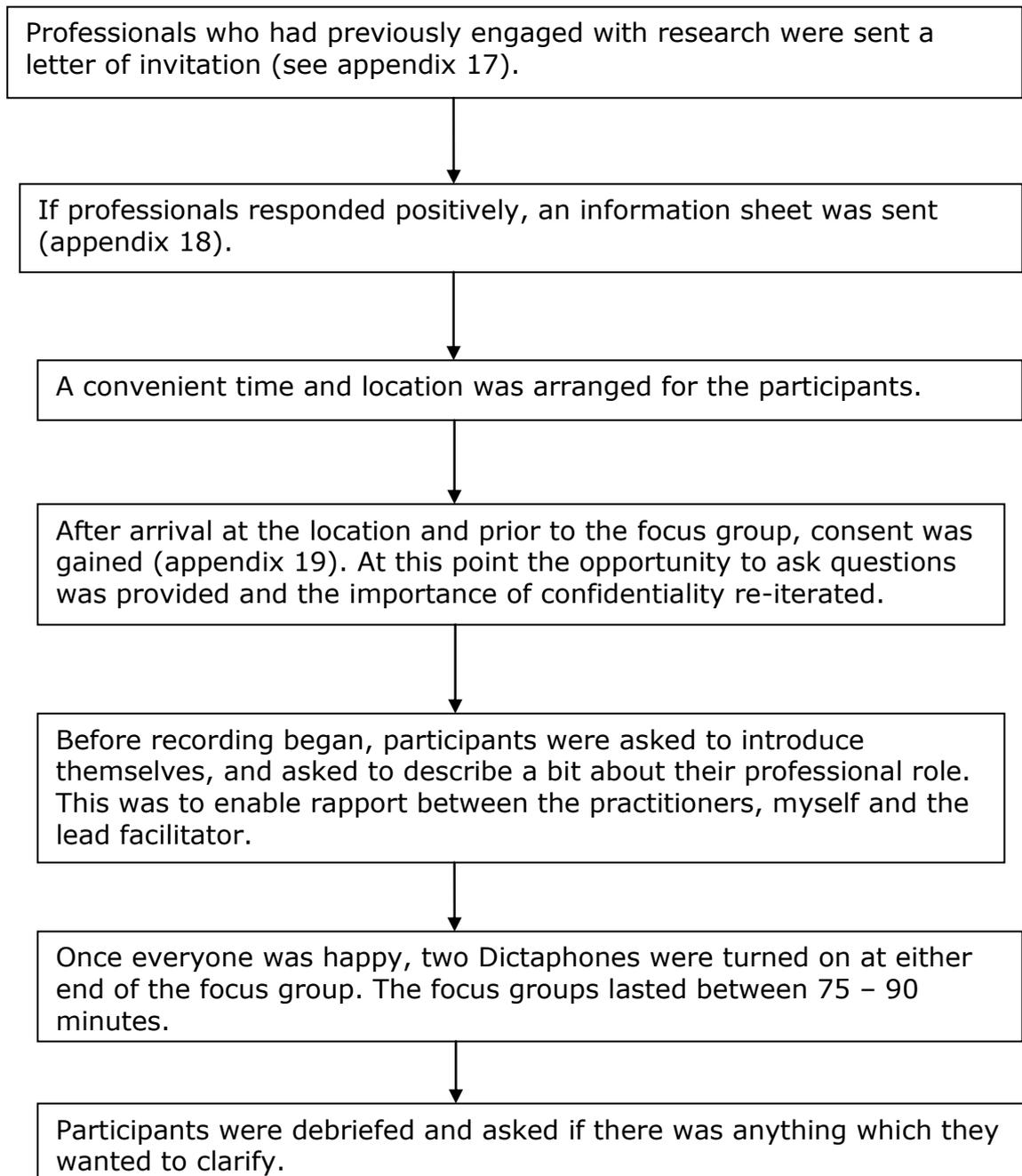


Figure 6.2.3 Procedure and recruitment for study three.

6.2.4 Assessment of quality

The same quality checks were undertaken as for study two (See section 5.2.4.)

6.2.5 Ethical considerations

Ethical considerations have been discussed in both chapters four and five. The principal additional ethical consideration in this study was group confidentiality. It was important for the participants to feel that they could discuss aspects of their work, without fear of reprisals outside of the focus groups. Therefore, participants were explicitly asked to sign a specific item on the consent form which stated that confidentiality would not be breached. In addition, before the focus group began participants were reminded that what was discussed within the focus group should not be shared with others. This was to enable participants to speak freely. However, it is acknowledged that this is not a panacea to prevent all possibility of confidentiality being breached (King & Horrocks, 2010).

6.2.6 Analysis

A broad thematic analysis was chosen. A flexible approach to analysis was required as the aim was not only to explore the professional experiences of PA and QoL in SUs, but also to investigate the wider organisational context in which PA is and could be provided. Therefore, it was decided that there was no advantage of aligning the study with a pre-existing theoretical framework such as phenomenology as the focus was not solely on the lived experiences of the individuals. A broader perspective was required, which enabled shared understandings of organisational structures and PA provision as well as the observed experiences of PA in people with psychosis. A flexible thematic analysis is equipped to do this (Braun & Clarke, 2006).

A thematic analysis can be undertaken within different ontological and epistemological positions and a good thematic analysis needs to state what these are (Braun & Clarke, 2006). Like study two, an interpretivist position was taken in which the themes established acknowledge the analysts role within the interpretation of the text. Boyatzis (1998) suggests that there are two levels of thematic identification in a broad approach to thematic analysis; a semantic or

interpretive level. The analysis was undertaken at an interpretive level, in which the analysis goes past description. Broader assumptions, structures and meanings are theorized and discussed as underpinning the themes (Boyatzis, 1998). It was perceived to be important to identify themes at an interpretive and inductive level in considering the wider thesis, as this could offer deeper contributions in the synthesis of the findings from the three studies.

Braun & Clarke (2006) outline six stages to thematic analysis which were used to guide the analysis of the focus groups: These can be seen in table 6.2.6.

Table 6.2.6 Phases of thematic analysis (Braun & Clarke, 2006, p.87)

Phase	Description of the process
1. Familiarize yourself with your data	Transcribing data, reading and re-reading, noting down initial ideas
2. Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code
3. Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme
4. Reviewing the themes	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of analysis.
5. Defining and naming themes	Ongoing analysis to refine the specifics of each theme and the overall story the analysis tells, generating clear definitions and names for each themes
6. Producing the report	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

As policy and the philosophy of services were discussed in the focus groups it was deemed appropriate to discuss these policies and relevant literature together with the findings to provide a robust understanding of the findings.

6.3 Findings

The framework which emerged from the analysis outlined four major themes: 'service provision', 'professional interpretation of policy', 'professional personal experiences and beliefs' and finally 'negative experiences'. The outline of these themes can be seen in figure 6.3

- 6.3.1 Service provision
- 6.3.2 Professional interpretation of policy
 - 6.3.2.1 Social inclusion and normality
 - Gender
 - 6.3.2.2 Socially inclusive services
- 6.3.3 Professional personal experiences and beliefs
 - 6.3.3.1 Professional beliefs about benefits
 - The self
 - Meaning
 - 6.3.3.2 Conflict
 - 6.3.3.3 Motivation
 - 6.3.3.4 Medication
- 6.3.4 Negative experiences

Figure 6.3 Themes for study three

These themes highlighted that PA was an activity which was provided by the Trust. The extent of this provision and the types of PA offered were discussed in the first theme 'service provision', which is quite descriptive but is deemed important to provide a backdrop for the themes which follow. Through the discussion of PA provision, it emerged that PA was an activity which was chosen to be offered to SUs by the professionals in these focus groups. It was not something which was perceived to be enforced through policy and was not set as an objective which SUs had to achieve. Therefore, it appeared that the provision of PA was driven by the professionals; it was 'bottom-up'. This discussion of the 'bottom-up' provision of PA was woven throughout the themes and was deemed to be the foundations in which the framework of themes was built.

The theme: 'Professional interpretation of policy' discussed how knowledge of current policy enabled and encouraged professionals to implement PA although there was no 'top-down' directive. Similarly, the professionals own experiences and beliefs of PA and the experiences which they have witnessed from SUs appeared to be paramount in the promotion of PA. This was explored in the theme: 'Professional experiences and beliefs'. Personal professional preferences

and practical implications, such as availability of facilities appeared to dominate the implementation of PA. This appeared to result in an ad-hoc provision of PA; there were examples of enduring and consistent PA groups, those which were provided inconsistently, one-off sessions and examples of occasions where professionals were prevented from introducing PA in the manner which they perceived to be ideal. Why and how these services were enabled, provided inconsistently or prevented were discussed throughout the themes.

The professionals also described occasions when PA was deemed to be a negative experience. This is explored in the final theme: 'Negative experiences'. Although these were limited, this discussion highlighted where caution was perceived to be required.

6.3.1 Service provision

The most commonly discussed activity provided by professionals was football groups. Whilst some of these were reported to be set up by specific mental health teams, there was also a national tournament named the Good Mood League. This was funded by the Positive Mental Attitude (PMA) Sports Foundation which aims to re-engage people with mental health problems back into society through sport (mainly football). This tournament was held five times a year and involved football teams from across the Trust, set up by different services to meet and play against each other. This tournament was mentioned by members of each focus group, however not all of the participants in each group had heard of it. Football groups in mental health services appear to be increasing both nationally and internationally (Pringle, 2009). For instance, as well as the PMA, Evans et al (2008) describes how the Care Standards Improvement Programme Department of the Department of Health has collaborated with the Football Association (FA). They organise a football league in the North West of England for people with mental health problems. This currently consists of 30 teams and 200 SUs. In addition to these leagues, a number of assertive outreach teams are forming their own football teams and play against local opposition (Pringle, 2009; Darongkamas et al, 2011). Football leagues for people with mental health problems extend to Europe where there is an annual European cup organised by the European Association for Sport and Social Inclusion.

John (OT) described a sports group, which he set up and organised. This was located at a sports centre, operated once a week and consisted of a variety of sports. Whilst the majority of people who attended played football, there was also the option for SUs to play badminton, squash and to go swimming.

A walking group was another service described by John as being provided consistently each week, however a lot of the other PA groups described appeared to be activities provided as a one off or were not consistently run. These included yoga, pilates, ice-skating and allotment groups. It was not always clear why some of these groups were initially introduced and why they have only operated sporadically or ceased to exist in some localities, for instance Sally stated:

We started an allotment group which has gone a little bit off the wayside but we're hoping to get it going again (Sally)

The reason for this inconsistency could be as a result of a number of factors, such as availability of facilities, funding implications and lack of time. These are explored in more depth later in the theme '*professional personal experiences and beliefs*'. However, this inconsistency could be detrimental for the SUs as it reduced their options for participation. The following discussion from focus group one highlighted how removing the choice of PA could be perceived to be detrimental:

John (OT): One of the things that used to always annoy me and still does is things in the mental health service are never consistent, the job, the church, so the group [PA group] no matter will stay unless it was Christmas or Easter or a bank holiday

Tom (Professional Lead): It's about commitment and value and

John: Yeah and they always turn up, always

Lead Researcher: Is there an expectation that clients turn up?

John: We never actually said to anybody that you've got to turn up what we've said is we're here it's wednesday,

Lead Researcher: It's a choice thing

John: That was implicit

Tom: You're supporting people in making that choice often in mental health services the only thing, is that people are legally able to make choices and still feel like the decisions about what's happened to people are imposed on them so this is something which the people can control as well (Focus group one)

This inferred that service inconsistencies could impinge on service development and could impact on the SUs' utilisation of these services; if services are inconsistent, users of these services could stop attending. In addition, this inconsistency could be detrimental to the SUs in which routine is suggested to be important to their QoL and recovery (Young and Ensing, 1999). If the service is inconsistently provided, on the weeks that it does not take place the choice of attending is taken away from the SU. The professionals highlighted the importance of encouraging autonomous behaviour in their SUs where often decisions over their life are taken out of their control and placed into the hands of the law. The reason Tom and John supported SUs in their decision making was not clear. It could be because it was something which they believed needed to be enhanced as a result of their own experience with SUs or through knowledge of recent policy and literature which also supports autonomy growth (DH, 2011b). What was clear was that the professionals' views were consistent with current recovery literature and policy. This quote also demonstrated John's determination to keep the group running irrespective of the circumstances which suggested that individual staff enthusiasm and commitment is imperative to the continued running of such services. This is discussed further in the theme: 'Professional personal experiences and beliefs'.

In addition to group activities being provided, some of the participants described how they undertook individual PA sessions if a SU requested that they would like to do more PA. For instance Richard (STR) described:

I've done all kinds of different sports with people, from walking, gym, running, swimming....I'm up for most things I have been asked...I have been approached to do canoeing before but I turned that down, cos it's something that I didn't fancy but he found something else to do (Richard).

This quote outlined what kind of individual PA was able to be undertaken at a SUs' request, but also highlighted that it was ultimately the professionals' decision, rather than the SUs' if the activity was undertaken.

These types of individual activity were more frequently discussed by STR workers. However, even those who held different roles within the Trust were aware of PA services which they could refer people. Kevin, (Psychiatrist) described a non-statutory PA service which was specifically for people with SMI. If SUs were referred to this service they received individualised support from a fitness expert to aid them in becoming more active. However, it appeared that this service was not routinely offered and was usually only discussed with SUs if they expressed an interest in undertaking some sort of PA. This could be as a result of PA not being viewed as an essential part of care as it was not something which was defined in their care plan:

Lead Researcher: So presumably therefore the physical activity is an important part of the care plan is it?

Sally: It is, well if it's something that's identified, I mean we can't just force exercise on people but if it's been identified then we'll look into it

Terry: Obviously there isn't part of the care plan that says physical activity but it just comes under the general we should encourage them to join in activities, so it's not structured

Sally: No I don't put in the care plan, only if people identify (focus group two).

This suggested that PA was not seen as a priority for care and was only discussed

if the SUs identified it themselves. However, professionals in these focus groups demonstrated a good knowledge of PA which was undertaken in their team or Trust.

6.3.2 Professional interpretation of policy

As aforementioned, in section 1.6 there are currently no policy or guidelines which explicitly recommend PA for people with psychosis. This was reflected in the response from the professionals when asked about PA policy in mental health. They could not identify any specific policy encouraging PA. However, they did identify policy and documents which justified implementing PA services and recommending it to SUs.

Participants in both focus groups were asked the question about specific policy and this was the response from focus group one:

Kevin (Psychiatrist): There's quite a lot on physical health monitoring, but I don't think it goes as far as to be prescriptive about it saying that mental health services should do that but it feels as though it's a natural follow on, they're finding that people are overweight and at risk of coronary heart disease the obvious thing, well one obvious thing to advise is exercise so getting people in touch with that whether that's provided within the mental health service or not is a natural follow on I think really, but it's not directly stated

Tom (Professional Lead): The latest new horizons document told us about well-being you know and that would fit in with the concept of well-being through physical exercise and reducing the problem for other health problems with healthy living (focus group one).

As is evident from these responses PA was not explicitly recommended, however it suitably fits within the framework defined in these documents. Also of interest were the professionals who described these policies and documents and which documents they recollected. Although the two guidance documents recalled both encompassed PA, they offer different angles in which PA could be encouraged.

Kevin referred to the physical health monitoring and how PA should be used to combat some of these problems. The recommendations for physical health monitoring can be viewed in the DH document: 'Choosing Health: Supporting the Physical Health Needs of People With Severe Mental Illness' (2006) and also within NICE (2009) guidelines for Schizophrenia and Bipolar Disorder (NICE, 2006). As the psychiatrist prescribed antipsychotic medication, I was not surprised that he recalled policy on physical health considering the mounting evidence that antipsychotic medicine can cause weight gain. A recent systematic review by Foley & Morley (2011) found that there was an increase of 6kg in weight in people who had been taking antipsychotic medication for 6-8 weeks. In addition this was associated with unhealthy cardiometabolic changes. Therefore for those with knowledge of medications, I would hope to see an understanding of policy which acknowledged the side effects of antipsychotic medication. What was encouraging to see was that Kevin acknowledged this and encouraged and referred people to PA professionals. This stands in contrast to a comment made about the Foley & Morley review in an editorial in the Lancet, which stated:

In any other scenario, the responsible physician's response would be to seek an alternative. However, for mental health professionals, the mainstay of treatment for psychotic illness is - as it has been for over half a century - antipsychotic medication (Tiihonen et al, 2011, p. 611)

Kevin did not comment on the use of medication and weight gain, but he supported an alternative or at least a combined approach. Kevin, of course was only one representative of the psychiatrist's profession. From the many psychiatrists which I met during my data collection phase, he was by far the one who was most enthused by my research and demonstrated that he was interested in both the physical health and mental health of SUs.

The physical health monitoring mentioned by Kevin was dominated by a biomedical viewpoint as he described it as a method of treating obesity and heart disease; i.e. physical activity for physical health. This was perhaps because of the years of training and continued professional development in psychiatry which is

historically dominated by a biomedical approach. It was therefore perceived that Kevin viewed PA as a treatment for physical health and antipsychotic medication as a treatment for mental health. It is as though he perceived the mind and body to be distinct entities.

This differed from Tom who was a Professional Lead, with an emphasis on psychosocial aspects of care. The document he recalled was more aligned with the recovery approach as he outlined how PA could be beneficial for well-being. He referred to the New Horizons document which was superseded by the No Health without Mental Health document (DH, 2011b). Tom's professional title suggested that he was less concerned with the medical treatment of mental health and was more interested in helping SUs through therapies such as CBT and family interventions. These interventions focus on developing skills to cope with their psychosis. Tom's role may explain why his focus was on well-being, rather than physical health. In addition, on a number of occasions throughout the focus group, he suggested that his goal as a professional was to enhance the QoL of people with psychosis. This was not necessarily outlined as something which had been taught in his capacity as a professional lead, but something in which he believed through the experience he had gained by working with people with psychosis. It was acknowledged that these professionals cannot solely be defined from their professional titles and each holds their own views and beliefs. However, it was of interest that they retrieved different policies and perspectives of how PA could and should be encouraged. Nevertheless, the same outcome was interpreted from the policy; PA should be supported.

6.3.2.1 Social inclusion and normalisation

In addition to the documents discussed above there were two concepts constantly referred to in both focus groups. These were social inclusion and normalisation. These concepts appeared to be driven from the top and were terms which all of the participants used comfortably, suggesting that they were embedded in the professionals' discourse. These concepts were being driven as a result of the report: 'Social Exclusion and Mental Health' (2004) which encourages mental health services to help integrate people into society through normal activities such as employment and jury service.

Tom described how he perceived that PA fits into the concept of normalisation:

It fits a normalising approach to psychosis which is still reasonably new, in that exercise makes us all feel good so why wouldn't it make you feel good because you happen to have psychosis (Tom).

It was as though PA was now allowed to be recommended within this normalisation approach, whereas, before the release of such reports PA may not have been supported. It is worth noting that this report did not outline PA as a normal activity. However, these professionals fully embraced PA as a socially inclusive and normal activity to undertake, Tom explained why:

Psychosis can be isolating, people can retreat into their internal world and it's [PA] a more normal way to connect with other people rather than coming and sitting in a room and talking about how we feel, it might be that they want to do that but it might be that they're not ready for that, it might be that what works for them is to do something normal (Tom).

Tom described how he associated PA as a normal way to connect with people, this view appeared to be held as a result of his own experiences but also through witnessing people with psychosis integrate with each other. Tom also suggested that PA could be a more normal way to connect with people than more traditional forms of mental health services. I perceived this to be because PA was seen as a more normal activity by society than counselling or group therapy is. However, there appeared to be a difference in the perceived normality of PA with respect to gender.

Gender

This difference between men and women in PA was reflected in a discussion of gender in PA services provided by the Mental Health Trust. It was clear from both focus groups that the amount of men attending groups far outweighed women. In addition, the quote above was stated by a male professional who might perceive PA as a more normal activity, especially in the context of this

discussion which was usually held around football. Although PA is now fully accepted by our society for women, there are still differences in participation rates and the type of PA which men and women undertake (Ulseth, 2008). According to Ulseth (2008) men are more likely to participate in sport which is group orientated and are motivated by pleasure, social factors and achievement. Women are more likely to attend fitness classes and are motivated to participate because of fitness, mental recreation and appearance. Therefore, within a social inclusion approach, PA for women may not be perceived to be beneficial if it is not seen as being social. A recent report on sport participation from the Active People Survey (Sport England, 2010) stated that gender impacts upon the frequency of participation in 8 out of 11 sports investigated (football, athletics, rugby league, cycling, badminton, golf, squash and cricket). Male participation was reported to be higher in these eight sports; however, there was no difference for swimming, tennis and rugby union. The fact that only these 11 sports were investigated outlines the cultural bias towards male oriented sports. For instance sports such as netball and exercise classes were not even considered in this report. Upon reflection of this literature, it would seem that the provision of PA by the Trust is based upon a male dominated orientation of PA, with football being the most frequently offered.

Nevertheless, there had been attempts to provide more female friendly PA, such as dance and salsa classes. In addition, 'female only' swimming had been provided at a flexible and convenient time to allow for SUs to arrange childcare. The feedback from both focus groups was that a steady amount of women would attend but only small numbers of three or four, compared to 20 males at football groups. Therefore these groups were often stopped because of perceived low attendance or sometimes because a female professional was not available to continue the classes. Therefore female orientated sports were not consistently provided.

When I asked participants why there appeared to be a difference in the amount of males and females who attended the services. One participant stated:

I think it's [male dominance in PA participation] biased, because

we're all males and my client base is all males so I don't have much involvement with female clients (Richard)

Also of interest was that out of the 10 participants who volunteered to take part in the focus groups, only two were women (one of which was a placement student). Sally offered the following explanation as to why she believed more males attended services provided by the Trust:

I think probably young lads are more keen...some of the women I work with are sort of happy to go to the gym but need a bit of motivating but I guess that's like I need a little bit of motivating to go to the gym but some of the guys are more keen to go and play football and get out and go to the gym (Sally).

According to Sally males were more highly motivated to engage, however, she appeared to see that all the women she worked with were like her, sort of motivated. Therefore, although she believed in the benefits of PA for social inclusion, she may present PA in a more enthusiastic manner to male SUs.

John noticed a difference in the behaviour of male and female SUs who attended the sports group which he organised:

What we also found from the women that attended they prefer to meet early and have a cup of coffee or a chat and sometimes they'd stay a bit longer and have a chat so at that particular time we didn't have any female therapists working with us so it was down to the support workers to keep that going (John).

This difference in PA behaviour suggested that PA can still be used to enhance social engagement in women but this may need to be delivered in a different mode to male PA. This demonstrated that the women who did attend used PA to integrate and communicate with others but this might be outside of the actual PA behaviour. However, men used PA to communicate during the activity, often to feel that they belong:

It [PA] can open up people in a certain way to make them feel

accepted, they have a sense of belonging as well and people find that it's not just the actual participating in the actual sport because I know one time in particular he didn't like football but he comes along because he feels part of that group (Richard).

It appeared that for this particular SU, being accepted in a group was extremely important. This provided him with enough incentive to attend even though he did not like football. It was difficult to imagine another activity in which people, especially men in this circumstance would come together to be in a group. My mind turned to music and I thought that perhaps being a member of a band or choir might provide similar feelings. However, football was perhaps seen as a more normal activity and group to belong to because it was described as just 'having a kick-around', something which most men have undertaken at some level previously. In addition, the 'banter' associated with playing football was outlined by one of the participants and perceived to be beneficial for social engagement. Carter-Morris & Faulkner (2003) found that football in people with psychosis entices people out of their house and once at the football location 'the banter' helped to integrate the SUs and promoted a sense of normality. This banter is unlike other sorts of communication and one which is associated with males, especially in a sporting environment. It is one which is light-hearted, does not involve discussing emotions, their illness or anything else which is going on in their life. It is just about having a laugh, being normal, having a connection, albeit a superficial connection. This did not matter, it appeared that it was this connection through the medium of football and the banter it brought that enabled SUs to feel that they belong, as perceived by the professional.

It was difficult to draw conclusions about male and female participation in PA and further discussion will ensue in chapter seven, where a synthesis of all three studies is undertaken. However, it appeared that male orientated PA was more frequently provided and more positively promoted. However, PA can aid in social inclusion for both males and females.

6.3.2.2 Social inclusive services

Although participants appeared to agree on PA (especially football) as a normal and socially inclusive activity, there was debate about the extent to which the PA provided was able to be perceived as inclusive. Various views on what it meant to be inclusive were also held.

It emerged that one of the principal barriers to PA outlined by the professionals was lack of transport. Tom explained why this was the case for people with psychosis:

It [psychosis] can rob people of an income, so all of sudden you don't have a car, you know it's bit of a battle to get three buses to the place why you might happen to want to go, a gentleman I'm working with who's just about to have his license revoked, which means that he will not be able to get to the gym (Tom).

This quote demonstrated the difficulty for some people to be able to get to the gym where a lot of the services were provided. Providing transport for SUs to attend PA services illuminated differences in opinions on creating inclusive activities. For instance, when John set up the sports group described previously, he thought that it was important for social inclusion and engagement for SUs to find their own transport to the group. He acknowledged that this was a big barrier for people, but believed this was something which could and should be overcome. He was using PA to force other integrative behaviours. The following is an example dialogue he would have with people who attended the sports group:

Even just getting there because that is one of the barriers for a lot of people is 'well how do I get there?' 'well you get on the bus' 'well how do I get on the bus?' 'I haven't been on a bus for 12 years' 'well we'll start by getting on a bus then' so some people which is really interesting just setting up a sports group which started off at 2 they were setting off at 11.30 (John).

This quote outlined two intertwining factors for me: 1) the importance of this particular sports group for the SUs who attended and 2) the wider implications of

PA on social inclusion. It highlighted that the sports group was of significant importance to them as they were willing to attempt to overcome some of their other major challenges. This demonstrated that they were keen to relearn basic daily tasks which they had been unable to use for many years. It was not to say that these basic skills had not been attempted to be reintroduced earlier by either themselves or professionals. According to John, this was only successful for some SUs when they had something which they really wanted to do at the other end of their journey. This was a big achievement for the SUs before they had even undertaken the PA, which was perceived to enhance empowerment. However, what was unknown was how many people did not attend because they did not perceive that it was feasible for them to get on the bus. Other participants did comment on this, for instance James (who was in a different focus group to John) stated:

Some people don't manage to do things, once they're there they enjoy it, but actually saying you've got to get from a to b, you can make your own way it doesn't happen, so therefore there is a knock-on effect. If you go and get somebody they will go enjoy it, maybe in time...(James).

James highlighted how providing transport was very beneficial for SUs to engage in PA. Although it was not stated, it was implied that if transport was not provided they were excluding SUs from the option of being active. It appeared that the decision to provide transport or not was down to the specific beliefs of certain professionals. This introduced an ethical dilemma about the provision of PA for people with psychosis. Whilst John provided evidence that encouraging SUs to find their own transport was possible and in fact can enhance their well-being, others expressed concern that not providing transport was exclusive. However, providing transport brought up another issue; that of staffing:

We cover the whole district, so unless we can pick people up and take them which is then extra staffing to do it then people struggle
(Sally)

This may provide another reason why transport should not be provided. Funding

of these services was also a contentious issue, so the more money which could be perhaps saved on transport, the more money could be available for the actual PA.

The focus groups with professionals were conducted at a time of financial restraints in the NHS. Therefore the professionals were not hopeful that any more funding would become available for them to spend on PA services. Kevin believed that PA might become something which was referred to other sectors and James provided an example of where services had already been cut as a result of lack of funding for professionals and services:

At one point there was a walking group on the Friday, the football on a Thursday and the gym group...now it's just the football isn't it, because we haven't got the capacity as workers which is rubbish (James).

However, Terry provided a strong argument for the implementation of PA, with respect to the cost of undertaking PA and the return in benefits:

For £600 you could get 50 people a month coming together and I don't know where you would get 50 SUs in any other thing for such a low return of cost with such a huge benefit, but without funding you're struggling to get it up and running (Terry).

Another discussion on the subject of funding, social inclusion and normality was that of the location of the PA groups. There appeared to be consensus that PA should not be at mental health facilities, however, this was not always practical because of funding implications. This appeared to differ depending upon the local authority in which the services were provided. Although the participants who took part in the focus groups worked for the same Trust, their places of work were in different localities, with two different local authorities. This seemed to be an important factor when searching for facilities to provide PA. One local authority offered subsidised use of their sports centres, whereas the other authority refused to do this. Therefore, some PA services had to be undertaken in facilities funded by the mental health trust as it was cheaper. This included activities being conducted in an inpatient hospital:

There's no facilities round here ... that don't charge quite a lot...we do like the pilates, we hired out the hospital because it didn't have the cost implication and then we paid for the actual instructors to come in and do it, out of our potential inclusion budget because people just couldn't afford to do that sort of activity (Sally).

This demonstrated some of the compromises which professionals felt they had to make. If they had the funding available and support from the local authority they could carry out PA services in a facility which was perceived to be more beneficial for the social inclusion of their SUs. However, this created another discussion, should SUs pay for themselves to undertake PA? Sally suggested above that SUs can not afford to pay for their own PA. However, when John started the sports group he decided that SUs should pay, albeit at a subsidised price:

I was aware that we didn't want to sort of encourage some sort of institutionalisation, so we took a very brave step and said that people had to pay for it themselves which is always a big issue, when you're on a limited budget (John).

Interestingly, John used the word institutionalisation, suggesting that he was trying to avoid SUs feeling that they belonged in a mental health institute. Using the word institutionalisation brought with it a number of negative connotations. Instantly I saw images of people walking around big old cold buildings like zombies, or being isolated in cells wearing straight-jackets with no autonomy over their life and treatment. This image has of course been reinforced through films such as 'One Flew Over The Cuckoo's Nest' and also through reading and seeing pictures of treatments provided for people in the early 20th Century. As John used the word institutionalisation, it supported his argument that services need to replicate 'normal' activity as much as possible. It was perceived that this would enable SUs to feel that they were part of 'normal' society and not segregated by their psychosis. John achieved this partly by using the local council sport centre facilities which was a non-institutionalised venue and also asking SUs to pay for themselves. Raine et al (2002) found that SUs preferred to exercise in facilities which were in the community and not associated with mental health facilities, this

included not using professionals associated with mental health services to run the sessions. The group John described was solely for people with SMI, mainly psychosis and it could be argued that this was still a sort of institution. This was questioned by some participants, including John himself:

The problem is when they go along to clubs they go along once and will probably never come again because they are purely for people that have mental health problems and they don't want to feel that they have the title (John).

However, the literature suggests that people with mental health problems may prefer conducting PA with others who have a similar diagnosis as they feel safe; free from prejudice (Priest, 2007). It became evident that stigma and prejudice was still something which SUs experienced:

There was someone who went to ramblers club and after a few weeks felt comfortable enough to say I've got a diagnosis of schizophrenia, after that his parents got a phone call to say that we think it would be best if he didn't come any more and it's that type of barrier fuelled by the Daily Mail that is still heart breaking (Tom).

It was clear to see why this could be a significant barrier to PA for people in this population. Although this sort of experience should not discourage people from attending mainstream activities, this experience could be extremely detrimental to the SU. This reflected a quandary about which setting PA should be promoted. Should professionals continue to implement specific groups solely for people with mental health problems? Or more specifically for people with psychosis? Or should they be encouraging them to go along to mainstream activities? This is something which will be discussed further in chapter seven, in the synthesis of all of the studies.

All of this debate pointed to differences in the interpretation of a normalisation and social inclusive approach, including an ethical debate about whether SUs should fund themselves and find their own transport or if it should be provided for them.

6.3.3 Professional experiences and beliefs of PA

The participant's personal experiences and beliefs in PA appeared to be paramount to the promotion of PA for individual clients but also for the inclusion of PA groups across a range of services. For some of the participants they used PA to help control their own mental health and it was because of these experiences that they believed it would work for their clients:

It was kind of my own experience and I thought it might be useful to the clients, my own experiences of my own mental health, you know it can make you feel better, there is something about being involved in sporting activity, they say it's feel good endorphins in your brain and I think there's a lot of truth in that (Richard).

Richard found it difficult to explain why he felt that PA was beneficial for mental health and perhaps because of this difficulty he associated feeling better with a physical release of endorphins. As though, because he cannot explain it, he felt that it must be something which was released which he was not aware of – or he has no control of. Although he did not appear to know if the release of endorphins definitely occurred, he believed there to be truth in this and he later went on to state how SUs shared this belief. Sharing this physiological belief with his SUs could encourage them to engage in PA. A discussion around chemical release in SUs can be seen in section 5.4.3.2. Imparting these beliefs onto his SUs may alter their perceptions of PA. This might not be detrimental to them but the beliefs he holds may not be accurate, and this was one of the perceived problems when there was little top down instruction about PA.

It was not only the personal experiences of the participants that encouraged them to promote PA for SUs but it was also their personal desire to change the experiences of mental health services for their SUs. For instance, John described how he noticed that in the mid 1990's young SUs were not engaging in the existing services. He personally decided to do something about this and this was when he implemented a sports group for young people with psychosis. He set it up after a discussion with SUs about what they enjoyed doing, demonstrating

real engagement in his professional role and his desire to enhance the QoL of SUs. This was well before any of the recent policy about psychosocial interventions, well-being and social inclusion was released. Sport emerged as a common theme from these discussions, and so, along with another OT he undertook negotiations with the local sports centre and it was agreed that the Trust could use the facility at a subsidised price one afternoon a week. This was set-up with very little guidance from managers, although he was given permission to run the group. He referred to the group as being very loose, with no referral criteria. However, crucially most of the input about how the group should be run came from the SUs. This sports group was very successful and still continued at the time of the interviews. However, this was as a result of John's continued involvement in the group along with other professionals who were very interested in the group and sport itself. It became very clear to me throughout the focus groups that without professional's personal interest in these groups, they would cease to exist:

One individual member of staff can make a big difference, if they've got the energy and the enthusiasm (Tom).

These discussions demonstrated that these services were not enforced from policy, they emerged from evidence of practice and the professionals and SUs working together. Often, it appeared that carrying out PA with or for SUs was perceived to be undertaken outside of their participant's official role. For others, it was perceived to be something which could be undertaken in their position, but it was something that could easily be left out due to everything else they needed to squeeze in to their day-to-day requirements. It was not something which they have been asked or enforced to undertake and they do it out of their perceived own goodwill:

At the moment, any sort of sport and activity in this team is by the goodwill of people doing it, either outside of their own remit of their job or, say well I'm going to fit an hour in (Terry)

Part of the reason they made room for PA in their regime was because of the

perceived benefits for the SU. The social inclusion aspect of PA has already been discussed, but other perceived benefits emerged.

6.3.3.1 Perceived benefits

The participants described how they were driven to provide PA, because of the benefits which they have witnessed when SUs participate in PA:

There's so many benefits to it that that's what drives us to do it
(Sally).

These benefits appeared to have been what have been personally witnessed. None of the participants demonstrated any knowledge of literature or any training which reinforced their views, nor was there any discussion of any service evaluation which had been undertaken on the existing services. The impression I got from the participants of the focus groups was that they did not particularly want their services evaluated and formalised, they knew that they worked and they appreciated that there was not a lot of paper work for them or the SU to complete. This begs the question, how would those new to the profession know about PA? It appeared that they would only witness these perceived benefits of PA, if the locations in which they had undertaken placements featured PA. In the second focus group, a student nurse was present, she said very little during the focus group but I did ask her at the end what her understanding about PA was from her training and this was her response:

It's been mentioned, but there isn't really a lot focussed around physical activity within lessons.... I haven't really seen a lot of physical activity, they do mention it within your lessons that it can help but there's no real evidence of it backing it up (Lisa).

This reinforced that the benefits which were discussed were not what the participants have been formally taught but it was what they have learnt through vicarious experiences.

The self

One of the benefits discussed amongst the participants was how PA appeared to

enhance a sense of self:

It's [PA] not just about the connection with physical health, as well it's the connection with the old sense of yourself and how it makes you feel, your self-esteem and your physical and self-identity and everything that kind of comes along with that (Richard)

Richard especially highlighted that PA should not only be promoted through the physical health benefits but the benefits to a sense of self. It was not clear what Richard meant by a connection of the old sense of self, whether this was an old part of an active self or if this was referring to the self without psychosis. Either way, it was deemed important that PA aided in this connection. No other participants added to what Richard suggested, however there was discussion in the other focus group about how PA can enhance self-esteem - a concept implicit in a definition of self (Fox & Corbin, 1989). For instance, Lee described how introducing SUs to snowboarding enhanced their self-esteem:

We had a snowboarding lessons with about six or seven SUs which was really good for some of them they were so confident, just trying it was really beneficial for them (Lee).

Although Lee did not say how he knew that the snowboarding provided them with confidence, I perceived that Lee had interpreted this through the SUs' behaviour and body language. Sally took a discussion of confidence one step further and recalled:

It [PA] totally brought them out of their shell, they're wanting to do other things and they've got the confidence to go to college now and you know it's totally moved them in a different direction to what they were before and that drives you (Sally)

Sally's words 'out of their shell' presented an image in my mind of a tortoise slowly but surely emerging from their protective case. As if the SU had been in their shell protecting themselves from the external world. I perceived Sally's description to mean that PA helped the SU to emerge from this shell as it provided them with

something of sufficient value to surface into the world. Taking part enhanced their confidence in their ability to be involved in the external world, free from their shell, as if they once again believed in themselves. This was a stepping stone to a new future for the SU as perceived by the professional.

Meaning

Richard perceived PA as a meaningful tool as it provided SUs with a meaningful occupation to enhance the way that they feel:

It's about occupation, occupying somebody in a meaningful way, making somebody feel good in a natural way rather than having to use pills... (Richard).

For me, this message from Richard is clearly something which he himself truly believed in and therefore could be quite convincing if attempting to promote this message to SUs. For Richard, PA provided meaning for the SUs because they were doing something positive with their time. He compared this to SUs taking pills and how spending time being active was perceived to be a more meaningful way to enhance their affective state.

During the focus groups I was very impressed to hear about the positive attitude towards PA, especially as previous literature in the field suggested that mental health professionals views of PA were not aligned with treating the whole person (e.g. Faulkner & Biddle, 2001, Faulkner & Biddle, 2002). However, most of this research was undertaken with counsellors and psychologists, which unfortunately were not present in the current study. If a wider variety of professionals had been obtained for this study a very different perspective of PA may have been found.

Providing meaningful occupation for SUs is encouraged in a recovery approach and this appears to be filtering down to front-line staff, although none of the participants used the term 'recovery'. This should perhaps be expected as the roles of an OT and STR are to promote meaningful occupation. However, this meaningful behaviour should be perceived to be meaningful by the SU and not just the professional. It appeared, in this analysis, that what the professionals

perceived to be meaningful for their clients is what was more frequently encouraged in mental health services. As it seemed that the professionals in these focus groups believed that PA provided a meaningful occupation, I wondered about the many people with psychosis who may not believe PA could be a meaningful way to spend their time. I considered how they would or do feel when these messages are given to them by those who believe in them. I also considered what the outcome would be if PA was not discussed because a professional does not believe in it, or how this subject may be broached by a professional who does not believe in PA as a meaningful activity. I am especially aware of the female population who do not appear to be attending services provided by the Trust. Although it was not clear if this was because the SUs did not perceive PA to be meaningful or if it was that professionals did not discuss the option of PA as they would with men, or because what was offered was male orientated.

I also ruminate about other colleagues of the participants who may not believe in PA as the participants in this focus group do. The beliefs of these professionals were unknown and future research could be undertaken in those who are less enthusiastic. Although it is acknowledged that these professionals are less likely to want to participate in this type of study, they may be willing to complete surveys which could evolve in future research.

Nevertheless, no matter what the views of the professionals were, it seemed that these were filtered through to SUs and this could have an impact upon their QoL. It could be that some SUs would like to try PA, but it is not something which is suggested to them by professionals as it is not something in which they believe. On the other hand, some may feel pressure if they have a professional who is passionate about PA.

These differences in beliefs between professionals alluded to above can cause tension in the workplace and are discussed in the next theme.

6.3.3.2 Conflict

It appeared that professionals believed in the benefits of PA for their SUs and would prefer to spend time accompanying people to PA sessions rather than

undertaking other activities. However, this created tension for them in their own time management as well as with other professionals:

I guess if I take somebody to the gym it takes two hours for everything, getting them ready and everything, so in terms of contact I could see two or three people on a one to one basis within that time and big brother is watching us unfortunately and checking how many people we are seeing, and you've got to make sure that you tick this box and planning you've got to do this and there's loads of stuff paper wise that you have to do which takes up time and stops you from doing the other stuff that you want to be doing, and would like to be doing (Sally).

Interestingly, Sally referred to 'big brother' although she did not overtly affirm who this was, it seemed that this was the organisation that she worked for, who watched their employees every move. John found a similar tension with the amount of time it took undertaking PA with SUs. Again where the tension emerged from was not clear, it was as though there was something in the air. It was like there was something unsaid, but something ingrained in working in a mental health service; PA is not something which is assessed and therefore why would professionals spend time doing it? John explained why:

There's a definite tension...it's not recognised that actually spending an hour with somebody in the gym is far more therapeutic than going to pop in every 3 days for 15 minutes (John).

It became clear in later discussion that John was referring to fellow professionals as he referred to comments made by others as he goes to undertake some PA:

People have said aw you're just going out to have a bit of fun aren't you and there's all sorts of tensions (John).

There was some frustration in John's voice as he made this comment. It seemed that because he was undertaking PA this was seen as fun and not part of his job. I can see why that was frustrating for John for a number of reasons. He has

spent a lot of time and energy in setting up groups and PA sessions which highlighted the amount of hard work which goes into it. Also, having visited sessions which John organised I recognised that on the day a lot of hard work goes into facilitating these. Although it may be one of the more enjoyable elements of John's work, the main reason that he was doing it was because he could see the benefits for the SUs. This was perhaps something which some of the other colleagues had not experienced themselves. Another problem could be the approach to psychosis some professionals believe in or adhere to:

If people have more of a disease model in psychosis then their expected response would be a medical response then the role of the staff in the team that you're monitoring would be a response to medical intervention (Tom).

The approach people adopted appeared to partly depend on the team manager and people around them. One participant described how the team manager had a big impact upon carrying out PA with SUs; he was referring specifically to managers of Community Mental Health Teams:

I have known other team managers who have said you're not qualified to or you're not paid to go and spend a couple of hours with somebody in the gym, you're not paid to do that (Tom)

This discussion highlighted that the professionals who took part in the focus groups do not represent the views of everybody. Whilst it seemed that a recovery approach and its tenets were being implemented it emerged that there was still resistance from those who firmly believe in a biomedical model to treatment. Equally without explicit policy, guidance and a box to tick for PA, it appeared to be difficult for willing professionals to fulfil their wishes and implement PA.

Some professionals highlighted the amount of time it took to run PA sessions. It was not only the session which took time, but the organisation of the session. This can include some of the issues highlighted above such as trying to find facilities, organising transport and finding funding. The professionals described how time was precious and they have competing priorities for their time, this

impacted upon their desire to organise PA sessions, but they did enjoy it if they were given the opportunity:

James: I think it's positive when you're actually given time to do it and space to do it definitely, I definitely look forward to a sporting event

Terry: Yeah I do but I think is when you know that you're not compromising other parts of your job, because sometimes you think I'm doing this but I've got so many other things to do...obviously to facilitate sport or anything you've got to be on top and you've got to enjoy it otherwise they won't enjoy it but I love it, I love it, but you're doing it for the clients (focus group two).

This discussion of time restraints led a member of each focus group to suggest that it would be beneficial to create a role in the trust who organised PA activities and services. It was suggested that this person would not only organise but was also an expert in the field so they were able to coach a range of activities:

I think there should be space made or a role somewhere in the trust made to allow to create access to sport that is going round and perhaps trying the sport centres and building connections to get access and getting funding for coaches in different sports to get people to start learning and developing sports (Terry).

This appeared to be a very sensible suggestion. Raine (2002) suggested that both the facilities and facilitators of PA provision for people with psychosis should be an independent person who was not associated with other aspects of their care and this would therefore fit this criteria and be more socially inclusive.

6.3.3.3 Motivation

Although the professionals have described a number of barriers to PA implementation, such as conflict with the other professionals and time constraints, one of the main barriers to PA was the perceived lack of motivation from the SU.

Some of the professionals described how some of their SUs were not active and James associated this with lack of motivation. However, this was not only lack of motivation to undertake PA, but to do anything:

I've got quite a few that aren't active at all, they don't have the motivation to get out and do things, they sleep quite a lot...every time you see them you try and encourage them to go out or go out with them, go for a walk or doing something but it can be quite difficult (James).

This suggested that attending a PA session organised by the Trust was not feasible for some SUs as even undertaking a walk was too challenging. This might depend on illness severity and this was discussed further in chapters five and seven. James did not describe why he thought some SUs lacked motivation, but Sally does. She stated:

Motivation? I think sometimes the medication we put people on as well, lack of confidence, lack of self-esteem (Sally).

Sally did not explicitly state why she associated lack of motivation with the medication and lack of confidence. However, she may have been referring to the side effects of the medications such as weight gain and extrapyramidal side effects (Üçok & Gaebel, 2008). This may explain the reason that she described motivation and medication together. Nevertheless, it was not obvious why she related this to lack of confidence. Kevin speculated that this might be because of weight:

Kevin: I suspect one of the major factors in that is going to be weight isn't it... I'm speculating that here might be a group of people who don't even start exercise because they feel simply too daggy and they haven't got confidence to begin to do it, so they might benefit from very gradual introduction to exercise

Tom: We've got several people who won't go swimming because they've put several stone on (focus group one).

Taking these points into consideration, it became clearer why Sally would claim that they lack confidence. However, there may be many other reasons which were not explored in these focus groups, but are suggested in the literature in section 2.2 and are also considered in chapter seven.

6.3.3.4 Medication

Caution was expressed by some of the participants with respect to vigorous PA, especially if they had been sedentary for a while and also because of the sedative effects of the medication:

If they are on quite high levels of medication their hand-eye coordination is not as good and physical movement is definitely retarded enough so that you can actually see it in terms of moving around, I'm thinking like a squash court, or a badminton court or even table tennis (John).

This is an important consideration to be undertaken when recommending PA for people with psychosis. I was interested to know if this retarded speed hindered any of the SUs' experiences and this question was asked in the focus groups. None of the participants had witnessed any occasions when signs of frustration or anger were evident but they did admit that it was not a discussion that they had undertaken with SUs. As some SUs appeared to struggle with the ability to undertake some forms of PA, some might conclude that vigorous PA and activity with a high cognitive demand should not be recommended. Nevertheless, this should be left to the SUs' discretion to make this decision, and perhaps as Kevin stated in the focus group that PA should be introduced gradually.

6.3.4 Negative experiences

Overwhelmingly, the experiences of PA were described in a positive manner. However, when the participants were asked specifically about any negative experiences, examples did emerge. Nevertheless, these were described as standout occasions with specific examples, whereas when discussing the experiences as a whole these were described as if they were evident across the spectrum of the people which attended PA services and classes. The initial response to this question was for participants to describe physical injuries that

SUs had suffered. I remembered during the focus groups thinking that injury was part of everyday sport whether people have mental health problems or not and I found myself agreeing with one of the participants who stated:

if I decided as a individual to go play football then I go and take those risks I don't think it makes a difference because of mental health, they're physical risks so if you're going to take part then that's gonna happen (Sally).

However, upon analysis, two interesting points regarding injury in this population emerged 1) risk of aggressive tackles and 2) response to injury.

The first was that it was suggested by one participant that there might be an increased risk of injury in football because of 'aggressive tackles' and 'things getting heated' which were claimed to be as a direct result of being unwell. However, Terry, the participant who stated this, also described how steps had been taken to mitigate this problem by having a member of the professional team play on the team who sought to temper any aggression. As I am writing this I wonder about how having a professional playing effects the SUs' enjoyment of the game and ponder about if this has an impact upon engagement as this may not be seen as 'normal'. If somebody turned up to play Sunday league football there would not be anyone there to control any aggression (apart from the referee) and to my knowledge aggression occurs at all levels of football with a variety of instigators. However, it could also be viewed that the involvement of the professional promotes inclusion as it removes the barrier of 'them and us'. Examples of this were indeed present in the focus groups, for instance, roles were reversed and the SUs were teaching the professionals how to play:

There was one person who came who was really into badminton and of course me and Mohammed [pseudonym] had never ever played badminton so this particular client taught us how to play (John).

The second point which I found of interest was one of the participants' description of the response to injury that one of the SUs had acquired:

We had a lad playing football and he went down and cracked his head and ended up in A&E, luckily he were quite proud 'cos he got his arm bandaged up and he liked to show it off, but it could have been quite distressing (James).

James highlighted how this had potential to have a detrimental impact upon the SU, but it appeared to have the opposite effect, in fact he was proud. To me this seemed that he was proud of the bandage because it was evidence that he had been undertaking football, something considered normal by society. It also demonstrated that he had undertaken something adequately dangerous to result in injury. This could reflect his masculinity, which may have been under question when he was unwell. I may have only come to this conclusion because of the analysis which I have undertaken with the SUs and I cannot know how he felt because the information is not from the primary source. However, the response to injury is an important point to consider. If the injury had resulted in a more serious injury the SUs' response could have been completely different and could have been more detrimental for people who are deemed to be more mentally fragile.

Another example of a SUs' negative experience was demoralisation felt as a result of constant losing in football:

Out of six matches I think we lost 5 and the feedback we got from one particular player was that he felt quite demoralised and depressed about the experience, and it took him a couple of days to get over it, so in that sense it could be quite detrimental (James).

I was once again left considering if this response would be that different to anyone without psychosis. After deliberation, I perceived that perhaps people without psychosis would be left feeling demoralised but maybe this would not extend to the length of time highlighted by James. In later discussion, it emerged

that although the SU felt demoralised at the time, overall the football had been the impetus for an 'absolute change in his mental health' (Sally). This highlighted how in the short-term, PA has the potential to be detrimental in certain circumstances but in the long-term, it is overwhelmingly positive upon reflection of SUs.

Only one account was provided where PA appeared to have a negative impact upon the SU's psychosis. It seemed that this was not necessarily a result of the PA itself but the stimulating environment for this specific SU:

My SU was in hospital and she just started going to everything and we thought it was quite a positive thing because she wanted to get out, but she got going to a football group and was becoming quite sexually inappropriate around males which were making her more and more elated and then she would become quite confrontational and she ended up in hospital probably longer than she would have done if we'd realised that it were having a negative rather than a positive effect (Sally).

As this was just one example of a negative impact on their psychosis, it appeared that this experience was extremely unlikely. However, this was something which professionals should consider when recommending a sport with mixed gender, but this of course would only be relevant for some SUs. Equally, monitoring SUs who appeared to suddenly start undertaking a lot of PA could also be considered. The stage of a person's illness should be considered prior to recommending PA.

Highlighted above are some examples of where PA can be negative in a person's recovery from psychosis, however, these examples are in the minority with professionals providing many more examples of the benefits of PA.

6.4 Summary

The analysis demonstrated that PA is an occupation provided for people with psychosis. However, the most frequently provided activities were male orientated, especially football. This resulted in many more males attending PA

sessions than females. In addition, other PA services were provided in an ad-hoc fashion, often resulting in one-off sessions and inconsistent provision. This was perceived to be as a result of a 'bottom-up' approach to PA; it was the professionals' choice to implement PA. They chose to do this because of their own experiences and knowledge of the benefits but also through witnessing the positive implications of PA in SUs. One of these key facilitators was the professionals' perception that PA was a normal activity which enhanced social inclusion, but the discussion on this revolved around football. In addition, an ethical discussion ensued about how inclusive PA was for SUs and as there was no guidance from above, there was significant variation in delivery, such as transport provision.

Although the professionals in these focus groups chose to implement PA and perceived it to be beneficial, there was conflict with other colleagues. This alongside lack of funding and time led to professional frustration and once again an ad-hoc provision of PA. If guidelines were available some of these frustrations could be tempered.

However, caution was expressed about a 'top-down' approach to PA delivery:

You wouldn't necessarily want the importance to be that the PCT sets it as a target to say we want so many people to achieve this, and say it's very very important and then it will become over regulated there will be so many restrictions put in, and risk assessments put in, it would stifle it and I think it coming from an upward process that practitioners take more risks and do it in a normal way like just having a kick about but if it becomes a top down one it will just be oh you can't do this you can't do that, fill this form in and it will become target orientated and driven, I don't know how you'd get round this (Terry).

This was an important point outlined by Terry, especially with regards to social inclusion and normality. The participants perceived that PA needed to be seen as normal as possible, so the procedure would be the same as that undertaken outside of mental health services. Therefore, having to complete paperwork

before undertaking PA was viewed as being detrimental to the SU as well as to the professionals themselves. However, ethical debate about how socially inclusive provision is and should be requires further consideration. The production of guidelines about what services should be available, provided by who, who pays for services and transport needs to be outlined. In addition, it is perceived that knowledge of the benefits and risks of PA should be standard for all professionals who work in the community. Further recommendations and implications for practice are discussed in section 7.3.

Chapter 7

Synthesis and Discussion of Findings

This chapter comprises a synthesis and discussion of the findings from the three studies. The aim is to answer the research question of:

1) How does PA relate to QoL in people with psychosis?

The preceding chapters have fulfilled the sub-aims identified in chapters one, two and three and these findings will be integrated to answer the main research question. This chapter also includes limitations of the current research, future research ideas, my reflections and outlines how this thesis contributes to knowledge in the field. This chapter will begin with a discussion of how the findings were integrated.

7.1 Mixed Methods data integration

The integration of findings from qualitative and quantitative strands of a MM study has been reported to be the biggest concern for MM researchers (Bryman, 2007). This was a concern for myself, especially as the findings from the three studies indicated that there were discrepancies. Therefore, careful consideration was given to how the findings would be integrated. There are various ways in which MM findings have been analysed and synthesised which depends upon the type of design implemented (Creswell & Plano Clark, 2007). A concurrent triangulation design was used with the purpose of expanding the breadth and range of research and by complementing the studies with each other (see section 3.4 for further detail). Therefore, the qualitative and quantitative approaches were implemented with equal status to obtain different but complementary data within the thesis.

Whilst there are no set criteria to follow for the MM data synthesis, a process has been suggested by Onwuegbuzie & Teddlie (2003). They propose seven data analysis stages: 1) data reduction, 2) data display, 3) data transformation, 4) data correlation, 5) data consolidation, 6) data comparison and, 7) data integration. Data reduction and data display have already taken place in

chapters four, five and six and are not replicated in this chapter. Data transformation is where either quantitative data is qualited or qualitative data is quantified. Data correlation is the process of correlating the findings after transformation. Transformation and correlation of the data are optional (Onwuegbuzie & Leech, 2006) and therefore I decided not to undertake these stages of the analysis for the following reasons: pragmatism underpinned the thesis to allow for equal representation of the quantitative and qualitative results. Therefore if I transformed one set of the data to conform with another, I would be taking either more of a realist or relativist position (Bazely, 2004) which was not the aim of the thesis. Equally one of the main purposes of a MM approach was expansion and therefore transformation was perceived to be unsuitable as this may reduce the opportunity to expand. Furthermore, after completing the three studies it was evident that there were both similarities and differences across the studies before integration occurred. It was felt that if this data was transformed, it would prevent complementarity where the findings from one study can explain the findings for another study.

Therefore, the stages of analysis outlined in this chapter, consist of: data consolidation (both quantitative and qualitative studies are combined to form new categories); data comparison (comparing data from the qualitative and quantitative studies) and data integration (both quantitative and qualitative data are integrated into a coherent whole). The methods used to enable these three stages are described in more detail in section 7.1.1 and are summarised on table 7.1.1.2. However, data comparison and integration are thoroughly discussed in section 7.2.

Data integration is not always conducted in all MM analysis, implementing this depends upon the type of research question and the purpose of research (Onwuegbuzie & Leech, 2006). As the purpose of the research was to expand, data integration was seen as imperative. O'Caithan (2010) claims that without integration, the knowledge generated is limited and equivalent to that of independent qualitative and quantitative studies, rather than achieving a 'whole greater than the sum of the parts' (Barbour, 1999).

However, there is limited research that a) integrates the data from the different studies (Lewin et al, 2009) and b) describes how integration is conducted (O’Caithan et al, 2010). Nevertheless, methods are emerging in the field and one such method is the use of a ‘convergent coding matrix’ which combines the findings from each of the studies on the same table (Farmer et al, 2006; O’Caithan et al, 2010). Developing a matrix is perceived to also help with data consolidation and comparison. Therefore matrix analysis was the procedure used to synthesise the findings across all three of the studies.

7.1.1 Data matrix

Miles & Hubberman (1994) first suggested that matrices should be used to aid with data integration and comparison by organising various sources of qualitative data into one table. Using these matrices or tables has since been recommended and used to integrate MM research (Erzberger & Kelle, 2003; Lukkarinin, 2005; Wendler, 2001; Teno et al, 1998). Lukkarinen (2005) suggests that the aim of matrix analysis is to find new relationships between results based upon reflection and conclusions. Miles & Hubberman (1994) recommended that these reflections be summarised in the matrix alongside a summary of the findings. See table 7.1.1.2 for the matrix of findings.

7.1.1.2 Method of Matrix analysis

Matrix analysis commenced by displaying all of the findings or inferences from each of the studies into one table (Farmer et al, 2006). An inference is the interpretation of the findings and conclusions and is formed to answer the research question and aims (Tashakkori & Teddlie, 1998), see table 7.1.12 for detail of my inferences and section 7.4.1 for a discussion around quality and inferences. Once these inferences were in place a consideration of where there was agreement, partial agreement, silence (silence is where a theme arises from one set of data, but not another) or dissonance within the findings was reflected upon (Farmer et al, 2006). This reflection included a consideration of the questions posed in figure 3.4.1 (This figure highlighted questions which it was hoped the integration of studies would be able to answer, in order to thoroughly answer the research question) and a consideration of how the studies complemented each other. The aim was then to further explore where and how

these inferences could be best combined and consolidated to answer the research question.

Following this reflection, data consolidation was possible and five new categories were formed. These categories were labelled 'meta-themes' (Farmer et al, 2006), which were seen to represent the grouped inferences from each study. Consolidation was assisted because of familiarity with the data (Lukkarinen, 2005). Nevertheless, these meta-themes were discussed with peers to ensure these were embedded in the data.

Data integration for each meta-theme involved a discussion of meta-inferences, which are an overall explanation and interpretation of the inferences from all of the studies (Tashakkori & Teddlie, 2008). A meta-inference is seen as going beyond what the quantitative and qualitative strands of the thesis can tell us alone; they create a whole which is greater than the sum of the parts (Tashakkori & Teddlie, 2008).

In order to be cognisant of pragmatism, in each of the five meta-themes the quantitative associations of PA and QoL from study one were seen to be the objective external structures (see section 3.3 and 3.4 for further discussion). In order to further our understanding of these structures, (i.e. to answer: how is PA related to QoL?) the qualitative findings of studies two and three helped to expand, explain and elaborate on these. In pragmatism, these structures are seen to be continually evolving (see section 3.3) and are interpreted by the social and cultural experiences of individuals, therefore the phenomenological themes from study two were seen to provide the clearest and most convincing explanation for these structures. The four main themes from study two were woven into the meta-themes and lead much of the discussion to explain these structures.

The meta-themes formed were:

- 1) PA and QoL: 'Being normal', which explores the relationships between PA and PH, PA and MH, and PA and social functioning in relation to 'being normal?';

2) PA and QoL: Intensity, which explores the relationships between the various levels of PA intensity and QoL, using the theme of 'dance as if no-one is watching';

3) PA and QoL: Amount, which looks further into the amount of PA required to be related to QoL and is explored by using the theme 'snapshot of reality';

4) PA and QoL: Theory, which involves a discussion of SDT and other theoretical considerations.

5) PA and QoL: Barriers and facilitators, which is a discussion about implementing PA from a professional perspective and undertaking PA from a SUs' perspective. This integrates a discussion of 'tangled in a web of lethargy and tangled thoughts'. Recommendations are provided within this discussion.

The meta-themes formed a complete version of the matrix which can be seen in table 4.1.1.2. This enabled further data comparison and integration which is discussed thoroughly in section 7.2.

Table 7.1.1.2 Matrix to show the combined findings.

Meta-theme	Study one inferences	Study two inferences	Study three inferences	Researchers reflections
PA & QoL: Being normal	<ul style="list-style-type: none"> • PA is related to PH • PA is not related to MH • PA is related to social functioning. 	<ul style="list-style-type: none"> • 'Being normal' <ul style="list-style-type: none"> - 'Develop a sense of self' - 'social re-integration' 	<ul style="list-style-type: none"> • 'Motivation' • 'Social inclusion and normality' • 'The self' 	<p>All three studies found that PA was associated with PH with studies two and three offering insights about how being perceived as physically normal may explain why this may occur.</p> <p>There were dissimilarities within this meta-theme. PA was found not to be related to MH in study one. However, there were themes from both studies two and three which clearly found that PA was associated with MH. Various explanations are considered, e.g. SF-12 did not measure what was found to enhance MH in studies two and three, i.e. self-development.</p> <p>All three studies highlighted the importance of PA and social functioning. This was explained as engaging in a social world was seen as being 'normal'.</p>
PA & QoL: Intensity of PA	<ul style="list-style-type: none"> • Moderate PA is related to PH • No intensity of PA is related to MH • Walking is related to social functioning 	<ul style="list-style-type: none"> • 'Dance as if no-one is watching' 		<p>The 'dance as if no-one is watching' theme highlights that there might be weak relationships between different intensities of PA because it is not only the intensity of the PA which is important. Factors such as the environment and skill acquisition were also seen as important. Another explanation for the absence of a relationship between intensity of PA and MH was that PA was perceived to only provide short-term relief which was also not captured on the SF-12.</p>

Meta-theme	Study one inferences	Study two inferences	Study three inferences	Researchers reflections
PA and QoL: Amount of PA	<ul style="list-style-type: none"> Meeting PA guidelines was associated with better PH. 	<ul style="list-style-type: none"> 'Snapshot of reality' <ul style="list-style-type: none"> 'Too much PA' 	<ul style="list-style-type: none"> Negative experiences of PA 	Studies two and three were able to expand on the findings in study one. For instance, in study two, for some participants too much PA was seen as detrimental. Examples of negative experiences were also highlighted in study three which did not emerge in study one due to the nature of the data.
PA and QoL: Theory	SDT does not explain relationship between PA and QoL	The relationship between PA and QoL explained through four themes of: <ul style="list-style-type: none"> 'Tangled in a web' 'Experiencing a snapshot of reality' 'Being normal' 'Dance as if no-one is watching' 	<ul style="list-style-type: none"> Social inclusion and normality The self Meaning of PA 	BPNs were not associated in study one and did not emerge as meaningful themes in study two or three. The findings from studies two and three therefore informed the discussion of potential explanations for the associations of PA and QoL.
PA and QoL: Barriers and facilitators to PA	<ul style="list-style-type: none"> Lower moderate and vigorous PA than the general population No gender differences in total PA or different intensities 	<ul style="list-style-type: none"> Tangled in a web of lethargy and tangled thoughts Gender similarities 	<ul style="list-style-type: none"> Professional perception of motivation. Professional conflict Socially inclusive services Gender differences in PA participation Ad-hoc provision 	This meta-theme highlighted that people with psychosis were less likely to conduct moderate and vigorous PA. Studies two and three describe why this may be the case. The studies found differences in gender participation in PA. This meta-theme sums up the implications for practice which emerged through a discussion of barriers to PA which arose from both professionals and SUs.

7.2 Synthesis of findings

This section will discuss the meta-themes and how the inferences from the three studies combine to provide an understanding of how PA relates to QoL in people with psychosis.

7.2.1 PA and QoL: Being normal

PA and development of self

PA was found to be associated with PH in study one and it is suggested that the theme 'developing a sense of self' (a sub-theme of 'being normal') may help to explain why this association was found. In particular, participants of study two described how PA helped them to feel fitter, stronger and helped them to either lose or maintain weight. These physical improvements were perceived to develop a physical self which the participants were more content with. This was perceived to be important to QoL for two reasons: 1) they felt they looked more normal by society and 2) they developed their physical self to feel more normal in their self.

The first reason, looking good, was perceived to be important in order for participants to feel more 'normal' in society. The physical self, especially the physical body and the way in which the body is valued and judged is perceived to be an important part of society in general. The development of an 'athletic body' has also been found to have a significant impact on self-worth and self-esteem in the general population (Shipway & Holloway, 2009). According to Atkinson (2008) an active body represents a group of people who are controlled, disciplined, culturally and economically invested in health and are self-responsible. An image perhaps people with psychosis desire as it is an image accepted by society. The desire for acceptance and normality was strongly associated as an essential feature of the lived experience for the current sample of participants.

Aligned with this overt desire, it is also suggested that physically looking 'acceptable' is beneficial for self-worth. It is suggested that this may be even more important for people with psychosis as it was found that being overweight enhanced feelings of paranoia when engaging in a social world. This was found

in study two as some of the participants perceived that people were judging them on how they looked. Losing weight enabled them to feel more confident about their physical self, removing the perception that others were judging them on how they looked.

The second reason that the development of physical self may be associated with PH on the SF-12 is that participants in study two felt physically stronger and fitter as a result of taking part in PA. This enabled them to physically function more competently and satisfactorily within their life. However, developing strength and fitness was not only associated with developing physical self but also mental self. Participants described how feeling physically stronger enabled them to feel mentally stronger and more able to cope with life's challenges. However, there was found to be no association between PA and MH on the SF-12. One explanation for no association could be that the SF-12 assessed MH and functioning but did not ascertain how they felt about their mental self. For instance it does not include items on their resilience to cope with life's challenges.

It may be difficult to capture some of the findings of study two about PA and self on quantitative measures. For instance, an important finding from study two was that the physical sensation provided by PA made some of the participants focus on their body, rather than their mind and it was this physical sensation which reminded them of their self prior to their illness. This finding appeared to be the same for both those who held an athletic identity prior to the onset of their illness but also those that did not. This finding was only explicated by using relationality, one of the existentials outlined by van Manen (1990). The use of phenomenology has illuminated how PA may enhance self-concept, which would not have emerged if only quantitative measures were implemented. There were other potential reasons for there being no relationship between PA and MH on the SF-12 which are explored further in sections 7.2.2 and 7.2.4. However, overall it is proposed that PA develops a sense of self which may be implicated in better QoL. This finding furthers knowledge from previous studies which has found PA to develop athletic identity (Carless & Douglas, 2010), but also

suggests that additional quantitative and qualitative studies need to be conducted in exploring PA and self-concept in people with psychosis.

PA and social integration

Another sub-theme of 'being normal' from study two was 'helping social re-integration'. The participants described how PA helped them to re-integrate into 'normal' society. This also featured prominently in study three in which the participants described PA services promoting social inclusion and normalisation. Study one found that total amount and volume of PA was associated with social functioning. Combining this finding with the findings from the other two studies provided a stronger argument that PA can be useful for social integration.

Study two found that PA required individuals to engage in the social world and therefore aided their re-integration into a world which at times seemed unreal. This was found for different types of PA from walking to group sport sessions and also for a number of purposes, such as walking out of necessity or playing football for pleasure. Study three found that football groups were provided most frequently under the remit of social inclusion. The professionals in study three reported that some SUs appeared to attend these groups solely for the social contact and 'banter' associated with football. This finding supports research by Carter-Morris & Faulkner (2003) who also found football to enhance social functioning through enticing individuals out of the house.

However, as football was found to be the dominant provision of PA by the Trust, few women attended these sessions. It was argued in the discussion of study three that football was not meaningful for women and therefore women did not attend services provided by the Trust nor were they encouraged to attend by professionals. Nevertheless, it was suggested that for women who did attend non football PA groups this helped them to mix with others but this was usually over a cup of coffee either pre or post PA. This further suggests that it might not be the PA itself which enhanced social functioning but this is merely a tool to be used to encourage social integration.

In addition to organised PA groups, study two found that walking out of necessity helped to integrate people into the social world. Walking often forced people to acknowledge the existence of others and even something as simple as gaining eye contact or saying hello reminded participants that they were a social being and importantly this was deemed as being 'normal'. This may help to explain the findings in study one with respect to PA and social functioning. Study one found that the majority (75%) of the time spent being active consisted of walking and interestingly only walking was found to be related to social functioning. However, this percentage of walking should be considered tentatively as walking is the most difficult type of PA to accurately report (Soundy et al, 2007a). Nevertheless walking has been reported to be the most common type of PA in people with psychosis in other studies (e.g. McLeod et al, 2009).

Walking has been found to be significantly positively related to social functioning in the general population (Blacklock et al, 2007). Furthermore, walking groups for people with mental health problems have been found to provide the opportunity to meet others (Crone et al, 2005; Priest, 2007). However, these studies have only investigated walking conducted for leisure purposes and therefore did not consider walking for transport and functional purposes, such as walking to the shops. This is an important consideration in this population as it is suggested that the reason for the high amount of walking found in study one was as a result of walking for transport. Participants in study two and three stated that people with psychosis walk a lot due to not being able to drive. Previous research has also found that people with psychosis conduct a lot of transport PA (Soundy et al, 2007a). Although, the type of PA was not assessed in the quantitative survey, overall from the three studies it is suggested that PA does not always need to be conducted for leisure purposes for it to be associated with social functioning and integration. This is important in this population who are known to be socially excluded (Social Exclusion Unit, 2004) and may not feel able to join a walking group if they are in a severe phase of their illness (Soundy et al, 2007a). This contributes to knowledge as it suggests that PA may not need to be structured and organised PA for people with psychosis to feel that they are able to integrate in a social world.

7.2.2 PA and QoL: Intensity

This meta-theme considers the different intensities of PA and their associations with QoL alongside a discussion of 'dance as if no-one is watching'. This theme from study two described how intensity of PA altered the participants' concept of time and how this was perceived to be important for providing the time to either work through negative thoughts or escape them.

MH was not found to be related to any PA intensities in study one, however, the intensity of PA appeared to have an impact upon the participants respite from symptoms as described in the 'dance as if no-one is watching theme'. Some participants described that to be successful at escaping from their negative thoughts and lethargy, they needed to be absorbed in the task. Therefore, PA needed to provide sufficient stimulation to engage participants and to distract them from their thoughts. For some participants this distraction was enabled because their mind was focussed on their body exercising at a vigorous intensity. For others, their mind was directed elsewhere; either on nature, social integration, skill acquisition or tactical decision making. However, some participants wanted to work through their thoughts and if this was the case less vigorous PA was required in order to focus on their thoughts. This suggested that PA does not need to be of a vigorous intensity to escape negative thoughts and lethargy. The intensity of the environment (social and physical) and the intensity in which the mind was required to work to undertake PA may also be important. This might explain why there were no significant associations in study one for intensity of PA and MH. Only the physical intensity of PA was assessed and none of the other factors were considered. However, it is likely that the type and intensity of PA is very individual specific and it will depend upon the purpose for which individuals choose to undertake PA. For instance, an individual's preference and previous experience of absorbing activities should be taken into account (Lind et al, 2009), as well as whether individuals choose to use PA to help distract or work through thoughts.

A further consideration, which may explain why there was no relationship between any intensity of PA and MH in study one, was that the respite from symptoms, found in study two, may only be short-lived, whereas the measure of

MH asked participants to rate their mental health over the previous four weeks. The participants in study two described being free from symptoms during PA and for a while after, but it certainly did not cure the symptoms; it was only for this short-lived time period. Therefore, when asked to recall their MH over 4 weeks, people with psychosis may generally respond about their overall mental health and not consider their moments of respite. This could explain why there was no relationship between PA and MH. Perhaps PA only provided short-term MH benefits, such as the frequency and severity of symptoms rather than providing general improvements in MH. This may explain why there was found to be a relationship with PH but not MH. The relationship between PA and PH is seen as more enduring as the participants can see and feel their changes to physical health over a four week period. However, Acil et al (2008) found that PA improved both PH and MH components of QoL over a 10-week period. The Turkish version of the WHO-QOL-BREF was used in this study, so it is difficult to draw direct comparisons, but similar questions about mental health were asked. The participants in this intervention conducted 40 minutes of aerobic exercise three times a week for ten weeks and MH was significantly increased in comparison to a control group. This highlights a limitation in the current study as it was not known how both MH and PA may change over time. For instance, it could be that greater changes in MH exist for people who increase PA. Wendelvos et al (2004) reported that MH as measured on the SF-36 was related to an increase in PA over a five year period, but not cross-sectionally. This may help to explain the findings in this study: a new identity takes time to develop. Respite is short-term, longer-term MH may improve, but assessing it over a retrospective four-week period does not demonstrate an effect. Another reflection about the SF-12 is that although it asks about mental health it does not ask about negative thought processes such as paranoia and voices. Therefore, it is acknowledged that PA is not related to MH as assessed on the SF-12. However, upon integration of the studies and a consideration of the whole, it is suggested that PA can have an impact on MH for some individuals but on components not assessed on the SF-12.

The purpose of undertaking PA may explain why walking was not associated with PH, but moderate and vigorous intensity PA were associated with PH (although

vigorous intensity PA was found to be explained by age). As mentioned in the theme 'being normal', participants wanted to look and feel physically good in order to fit in with society. To achieve these goals, the participants in study two often described conducting PA which would be defined as moderate or vigorous. However, walking was also found to be beneficial for physical health in study two. For instance, Tina described walking on the treadmill to maintain her weight. An explanation as to these differences in findings for intensity of PA is that Tina specifically chose to undertake walking to enhance her physical health and functioning. As aforementioned, it is argued that a lot of people with psychosis do not choose to walk, they do it because they have to, often for transport purposes (Soundy et al, 2007a). It is therefore maintained that the majority of the participants in study one may not perceive walking to be of sufficient intensity to be beneficial for their physical health. They may perceive it to be something which they are forced to do to travel between essential places. The only purpose it serves is a functional one but importantly this enhances social functioning. However, this interpretation of PA intensity and purpose did not originally emerge as a finding in study two. I have returned to the data to find this and therefore my view could be biased by the findings of study one and three and therefore I would suggest this interpretation requires further study.

7.2.3 PA and QoL: Amount

Study one found that if participants achieved the PA guidelines they scored significantly higher on PH (this relationship became non-significant after controlling for age, but the effect size was still moderate). The explanation for this was discussed in section 7.2.1, where it was seen that PH is related to PA because of a developed self-concept. It is therefore considered that conducting the guidelines of 150 minutes a week of at least moderate intensity PA was associated with PH because of the potential to enhance physical self and functioning.

It was difficult to ascertain how the amount of PA relates to QoL in studies two and three, as participants described concrete experiences. When the participants of study two were asked about amount of PA, there was great variability in the response depending upon the perceived severity of their illness and what they

felt capable of undertaking at the stage of their illness. In the theme 'experiencing a snapshot of reality' PA was found to alter the perception of space. For instance at the worst points of their illness, PA was rendered impossible as their body had been consumed by their mind, which Tom described as 'being in a pit of dung'. However, upon emergence from this 'pit' participants could begin to engage with PA. PA helped them to feel free from the oppression of tangled thoughts and lethargy – allowing them to engage in what felt like the real and 3D world. However, small steps were reported to be taken; this could involve walking in their local area. For some participants this was too difficult because of perceived stigma and paranoia, so on these occasions PA was undertaken in the home. It appeared that participants needed to let their body get used to being active and used to different social and physical environments. Further support for this was provided as participants in study two described how undertaking too much PA could force them to return to the 'pit' where they were once again tangled in lethargy and negative thoughts. It was therefore recommended by participants in both study two and three that PA should be introduced slowly, with respect to amount and intensity. This was reinforced in study three, under the theme 'negative experiences' as there was one report where a female SU attending football experienced a worsening of her psychosis as the environment was seen as over-stimulating. In addition, the professionals had witnessed retarded motor control in PA in SUs because of their medications. However, none of the participants in study two described this having an impact upon their PA experiences, although when on high levels of medication, they were physically unable to participate.

This thesis did not quantitatively measure how much PA is 'too much'. Brown et al (2004) found that poorer QoL was reported if participants from the general population conducted 7 days of PA and spent more than 90 minutes at moderate intensity or 60 minutes at vigorous intensity. However, this could vary significantly in people with psychosis. It is argued that where the amount of PA becomes 'too much' is highly individual specific and could depend upon factors of their illness. Wright et al (2012) found that for individuals with bipolar disorder, PA could exacerbate symptoms if in a manic stage. The amount of PA was not found in this thesis to be explicitly related to the different phases of bipolar

disorder, but there were implications of PA and different phases of the participants' illness. Equally, amount of PA and QoL could also depend upon other factors associated with PA. For instance, in the general population, lower fitness has been found to be associated with poorer affect following PA (Blanchard et al, 2001). In addition, PA which is perceived to be too strenuous has also been found to have negative implications for affect (Biddle & Ekkekakis, 2005). However, it is clear that for some individuals, depending on their mental state, even small amounts of PA can be beneficial and large amounts could be detrimental. However, where PA becomes 'too much' will only be relevant to each individual.

Although achieving the PA guidelines was found to result in higher PH, this is likely to be individual specific. In addition, there was no difference on MH for those either achieving or not achieving the guidelines. This could be as a result of a lack of autonomy over their PA as the purpose of PA may not have been deemed as meaningful. As the majority of PA was found to be walking in study one and this is suggested to be conducted out of necessity, autonomy over PA may have been taken away from the participants. Choice and empowerment over self-care has been found to be more important than amount and dose in a recent study into self-care in those with mental health problems (Gillard et al, in preparation).

One further consideration was that study one was a survey design and presented grouped data so identifies significant relationships that apply across the group. In contrast study two was targeted as participants who were physically active and investigated the relationship between PA and MH in more depth. Therefore it may not be surprising that there was found to be benefits for MH in study two. Furthermore, although no relationship was found in study one, there may be individuals within that group where a relationship between PA and MH existed.

7.2.4 Theory

Self-determination theory was originally used and tested in an attempt to explain any relationship between PA and QoL. This was because it was process orientated and included three constructs which appeared to incorporate other

theories of PA and QoL. However, only moderate intensity PA and autonomy was significantly related and this was weak. It could be argued that a context specific activity such as PA may not be sufficient to improve general or global basic psychological needs, and in turn global QoL. However, Wilson et al (2006) used a global measure of well-being in a study assessing PA, well-being and SDT and it was found that PA was related to well-being, suggesting that a context specific activity such as PA could be related to a global construct such as QoL. However, the measure of BPNs used in study one had not been validated in this population and therefore may not be able to accurately assess BPNs in people with psychosis.

In study two, the three constructs of autonomy, competence and relatedness were on the original template, however, they failed to emerge as strong themes on the final template (see appendix 15). However, these concepts are apparent in the discussion of the theme 'being normal'. For instance, PA was used to control how the participants were perceived in society; I described this as giving them empowerment. In addition, PA was described as enhancing confidence because they had achieved something meaningful, this could have formed a theme of competence and a discussion was held about how PA can help people feel comfortable in their social and physical environment which could be perceived as relatedness. However, I decided against naming themes under autonomy, competence and relatedness as I felt that this would reduce the theme 'being normal' to these constructs when I perceived that there was much more depth to this theme. For instance, I felt that the sub-theme 'developing a sense of self' which encompassed a discussion of autonomy was more prominent than autonomy alone, which would not have represented the development of self; an important finding. Therefore upon consideration of all three studies, factors other than SDT should be considered in the relationship between PA and QoL and this finding supports the proposition that there is no one mechanism responsible for change in mental health and QoL (Carless & Faulkner, 2003).

Study two and three helped to identify other factors which may help to explain the relationship between PA and QoL. These are summarised in figure 7.2.4

It is suggested that PA needs to be perceived as meaningful to enhance QoL. From study three it was reported that participants believed that PA provided SUs with a meaningful occupation – it provided them with something purposeful in their day. It was found from combining studies one and two that PA may be seen as meaningful for PH as it developed their physical self and physical functioning enabling them to feel more 'normal'. Although study one did not find any association between PA and MH, this was suggested to be because the measure used may not be sufficiently sensitive to detect the association with MH which emerged in study two. However, study two and three did suggest that PA could provide benefits to MH for some individuals. These were explicated under the themes, 'experiencing a snapshot of reality' 'being normal' and 'dance as if no-one is watching'. Some of these shared similarities with themes from study three, specifically 'social inclusion and normality'. Therefore, PA was deemed to be meaningful as it temporarily altered the felt space from feeling oppressed by the tangled thoughts and hidden in a pit to feeling free from these thoughts and being able to engage in the 'real world'. PA enabled relatedness – where the self felt normal and integrated and was perceived to be 'normal' by others in society. PA also provided the tool to integrate into a social world. Finally PA was seen to alter the feeling of time, allowing the participants' time to either work through their thoughts or provide respite from them.

However, it was the existential of embodiment which appeared to underpin the relationship between PA and QoL. The use of the body appeared to be fundamental to QoL. This appeared to alter depending on the severity of the illness, but moving the body in a meaningful way allowed the participants to focus on their body. At times this meant the participants were reminded of the existence of their body, at other times the use of the body allowed them to focus their mind away from their tangled thoughts and also allowed them to recognise a former self. This meant on occasions – especially when completely absorbed in PA - their mind, body and self were seen to be once again integrated as a whole; they were functioning as a normal person. This gave them confidence in who they were, enabling them to think and hope about their future. In addition it was the use of the body which enabled people to engage in the social world.

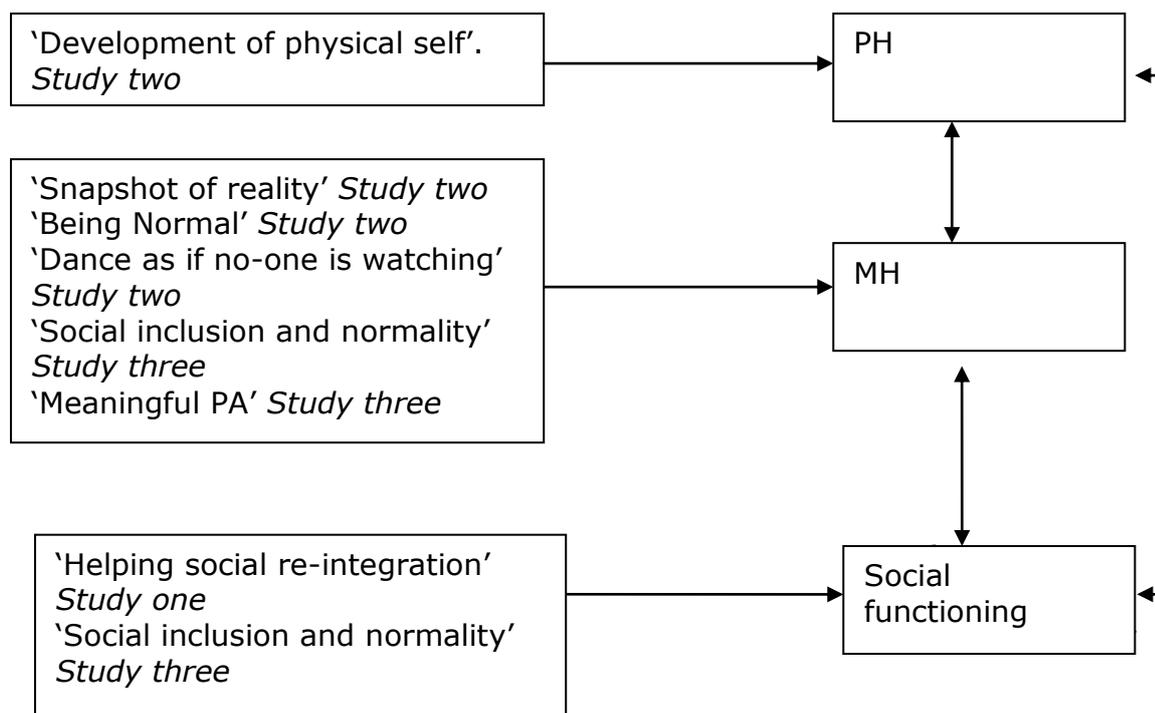


Figure 7.2.4 Summary of factors proposed to explain PA and QoL

The combined findings from all three studies suggest that there were some relationships between PA and QoL and some explanations for this association were outlined. However, it is acknowledged that these findings are not adequate to state these combined inferences are the truth about the phenomenon; they provide a better understanding of the relationship between PA and QoL, but PA would not be associated with QoL for everybody with psychosis. In addition, different findings and interpretations may have emerged even within the same sample, if somebody other than myself had interpreted the findings. It is also acknowledged that each person within studies one and two will have different experiences of PA and these cannot be generalised. A final consideration is that there are many factors which may impact upon QoL which have not been accounted for in this study. In section 1.2.3 of the introduction I defined QoL for the purposes of this study from a health-related perspective. However, there are potentially many other factors associated with global QoL. For instance, Schallock (2000) states that global QoL is associated with the following domains: emotional well-being, interpersonal relationships, material well-being, personal development, physical well-being, self-determination, social inclusion, and

rights. Whilst some of these have been considered in this thesis, there is no discussion of domains such as material well-being and therefore it cannot be claimed that PA is associated with a more global view of QoL.

Returning to the main research question how does PA relate to QoL? It can be answered by stating that PA relates to QoL by providing a meaningful use of time. What is meaningful will vary from person to person but studies two and three suggest that; this period of time conducting PA enables people with psychosis to escape their mind, where at times they feel enclosed in a 'pit', excluded from the real world. PA enables a focus on the body, enabling people to recognise their self, free from their tangled thoughts; the mind, body and self feel that they belong together and therefore function 'normally'. PA also allows people to crawl out of their 'pit' and re-integrate into a real and social world.

7.2.5 PA and QoL: Barriers and facilitators for PA

To enable PA to be encouraged in the promotion of QoL and recovery, implications for practice have emerged throughout the three studies. The discussion which ensues incorporates a discussion of the theme 'tangled in a web of tangled thoughts and lethargy' from study one; a number of themes from the professionals views in study three; and also findings from study one which outlines that people with psychosis do less moderate and vigorous PA then the general population. The reasons for this are considered.

Although, study one found that a significant percentage of people with psychosis were achieving the PA guidelines, this was mainly carried out by walking, and moderate and vigorous PA were much lower than the general population. As a self-report measure of PA was implemented, it is likely that the amount of PA, especially walking is over-reported (see section 4.5.1 for further discussion). These findings suggest that it is possible for people to conduct all intensities of PA. However, there may be significant barriers preventing people from undertaking PA, especially moderate and vigorous. It is important to consider these barriers, as intensity of PA may be implicated in the relationship with PH. Study two and three shed some light on what may prevent individuals with psychosis from participating in more vigorous PA. The experiences of this

purposively selected active group of people (study two) and professionals who are involved in some PA services (study three) provide information which can be transferred to people with psychosis who are not active. The participants in both studies two and three shared experiences which described occasions where PA was prevented and also how PA can be encouraged. One of the themes in study two was focussed upon the 'web of lethargy and tangled thoughts'. Lethargy was seen as a veil which prevented people from being active. This veil was perceived to be induced through medications, the environment and symptoms of the illness itself. However, perceived tangled thoughts themselves prevented people from engaging in PA, often as a result of paranoia. However, for the participants in this study it was these same factors - lethargy and tangled thoughts - which motivated individuals to be active; they were desperate to be free from the thoughts and lethargy and they found PA worked as a temporary reprieve.

Professionals in study three also described a lack of motivation as preventing PA. The professionals attributed it to the medication and described how difficult it could be to encourage people to be active when they were tangled in the web. However, participants in study two described occasions where mental health professionals did not encourage them to be active and on occasions prevented them from conducting PA. This was perceived to be a self-fulfilling prophecy; some professionals believed that both medications and the illness rendered SUs incapable of being active and therefore did not encourage it. Because of this, participants' in study two described that feelings of lethargy and tangled thoughts were perpetuated. Additionally, participants in study two reported that some mental health professionals prevented PA as they perceived it be a negative behaviour for SUs; although, this was not the case for the professionals in study three as their beliefs about PA mostly matched those of the participants in study two. They generally believed in the benefits of PA for the whole person and believed in PA for recovery and QoL, although there was not the same emphasis on distraction from symptoms, as was described by participants in study two. This offers a different perspective from previous work which suggested that mental health professionals still work within a mind-body dichotomy (Dean et al, 2001; Faulkner & Biddle, 2001; Faulkner & Biddle, 2002). It may be claimed that the professionals in study three still worked within

this mind-body dichotomy as they did not discuss how PA could be used to treat the mental health symptoms of psychosis as was found in studies by Faulkner & Biddle (2001 & 2002). However, if this was the case, the participants would have made it clear that they believed in PA for physical health and perhaps other therapy for mental health. Only the psychiatrist from study three appeared to believe in this in what might be presumed to be a biomedical approach to PA. However, the remainder of the participants clearly saw PA as beneficial for the whole person; they did not see it as 'treatment' for either physical or mental health. They saw it as being a meaningful and normal occupation which enhances self and encourages social integration. It perhaps could not be expected for professionals to describe how PA may be used to distract SUs from their thoughts as this was not necessarily explicit in their behaviours – which the professionals' views were mainly based upon. It was therefore perceived that the majority of the professionals within study three promoted PA within a recovery approach which mainly matched the views of participants in study two.

The experiences described by the participants in study two suggested that professionals could provide information on how PA can help reduce lethargy and symptoms that the participants desperately wanted to be free from. This, of course would need to be discussed with each individual as to what they would choose to undertake and what was meaningful to them. In addition, information about the benefits to SUs' physical health could also be provided, as this may be perceived to be meaningful and provide them with a purpose to be active. The participants in study two had more or less found PA worked for them incidentally, a lot of other individuals with psychosis will not be aware of the potential benefits. However, it is acknowledged that at certain stages in an individual's illness, PA will not be possible and could be detrimental. If participants are in the stage where they are completely consumed by their minds, using their body to be active may be meaningless. As in the general population, individuals with psychosis, have to want to be active in order for behaviour to change. If participants are consumed in their mind, they may have no awareness of why PA would be beneficial and therefore may not want to change.

A discussion was held under the theme 'socially inclusive services' by the professionals in study three about how they could provide socially inclusive PA sessions and how they could encourage SUs to attend. There were differences in the beliefs of professionals about transport provision. Some professionals believed that SUs should be encouraged to make their own way to PA sessions whereas others believed that this would exclude some from attending and transport should be provided. However, it appeared that for many SUs, providing PA was a meaningful incentive which encouraged them to use public transport in order for them to get to the session. This was maintained in study two under the theme 'tangled thought process' in which one participant described how difficult it was for her to get to the centre to undertake PA. She described being very paranoid and the only reason she convinced herself to get on the bus was because she knew there was an instructor waiting for her at the centre who would attend the PA class with her. This suggests that social support could be important to help people become active. The PA needs to be deemed meaningful, but social support also needs to be provided to help people overcome their hurdles. This could be more helpful than providing transport as it helps individuals develop other skills which have been under used during times of perceived severe illness. In addition, walking has been found to be associated with social functioning, so encouraging SUs to use public transport could enhance this aspect of QoL. However, this discussion should be held with each individual.

There was debate in both study two and three about SUs attending mainstream PA. Some professionals suggested that for PA to be socially inclusive, SUs should attend mainstream PA, although this was not seen as appropriate for many SUs, partly as a result of stigma. This same discussion ensued in study two under the theme 'being normal' as some participants wanted to attend mainstream PA as this helped individuals feel as though they were not segregated from normal society. However, some participants felt safe with other people with mental health problems and did not want to attend mainstream PA because of perceived stigma. Priest (2007) reported that some people in a walking group for people with mental health problems 'felt safe' when there were other people who also were experiencing distress as they were non-judgemental. Therefore it is

suggested that services provided specifically for people with mental health problems should be encouraged, if people are either just starting to undertake PA or if their illness was perceived to be at a fragile stage. Once people perceive themselves to be more competent and if they want to, PA in the mainstream should be encouraged. However, study two found that attending a social PA group could be detrimental at some stages of a person's psychosis and could indeed provide a barrier to PA. This adds to previous research which has also found that people can be prevented from undertaking PA if they perceive that social contact is required (Soundy et al, 2007a). This suggests the need for services to be flexible and more responsive to changing needs over time.

Most of the PA provided by the Trust was of an ad-hoc nature and was inconsistently offered. This was with the exception of football which was consistently provided each week in both local authorities. Football is still dominantly a male sport and although some women did attend, they were in the minority. There were examples of more female friendly PA provision, but these were described as inconsistent, partly as a result of female professional availability but also because of funding and perceived lack of interest. However, this inconsistency was found to have an impact upon some of the participants in study two. For instance Diane described attending a female only aerobics class organised by the Trust, but this was discontinued. This was a great shame for Diane who did not have the confidence to attend mainstream aerobics classes and enjoyed being in a group of people who she perceived to be the same as her. There were no other groups like this that she wanted to join. Therefore, the dominance of football provision appeared to exclude female participation in PA. However, it was found from study one that females were just as active as males and there were no differences in QoL, suggesting that females are more than capable of conducting meaningful PA outside of service provision. In study three it was suggested by participants that somebody should be employed to organise all PA within the Trust, this could mean services are more consistently provided and provision for women is considered.

7.3 Recommendations

Upon consideration of all three of the studies, the following service implications and recommendations are summarised:

- PA guidelines for the general population should also be promoted for the QoL in people with psychosis.
- SUs should be encouraged to use public transport to attend PA services, with support, depending upon the individual. Further ethical debate needs to be held about transport and payment of services.
- SUs should be encouraged to attend groups designed specifically for people with mental health problems unless they feel ready to attend mainstream PA.
- PA was found to be successfully undertaken outside of service provision, therefore PA should be encouraged and recommended outside of this provision as well as providing a broader range of services.
- PA should be in an environment in which individuals feel comfortable.
- PA should be introduced gradually and the phase of an individual's illness needs to be considered, including an assessment of how they are feeling on the day. The amount and intensity of PA may vary depending on this.
- The intensity of PA should not only consist of the physical exertion but also the intensity of both the social and environmental stimuli. This will depend upon a person's purpose for PA and this should be discussed with individuals.
- Females should be more readily encouraged to be active and more female oriented PA should be provided.
- PA should be a consistent provision. Ideally a PA specialist should be employed at least at Trust level if not at team level. This person would be well placed to organise services, avoiding the ad-hoc nature of services. This person could also capitalise on guidelines and evidence based practice. This person would also be in a position to promote female PA. A further project could investigate this from a cost benefit analysis of employing somebody to organise PA.
- Professionals should not assume that SUs are not capable of being active and should provide gentle encouragement. Professionals need greater

awareness and knowledge of PA and how this can be recommended. This awareness training could be provided by the PA specialist role mentioned above.

- The activity needs to be perceived as meaningful. Therefore, it should not become a target where, a certain number of SUs need to be ticked off as being active.

A final conclusive recommendation is that the mind and body should not be seen as distinct entities by professionals. This was not the case for most of the professionals in this study who appear to be orientated within recovery. However, there was evidence that there were many professionals who still worked within a biomedical model and therefore saw mental health problems as situated in the mind and physical health problems as located in the body. Therefore, PA would not be recommended for the 'treatment' of people with mental health problems as this was perceived to be for 'treating' physical health. It became clear from the participants in study two that the mind, body and social world are entwined. Therefore professionals should be encouraged to promote PA for the benefits of the holistic person and not for the 'treatment' of either mind or body.

7.4 Methodological considerations

7.4.1 Quality and inferences

The quality of MM research is not only dependent upon good quality individual studies but also upon the quality of the meta-inferences generated from the integration of the findings (Tashakkori & Teddlie, 2008). Inference quality is the term for evaluating the quality of conclusions. According to Tashakkori & Teddlie (2008) there are three assumptions pertaining to inference quality:

- 1) High quality qualitative and quantitative strands are necessary but not sufficient for a high quality MM study.
- 2) The quality of meta inferences is dependent on the quality of inferences from both the qualitative and quantitative strands of any MM study.
- 3) Both within and across the strands of MM study, quality of data is necessary but not a sufficient condition for inference quality. Evaluations

of data quality must be kept separate from those of inference quality (p105).

To ensure high quality inferences the following were considered with respect to the three points above:

1) All three studies were conducted rigorously as described in the methods sections of study one (section 4.3) study two (section 5.2) and study three (section 6.2).

2) The inferences from each study and the meta-inferences were verified against the questions in table 7.4.1

Table 7.4.1 Components or criteria for interpretive rigour (adapted from Tashakkori & Teddlie, 2008).

Aspects of inference quality	Research criterion	Indicator or Audit
1. Interpretive consistency	1a) Do the inferences closely follow the relevant findings in terms of type, scope and intensity? 1b) Are multiple inferences made on the basis of the same findings consistent with each other?	The type of evidence was consistent with the evidence, e.g causal inferences are not based upon correlational evidence. The intensity of the inferences are in line with the magnitude of the findings, i.e. don't state there is a cause when only an association.
2. Theoretical consistency	Are the inferences consistent with theory and state of knowledge in the field?	Inferences were discussed with current theories and empirical findings in the field.
3. Interpretive agreement	3a) Do other scholars reach the same conclusions on the basis of the same results (i.e. is there peer agreement)?	The findings were discussed and shared with other peers. However, it is acknowledged that my interpretation is implicit in the findings.
4. Interpretive distinctiveness	Is each inference distinctly more plausible than other possible conclusions that can be made on the basis of the same results?	A discussion of plausible conclusions was outlined. A reflective diary was kept to help interpret findings.
5. Integrative efficacy	Does the meta-inference adequately incorporate the inferences made from Qual and Quan strands of the study?	See below for a discussion of this.

To produce high quality meta-inferences across studies, Tashakkori & Teddlie (2008) recommend asking the question: Does the meta-inference adequately incorporate the inferences made from qualitative and quantitative strands of the study? This is referred to as integrative efficacy and highlights that integration should form meaningful conclusions on the basis of both consistent and inconsistent results. It does not necessarily imply that a single meaning is created. Some authors claim that consistency between two sets of inferences has been considered an indicator of quality. However, others regard divergence in inferences to be an advantage of MM (Tashakkori & Teddlie, 2008). As there were inconsistencies within the findings from the three studies in this thesis, steps were taken to assess if there was a problem with the quality of any of the individual studies. Tashakkori & Teddlie (2008) suggest that inconsistencies could identify problems with data collection and analysis of at least one of the studies. Therefore these were verified in the current thesis before integration of the findings was conducted. There was found to be no problems with data collection or analysis which may account for the inconsistent findings. This is not to say that there were no limitations in the methods used, these are discussed in section 7.5. Therefore, both the consistent and inconsistent findings were discussed using the findings from one study to explain the findings from another (complementarity). The dissimilar findings were found to elaborate on the phenomenon, in that the inferences from study two helped to explain the inferences from study one. Study two revealed the conditions in which the findings from study one may or may not apply (Brannon, 2005). Therefore findings were not rejected because they did not fit, but they were explored.

3) Evaluations of the quality of the data were not discussed in this synthesis unless it was felt this may be able to explain the findings.

7.4.3 Mixed methodology limitations

Johnson and Onwuegbzie (2004) propose that there are a number of limitations to MM research. These include:

1. Can be difficult for a single researcher to carry out both qualitative and quantitative research, especially if two or more approaches are expected to be used concurrently.
2. Researcher has to learn about multiple methods and understand how to mix them appropriately.
3. Some details of mixed research remain to be worked out fully, such as how to interpret conflicting results.

With respect to item one and two; it was difficult to carry out both qualitative and quantitative studies concurrently and I did have to learn and understand multiple methods. However, conducting both quantitative and qualitative research required me to understand the underpinning philosophies of three paradigms. This is perceived to be a strength of the thesis as the methods of each study are fully engrained within their research paradigm enhancing the quality of each of the studies. This was felt to also enable good quality inferences and integration of the data in the synthesis of the findings (Tashakkori & Teddlie, 2008).

With respect to the third weakness outlined, the use of a matrix was used to help in the interpretation of conflicting findings. The findings of one study helped to explain the findings from another, offering further understanding of PA and QoL.

Some authors of MM research recommend that the sample size in the qualitative strand should be increased to match the quantitative strand to enhance the comparability of findings (Luzzo, 1995; Idler et al, 1999). However, this is only feasible if the qualitative data was to be quantitised. As this was not the aim and it was perceived to be important to conduct a thorough qualitative analysis in studies two and three, the sample size was not enlarged. The participants in study two, were also participants in study one to allow for some consistency across the sample (Creswell and Plano Clark, 2007).

A further consideration in a concurrent MM study is that data and findings from one study could bias the data and findings from another (Creswell et al, 2008). For instance, the participants who took part in study two were asked to complete

the questionnaire pack after they had been interviewed and return it to me in the stamped addressed envelope. It is possible that having met me and participated in an interview; they would be more willing to respond with social desirable responses. However, it is perceived that these eight participants would have limited impact upon the overall result. Nevertheless, in hindsight it may have been beneficial to give these questionnaires to participants upon the first meeting prior to the interview. In addition, bias in the analysis could have occurred. Quantitative analysis was conducted prior to the analysis of study two and study three was conducted after studies one and two. However, the focus groups in study three were led by my director of studies who was further removed from the data. During the analysis I tried to reflect upon occasions where I may have interpreted aspects of the focus groups as a result of knowledge gained from study two. However, it is acknowledged that some of the assumptions made would subconsciously impact upon the interpretations of the findings (Seale, 1999). Nevertheless, by doing a broad thematic analysis I was able to remain stricter with myself in not looking for deeper meaning and instead focussed on the main aims of the study.

7.5 Limitations and future research

Throughout the discussion limitations of the research have emerged and areas for future research have been suggested. These are summarised in this section.

Throughout the discussion of meta-inferences, some meaningful information was gained about intensity, amount and type of PA. However, more information is required for a variety of reasons: to understand what type of PA is meaningful to individuals; to identify what is meant by 'too much' PA and where it may become detrimental to QoL; to gain further knowledge on the experiences of varying amounts, type and intensity of PA at different stages of their psychosis. Various methods could be used to obtain further understanding. Questionnaires could be utilised which investigate different types of PA; the longer form of the IPAQ which assesses transport, leisure, household and occupational PA could be used. This was not deemed appropriate for the current study as it has not been validated in this population, it was perceived to be too long considering the other measures being used and it was not appropriate to ask work related questions in

a population of people who are known to have a high level of unemployment. There is, however, potential to remove questions pertaining to occupation from future research. In addition, other types of PA should be considered such as yoga, and group and individual PA. As the IPAQ has low criterion validity and over-reporting of PA is frequently stated as a disadvantage of PA self-report measures (Welk, 2002), different measures of PA should be implemented such as accelerometers. Further in-depth qualitative studies of both SUs and professionals could be conducted which are more concentrated on amount and type of PA for the individual at different stages of their psychosis. Equally ethnography could be conducted combining methods including observation. Finally, wider participation to include other family members and carers and their perceptions, could also advance the field.

The sample size especially in study one could have been enlarged to provide more power. However, as previously mentioned it is difficult to gain large samples in this population. In addition, this sample is larger than a similar cross-sectional survey of PA and QoL in people with psychosis (Vancampfort et al, 2011). Therefore representativeness of the sample may be more of a concern. As can be seen from the demographic descriptive statistics in section 4.4.3 the majority of the sample is Caucasian. This may not be representative of the population as African-Caribbean people have been found to have a higher prevalence rate of psychosis than the Caucasian population in the UK (King et al, 2005; Jarvis et al, 1998). Only one mental health Trust took part in the survey therefore the results may not be representative of England or indeed other countries. Although, only one Trust participated, it did contain a mix of urban and rural localities but it is recognised that different Trusts may have different problems with conducting and implementing PA. Only one Trust was used as it was not feasible to widen this within the practical constraints of the PhD.

An important finding was that PA aids in the development of self. However, this finding cannot be generalised as it only emerged in the qualitative findings as it was not assessed on the SF-12. Previous qualitative studies have also found this (Carless and Douglas, 2008) but it is not known to have been assessed quantitatively in a cross section of people in the community. However, it was

proposed that enhancing self may take time to develop and cross-sectional studies are not able to measure change. Therefore, longitudinal and experimental studies should be implemented which assess self-esteem. However, as mentioned in the discussion it is difficult to assess some aspects of the self on a quantitative measure, for instance, the recognition of body in existence and the reminder of a former self could be difficult to quantify. Therefore, further in depth qualitative and MM studies should be conducted.

A further suggestion for future research would be to conduct cross-sectional surveys with a QoL scale specifically devised for people with psychosis. This may assess aspects of the MH aspect of QoL which emerged in studies two and three, but were not evident on the SF-12.

Study two and three provided an in-depth exploration of the experiences of PA, from either a SU perspective or a professional perspective. However, interviews were only conducted with people who chose to conduct PA at the time and focus groups were only conducted with professionals who believed in the benefits of PA. Although these experiences provided information which can be learnt from with respect to service and research implications, a broader range of people could be interviewed. This should include interviewing people in different phases of their illness, and finding out what prevents people from being active who do not perceive themselves to be active. For instance people might be meeting the guidelines through walking, but they only walk because they have to. Interviews, surveys and MM studies should also be conducted with a wider cross-section of professionals. More barriers to PA may be identified if those without a positive perspective of PA were included in studies.

An important finding is that there appears to be a gender split in the provision of PA within the Trust. More research is required into female participation in PA and the types and mode of delivery PA which could be effectively offered to females.

7.6 Reflexivity

Reflexivity is an essential part of the research process (Scott & Usher, 1999) as this can help to explain how meaning was constructed and highlight any

challenges which occurred (Willig, 2001) as well as adding to the validity of the findings.

At the beginning of this PhD journey, I set out with the purpose of exploring the phenomenon of PA and QoL in people with psychosis. However, it was not only my aim to understand the phenomenon in itself, it was anticipated that understanding this phenomenon would shed light on how PA could be used to aid in recovery of people with psychosis. Therefore, in the broader context I hoped that this thesis would have an impact upon those who work in mental health services so that they may reflect upon their own practices and policies. I hoped that this may encourage more professionals to think about how they might introduce PA to a person with psychosis. Equally it was hoped that people with psychosis would directly benefit from the work in this thesis. For my aspirations to be achieved I had to frame the research question in a way that allowed me to explore this phenomenon. Using a MM approach allowed me to explore the phenomenon of PA and QoL in people with psychosis in more depth.

To reflect upon my research journey I have used the critical incident analysis framework. This involves reflection in a number of stages on some key incidents within my PhD. These are outlined below, however, not all stages need to be discussed in depth for each of the critical incidents (Green Lister & Crisp, 2007).

1. Account of the incident
2. Initial responses to the incident
3. Issues and dilemmas highlighted by this incident
4. Learning
5. Outcomes

A research diary was kept in which I made notes about challenges and about important incidents such as interviews and focus groups. I made comments on what had happened, my emotions and what I learnt from the incident, some of these reflections have also been included in the analysis of study two (See 5.5).

Critical Incident 1: Forming a MM research question

The research question was formed based upon the review of the literature and this was the driving force for MM (Plano Clarke & Badiee, 2010). Therefore the research process began with attempting to write a MM research question. However, forming an appropriate MM research question which reflected the phenomenon which I intended to study was the first problem associated with mixed methodology that I encountered. After reading the literature, it became clear to me that MM was required to investigate PA and QoL, but forming this into a research question did not come easily. I found that I was tying myself in knots about which words I could use so that it did not suggest that either a post-positivist or an interpretivist paradigm was undertaken. This included me rejecting the word 'relationship' at one point. It was only upon further reading about pragmatism and MM that I realised that words associated with variance (relate) and process (how) could indeed be combined within a research question. A combination of these words in itself suggests that a MM design should be implemented. Therefore I accepted the research question: How does PA relate to QoL in people with psychosis?

Critical incident 2: Combining research methods

Although the research question was defined based upon a review of the literature, it was acknowledged that the research question and associated methods would also be influenced by my personal value systems and expertise (Tashakkori & Teddlie, 1998). My training in research methods had predominantly been in quantitative research prior to the PhD. However, I had begun to conduct research interviews as part of my previous employment and really valued these as a research method. In addition, I had been involved in intervention work which consisted of assessing outcome variables and evaluating the intervention through qualitative interviews and focus groups. Therefore, combining methods in a research project did not concern me when the research proposal was first designed. Colleagues would say to me that undertaking a MM study would be difficult but I naïvely dismissed these claims. In my own mind conducting MM made sense as it offers differing perspectives of the same phenomenon. It was only upon gaining an understanding of the philosophical underpinnings that I began to understand why mixing methods can be seen as

controversial. However, with pragmatism underpinning the study I was confident in this approach. That was until the findings of each of the studies became evident. It was apparent that there was a conflict in the findings and once again I understood why I was warned against conducting MM. I did become concerned that I would not be able to integrate the findings, so I began to collate and reflect on the findings which were emerging from the studies. This process allowed me to realise how the findings from each study could explain the findings from the other studies. This conflict in findings was investigated and actually I feel it contributes to theory and highlights further areas to research which would not have been discovered if convergent findings had emerged across all three studies.

Critical incident 3: Interviewing participants in study two

In-depth information was obtained from participants in study two. Before I met the potential participants I was apprehensive about the amount and depth of information which would be gained. However, my pre-conceptions were unfounded.

When I met the participants prior to the interview, it became clear that the participants were eager to talk about their PA experiences and extremely capable of conversing over a long period of time. This was for all but one of the participants (Ann). When I spoke to Ann, prior to the interview, her speech appeared slightly disordered and occasionally jumped between topics. She also appeared to be easily distracted. The interview with Ann was the last one in which I conducted and I approached the interview perceiving that I might not gain much; however, I was to be proven wrong. Ann was on occasions distracted but she was able to hold an in depth and reflective discussion about her PA experiences which provided great insight.

The good quality of data was obtained because the professionals had asked appropriate individuals to participate who they deemed to be capable of talking at length. In addition, I see this partly because of the relaxed environment which was created in the interview. This was perceived to have been enabled because of my previous experiences and learned skills, my natural demeanour and my

passion for the subject. I went into the interviews feeling relaxed and eager after the initial meeting with the participants. As this initial meeting relaxed me it is reasonable to assume that the participants also felt at ease having met me prior to the interview. I was comfortable conversing with the participants about their illness and PA as I had prior experience of discussing this issue with SUs who were deemed to be more seriously ill as they were in a mental health hospital. However, I am not a trained mental health professional and had only carried out relief support work in mental health hospitals for a period of a year. Therefore my knowledge and experience of mental health problems is quite limited. Nevertheless, this was perceived to be an advantage as I did not have a vast understanding of psychosis so I asked questions which required participants to expand upon answers. If I had had more knowledge and pre-conceived ideas on the subject, I may have assumed that I understood what the participant was describing. Furthermore, I am passionate about PA for people with mental health problems and this meant that I was eager for information. However, this could also be a limitation, this may have been evident in the way in which I conversed with the participants and they could have provided me with information which they thought I wanted to hear. Although this is perceived to be unlikely as it was clear to me that PA was very meaningful to the participants and they were as eager to describe their experiences as I was to hear them.

As the interviews proceeded, I did perceive my skill as an interviewer to have developed as I learnt to reflect the content and emotion of the information I was hearing back to the participant more effectively. When I was transcribing I also noticed that the more interviews I did the less I was thinking 'I should have asked more there'. However, it is felt that the information which was obtained from all interviews allowed an in-depth analysis of the phenomenon of PA and QoL in people with psychosis.

As I only met with the participants twice I felt no real emotional connection with the individuals. I felt able to walk away feeling that I had achieved something but also that the participants had achieved something. A number of the participants told me that they were really pleased to help me and enjoyed describing their experiences.

Critical incident 4: My position in the interpretation of findings

From the outset I stated that I believe in the benefits of PA for mental health. This could mean that I have interpreted the findings from all studies and in the synthesis of findings in a much more positive light than which they were intended by the participants. However, in a pragmatist philosophy, it is acknowledged that the researchers' values will impact upon the interpretation of findings. However, I have described in detail methods used in all studies to outline how the findings have been analysed, including an assessment of the quality of the studies. An interpretive analysis was conducted in both studies two and three where I worked hard to describe my interpretations so it was clear to see how they were grounded firmly in the data. The same position was maintained in the synthesis of the findings, where other literature was also included when describing the findings to prevent the discussion from becoming abstract.

Critical incident 5: Feedback from professionals

I presented my qualitative findings to professionals who work with people with psychosis. I was very anxious before I presented, in the knowledge that they had much more experience of psychosis than I did. However, I found this experience extremely fulfilling and it provided me with confidence in my findings. This is in part because of feedback I received from the professionals. Sharing with them quotes from SUs appeared to make them reflect on their own practice. One woman openly admitted that she had prevented SUs from being active, assuming that they were building up aggression. She stated that having heard the findings from the study she would now think twice before stopping PA. This was extremely meaningful and reinforced to me how important this thesis could be for some people with psychosis.

7.7 Contribution to knowledge and final conclusion

The justification for this thesis was based upon the premise that QoL needs to be enhanced in people with psychosis. PA was proposed as a potential beneficial tool for QoL, but there was very little previous work exploring this relationship in this population. This thesis was unique as it is the first known study to use MM

to explore PA and QoL in people with psychosis. Furthermore, it is the first known MM study to focus on QoL rather than PA as treatment.

Each individual study is seen to contribute to the field independently. Yet using MM has provided a more complete picture as the findings are woven together, strengthening the overall findings.

Study one is the only known study to use a validated measure of PA to assess the levels of PA in England in this population. In addition, it is the first study to assess if the recommended PA guidelines for the general population are related to higher QoL. As this study found that people with psychosis can achieve the guidelines and these are indeed associated with higher QoL, these guidelines can be recommended in this population. This is especially important as QoL was found to be lower compared to UK norms.

Study two used van Manen's (1990) hermeneutic phenomenological method to explore the experiences of PA. This is the first study known to use this approach to investigate this phenomenon in this population. The use of hermeneutic phenomenology and the four existentials outlined by van Manen helped to identify the importance of relatedness, spatiality, temporality and embodiment. It had been established in previous literature that PA can be socially beneficial to people with psychosis (see section 2.2.4.2). However the concept of a sense of freedom from the oppression associated with the illness had not previously been discussed. In addition, the importance of embodiment and how PA can help people feel that their body, mind and self belong together and therefore normal had not previously emerged in findings. Study two also contributed to knowledge by purposively selecting participants who were perceived to be active. The experiences of these active people can be used for further research and in service development to promote PA in people who are less active. Although, other research has also only investigated the experiences of active people with psychosis (e.g. Carless & Douglas, 2008), this is the first study to explore the experiences from a hermeneutic phenomenological perspective.

Study three was the first known study to be conducted with a heterogeneous mix of professionals since new policy had been published. The professionals were

all positive about PA and presented views which were mainly in accordance with recent policy (e.g. DH, 2006b). This is the first known study in which the professionals described promoting PA for the holistic person, rather than as treatment for either physical health or mental health. However, an important finding was that PA provision is often ad-hoc and this could be detrimental to SUs as it takes away autonomy over access to services. It was also found that professionals could encourage any sort of PA more readily, either through attending PA services or by conducting PA independently in an environment in which SUs' felt comfortable.

In combining these studies together a number of interesting and important findings emerged. Combining a quantitative (positivist) study with a phenomenological (interpretivist) study provided idiographic explanations for the external structures found in study one. The finding that walking was beneficial for social integration was found across studies. Integrating the studies meant that an explanation for the relationship was discussed based upon data. The relationship between PA and PH was explained by stating that PA was perceived to be meaningful as it enhanced the perception of physical self. The conflicting findings between PA and MH were explained through the combination of methods. This enabled ideas for future research and theory to be proposed, which arguably would not have been possible in a mono-method study. This includes identifying factors such as self-esteem which could be assessed to evaluate effectiveness of future PA interventions.

Interestingly, the professionals' views were often aligned with the SUs' views on the benefits of PA for QoL. In previous research, conflict existed between professionals and SUs (Dean et al, 2001); this study offers an alternative perspective, given the new policy. However, it is acknowledged that a limited and potentially biased cross-section of professionals participated.

A further important finding, given social exclusion is high in this population, was that walking was beneficial for social functioning and integration. This would not have been found if a cross-section of SUs living in the community had not been investigated. Most research into PA in people with psychosis has been conducted

within structured PA groups, set-up for people with psychosis or SMI (e.g. Hodgson et al, 2011, Fogarty & Happell, 2005, Carter-Morris & Faulkner, 2003). Or experimental studies which attempt to assess how PA could be used as an adjunct to treatment (e.g. Acil et al, 2008, Marzolini et al, 2009, Beebe et al, 2005). Therefore, using a cross-sectional MM approach revealed that people with psychosis do not only attend services provided by mental health Trusts but engage in PA independent of this. For instance they undertake PA when they need to do it and the services were not always provided. Therefore, it is argued that PA should be encouraged more frequently outside of Trust provision. Also professionals should encourage and support SUs who currently or previously engaged in PA, particularly when they see it as something that helps them manage their problems and feel better about their selves.

This thesis adds support to the growing literature about the benefits of PA for people with psychosis. The focus was on QoL and recovery, rather than PA as treatment and therefore it emerged that PA needs to be meaningful to the individual to be associated with QoL. For some it is meaningful for physical health, for others it is the recognition that they are social beings and perceive themselves to be normal. Furthermore, for some it is meaningful because it provides respite from symptoms.

To conclude, I have formed an essential statement which aims to capture the essential nature of the relationship between PA and QoL. According to van Manen (1990) an essence is 'that what makes a thing what it is' (p.177). Therefore based upon my interpretation, here is what I perceive to be the essence between PA and QoL in people with psychosis:

PA can be meaningful for some individuals with psychosis; the embodied experience aids to develop their Being, their sense of self - allowing temporal freedom of symptomological control, providing a means of integration into the social and real world of perceived normality.

I close this thesis with a poignant quote from Tina:

My exercise has been the most positive influence in my life and I would recommend it to anybody that has got a mental health problem (Tina).

May the positive influence of PA in those with psychosis continue and be further embraced.

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Appendices

Appendix 1: Demographic sheet

Below are a few questions about you and your illness.

A member of staff will complete this question: What illness does the participant have?

Schizophrenia
Schizophreniform disorder
Major depression with psychotic features.
Other (what is this).....

Bipolar Disorder
Schizo-affective disorder

Please could you provide the following information:

Are you: Male/Female (please circle)

Are you: (please circle appropriate category)

White British
White Irish
Other White
White and Black Caribbean
White and Black African
White and Asian
Other Mixed
Chinese

Indian
Pakistani
Bangladeshi
Other Asian
Caribbean
African
Other Black

Are you: Employed-paid (full time) Employed -paid (part time) Unemployed Student
Voluntary work Unpaid House worker
Other, please state.....
(please circle)

What is your age?

Are you: Single Married Divorced Separated Widowed
(please circle)

Do you live: Alone At a group home At a hostel With partner
With parents (please circle)

How long have you had the illness? (Please circle)

0 months – 1 year 1 year – 5 years 5 years - 10 years
more than 10 years don't know

What medication, if any, are you taking at the moment for your illness?

.....
.....

Do you have any other illnesses?

.....
.....

If the question of diagnosis has not been completed by a member of staff would you be willing to give the name of your keyworker, who is this?

.....

Do you know their contact number?.....

Your Health and Well-Being

This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. *Thank you for completing this survey!*

For each of the following questions, please tick the one box that best describes your answer.

1. In general, would you say your health is:

Excellent	Very good	Good	Fair	Poor
▼	▼	▼	▼	▼
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

2. The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

Yes, limited a lot	Yes, limited a little	No, not limited at all
▼	▼	▼

- a Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf 1 2 3
- b Climbing several flights of stairs 1 2 3

3. During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
	▼	▼	▼	▼	▼
a <u>Accomplished less</u> than you would like	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
b Were limited in the <u>kind</u> of work or other activities	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

4. During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
	▼	▼	▼	▼	▼
a <u>Accomplished less</u> than you would like	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
b Did work or other activities <u>less carefully than usual</u>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

5. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

Not at all	A little bit	Moderately	Quite a bit	Extremely
▼	▼	▼	▼	▼
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

6. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks...

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
	▼	▼	▼	▼	▼
a. Have you felt calm and peaceful?.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
b. Did you have a lot of energy?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
c. Have you felt downhearted and low?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

7. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?

All of the time	Most of the time	Some of the time	A little of the time	None of the time
▼	▼	▼	▼	▼
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Thank you for completing these questions!

Appendix 3: BDI-II

BDI-II

Date: _____

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today**. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness

- 0 I do not feel sad.
- 1 I feel sad much of the time.
- 2 I am sad all the time.
- 3 I am so sad or unhappy that I can't stand it.

2. Pessimism

- 0 I am not discouraged about my future.
- 1 I feel more discouraged about my future than I used to be.
- 2 I do not expect things to work out for me.
- 3 I feel my future is hopeless and will only get worse.

3. Past Failure

- 0 I do not feel like a failure.
- 1 I have failed more than I should have.
- 2 As I look back, I see a lot of failures.
- 3 I feel I am a total failure as a person.

4. Loss of Pleasure

- 0 I get as much pleasure as I ever did from the things I enjoy.
- 1 I don't enjoy things as much as I used to.
- 2 I get very little pleasure from the things I used to enjoy.
- 3 I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings

- 0 I don't feel particularly guilty.
- 1 I feel guilty over many things I have done or should have done.
- 2 I feel quite guilty most of the time.
- 3 I feel guilty all of the time.

6. Punishment Feelings

- 0 I don't feel I am being punished.
- 1 I feel I may be punished.
- 2 I expect to be punished.
- 3 I feel I am being punished.

7. Self-Dislike

- 0 I feel the same about myself as ever.
- 1 I have lost confidence in myself.
- 2 I am disappointed in myself.
- 3 I dislike myself.

8. Self-Criticalness

- 0 I don't criticize or blame myself more than usual.
- 1 I am more critical of myself than I used to be.
- 2 I criticize myself for all of my faults.
- 3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes

- 0 I don't have any thoughts of killing myself.
- 1 I have thoughts of killing myself, but I would not carry them out.
- 2 I would like to kill myself.
- 3 I would kill myself if I had the chance.

10. Crying

- 0 I don't cry anymore than I used to.
- 1 I cry more than I used to.
- 2 I cry over every little thing.
- 3 I feel like crying, but I can't.

Subtotal Page 1

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11. Agitation

- 0 I am no more restless or wound up than usual.
- 1 I feel more restless or wound up than usual.
- 2 I am so restless or agitated that it's hard to stay still.
- 3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest

- 0 I have not lost interest in other people or activities.
- 1 I am less interested in other people or things than before.
- 2 I have lost most of my interest in other people or things.
- 3 It's hard to get interested in anything.

13. Indecisiveness

- 0 I make decisions about as well as ever.
- 1 I find it more difficult to make decisions than usual.
- 2 I have much greater difficulty in making decisions than I used to.
- 3 I have trouble making any decisions.

14. Worthlessness

- 0 I do not feel I am worthless.
- 1 I don't consider myself as worthwhile and useful as I used to.
- 2 I feel more worthless as compared to other people.
- 3 I feel utterly worthless.

15. Loss of Energy

- 0 I have as much energy as ever.
- 1 I have less energy than I used to have.
- 2 I don't have enough energy to do very much.
- 3 I don't have enough energy to do anything.

16. Changes in Sleeping Pattern

- 0 I have not experienced any change in my sleeping pattern.
- 1a I sleep somewhat more than usual.
- 1b I sleep somewhat less than usual.
- 2a I sleep a lot more than usual.
- 2b I sleep a lot less than usual.
- 3a I sleep most of the day.
- 3b I wake up 1–2 hours early and can't get back to sleep.

17. Irritability

- 0 I am no more irritable than usual.
- 1 I am more irritable than usual.
- 2 I am much more irritable than usual.
- 3 I am irritable all the time.

18. Changes in Appetite

- 0 I have not experienced any change in my appetite.
- 1a My appetite is somewhat less than usual.
- 1b My appetite is somewhat greater than usual.
- 2a My appetite is much less than before.
- 2b My appetite is much greater than usual.
- 3a I have no appetite at all.
- 3b I crave food all the time.

19. Concentration Difficulty

- 0 I can concentrate as well as ever.
- 1 I can't concentrate as well as usual.
- 2 It's hard to keep my mind on anything for very long.
- 3 I find I can't concentrate on anything.

20. Tiredness or Fatigue

- 0 I am no more tired or fatigued than usual.
- 1 I get more tired or fatigued more easily than usual.
- 2 I am too tired or fatigued to do a lot of the things I used to do.
- 3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex

- 0 I have not noticed any recent change in my interest in sex.
- 1 I am less interested in sex than I used to be.
- 2 I am much less interested in sex now.
- 3 I have lost interest in sex completely.

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Subtotal Page 2

Subtotal Page 1

Total Score

Appendix 4:IPAQ

The next few questions will ask you about the time you spent being physically active in the **last 7 days**. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and garden work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the **vigorous** activities that you did in the **last 7 days**. **Vigorous** physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think *only* about those physical activities that you did for at least 10 minutes at a time.

- 1a. During the **last 7 days**, on how many days did you do **vigorous** physical activities like heavy lifting, digging, aerobics, or fast bicycling?

_____ **days per week**

No vigorous physical activities



Skip to question 2a

- 1b. How much time did you usually spend doing **vigorous** physical activities on one of those days?

_____ **hours per day**

_____ **minutes per day**

Don't know/Not sure

- 2a. Think about all the **moderate** activities that you did in the **last 7 days**. **Moderate** activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think *only* about those physical activities that you did for at least 10 minutes at a time.

During the **last 7 days**, on how many days did you do **moderate** physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.

_____ **days per week**

No moderate physical activities



Skip to question 3a

- 2b. How much time did you usually spend doing **moderate** physical activities on one of those days?

_____ **hours per day**

_____ **minutes per day**

Don't know/Not sure

3a. Think about the time you spent **walking** in the **last 7 days**. This includes at work and at home, walking to travel from place to place, and any other walking that you might do solely for recreation, sport, exercise, or leisure.

During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time?

_____ **days per week**

No walking → **Skip to question 4**

3b. How much time did you usually spend **walking** on one of those days?

_____ **hours per day**

_____ **minutes per day**

Don't know/Not sure

4. The last question is about the time you spent **sitting** on weekdays during the **last 7 days**. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

During the **last 7 days**, how much time did you spend **sitting** on a **week day**?

_____ **hours per day**

_____ **minutes per day**

Don't know/Not sure

**Thank you very much for completing this questionnaire.
If you want any more information please contact Jackie
on 01484 471337.**

Craig, C.L., Marshall, A.L., Sjostrom, M., Bauman, A.E., Booth, M.L., Ainsworth, B.E., Pratt, M., Ekelund, U., Yngve, A., Sallis, J.F., Oja, P. (2003). International physical activity questionnaire: 12 country reliability and validity. *Medicine and Science in Sports and Exercise*, 35, 1381-1395.

Appendix 5: Basic Psychological Needs Scale

Please read each of the following items carefully, thinking about how it relates to your life, and then indicate how true it is for you. Use the following scale to respond:

	1	2	3	4	5	6	7			
	not at all true		somewhat true			very true				
1. I feel like I am free to decide for myself how to live my life.				1	2	3	4	5	6	7
2. I really like the people I interact with.				1	2	3	4	5	6	7
3. Often, I do not feel very competent.				1	2	3	4	5	6	7
4. I feel pressured in my life.				1	2	3	4	5	6	7
5. People I know tell me I am good at what I do.				1	2	3	4	5	6	7
6. I get along with people I come into contact with.				1	2	3	4	5	6	7
7. I pretty much keep to myself and don't have a lot of social contacts.				1	2	3	4	5	6	7
8. I generally feel free to express my ideas and opinions.				1	2	3	4	5	6	7
9. I consider the people I regularly interact with to be my friends.				1	2	3	4	5	6	7
10. I have been able to learn interesting new skills recently.				1	2	3	4	5	6	7
11. In my daily life, I frequently have to do what I am told.				1	2	3	4	5	6	7
12. People in my life care about me.				1	2	3	4	5	6	7
13. Most days I feel a sense of accomplishment from what I do.				1	2	3	4	5	6	7
14. People I interact with on a daily basis tend to take my feelings into consideration.				1	2	3	4	5	6	7
15. In my life I do not get much of a chance to show how capable I am.				1	2	3	4	5	6	7
16. There are not many people that I am close to				1	2	3	4	5	6	7
17. I feel like I can pretty much be myself in my daily situations.				1	2	3	4	5	6	7
18. The people I interact with regularly do not seem to like me much.				1	2	3	4	5	6	7
19. I often do not feel very capable.				1	2	3	4	5	6	7
20. There is not much opportunity for me to decide for myself how to do things in my daily life.				1	2	3	4	5	6	7
21. People are generally pretty friendly towards me.				1	2	3	4	5	6	7

Appendix 6: Letter of invite to professionals (study one)

On University headed paper

HHR3/04 University of Huddersfield
Queensgate
Huddersfield
HD1 3DH

01484 471337
j.hepples@hud.ac.uk

Date:

Dear

I am a PhD student at the University of Huddersfield investigating physical activity and quality of life in people with psychosis. My supervisor is Professor Mike Lucock a Consultant Clinical Psychologist for South West Yorkshire Mental Health Trust.

I have received permission from the NHS research committee and research governance to carry out this research. The research entails administering a questionnaire pack about physical activity behaviour and quality of life to people with psychosis. I was hoping it would be possible to come along to your outpatient clinic to administer the questionnaires. I have enclosed the questionnaire pack for you to have a look.

If you are willing for me to come and administer the questionnaires, would it be possible to come along to a team meeting to explain the research? If not I could give you more information.

I would be extremely grateful if you could reply to this letter, either by telephone or e-mail on the details above. If you prefer you could return the reply slip in the enclosed stamped addressed envelope.

Once you reply I will contact you to give you more information and to make arrangements for the visit.

If you would like more information, please do not hesitate to contact me.

Thank you very much for your time.

I look forward to hearing from you

Yours Sincerely

Jackie Hepples

I am willing for you to administer questionnaires in this department.

Name.....Job title.....

Contact details.....

Appendix 7: Participant information sheet: study one

On University headed paper.

21/05/2009

Title of research: Physical Activity and Quality of Life in People with Mental Health Problems.

My name is Jackie and I would like to invite you to take part in a study. Before you decide if you would like to take part you need to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully. Talk to others about the study if you wish. (Part 1 tells you the purpose of this study and what will happen to you if you take part. Part 2 gives you more detailed information about the conduct of the study).

Ask either, family, a member of staff, or the researcher (details or on the bottom of the sheet) if there is anything that is not clear or if you would like more information. Take time to decide if you wish to take part.

The research is investigating people's views of physical activity, particularly those people who have mental health difficulties. This will help us to understand if physical activity affects people's quality of life and if so what the reasons for this might be. As a result of the research, it is hoped guidelines will be produced about physical activity in local mental health services.

Taking part in this research is entirely voluntary. It is up to you to decide and if you wish to take part it will not affect your treatment. After reading this information sheet, you will be able to ask any questions before you are asked to sign a consent form to show you have agreed to take part. You will be able to ask any questions before or after you have signed the consent form. If you decide whilst doing the research that you do not want to finish, you are free to withdraw at any time without giving a reason. The information you have given will be destroyed. This would not affect the care you receive.

Part 1

What will happen to me if I take part?

You will be asked to fill in a questionnaire, with four parts. These will have questions about physical activity, quality of life, mood and how in control of your life you feel. You will be asked to think about your mood and although it is unlikely that this will upset you, if it does, please contact your key worker. In addition it will ask you to complete a few details about yourself. This should take approximately 10-20 minutes to complete.

There will also be some questions about your diagnosis and the medication you take. If you consent, a member of staff will be asked your diagnosis, but this is the only information that they will be asked for. This information is needed as these

things have been found to have an impact on quality of life and may have an impact on the results of the study. All the information you give me, will be kept completely confidential.

You will have 24 hours to consider taking part in the study. You can take the questionnaires away with you and return them in the stamped addressed envelope, or we can arrange to meet next time you are at the centre.

What are the possible disadvantages and risks of taking part?

One possible disadvantage is the time it takes to complete the questionnaires which will be up to 20 minutes.

What are the possible benefits of taking part?

I hope the information we get from this study will help improve the care of people with mental health problems.

Will my taking part in the study be kept confidential?

Yes. I will follow ethical and legal practice and all information about you will be handled in the strictest of confidence. The details are included in Part 2.

This completes part 1. If the information in part 1 has interested you and you are thinking about taking part, please read the additional information in part 2 before making any decision.

Part 2

What will happen if I don't want to carry on with the study?

You can change your mind about taking part at any time. Any information which has been collected from you will not be used and will be destroyed securely.

Complaints

If you have a concern about any aspect of this study, you should ask to speak to the researcher who will do their best to answer your questions. Contact Jackie on 01484 471337. Or you can contact PALS on the free phone number: 0800 587 2108. If you remain unhappy and wish to complain formally, you can do this through the NHS Complaints Procedure. The contact number for South West Yorkshire Mental Health Trust complaints office is: 01924 327160. Or you can e-mail them on complaints@swyt.nhs.uk.

Will my taking part in the study be kept confidential?

All information which is collected about you during the course of the research will be kept strictly confidential and any information collected about you will have your name removed so that you can not be identified. However if the questionnaire identifies that you are at risk to yourself or others, the researcher will have a duty to contact your key worker.

Confidential means that the completed questionnaires will be kept in a locked storage cupboard, that only the researcher will have access to. Any anonymised information stored electronically will be held on the researcher's computer which is password protected and in a secure room.

What will happen to the results of the study?

The results of the study will be written up as a report and a scientific paper might be written. You will not be identifiable in any report or publication.

If you want a copy of this report, please put the address of a place you would like the report sending on the consent form. Or, if you don't want to leave an address you can contact the researcher for a copy of the report in two years time.

Who has reviewed the study?

All research in the NHS is looked at by independent group of people, called a Research Ethics Committee, to protect your safety, rights, well being and dignity. This study has been reviewed and given favourable opinion by Leeds East Research Ethics Committee and the University of Huddersfield Research Ethics Panel.

Further information and contact details

General Information and specific information: Jackie Hepples, 01484 471337
Advice: your key worker or PALS on: 0800 587 2108.

Appendix 8: Participant consent form: study one

On University headed paper.

21/5/2009.

Patient identification number for this study:

Title of project: physical activity and quality of life in people with mental health problems.

Name of researcher: Jackie Hepples

Please initial the following boxes if you agree to them:

1. I confirm that I have read and understood the participant information sheet datedfor the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason, without my medical care or legal rights being affected, any information gained will be destroyed.
3. I understand that a member of staff will be asked for my diagnosis
4. I agree to take part in the above study.
5. I understand that if it is identified that I am at risk to myself or others, my key worker will be informed.
6. I would/would not like to receive a report of the findings of the study.
Please delete as appropriate

If you would like to receive a copy of the report please fill in an address below:

.....
.....
.....
.....
.....

Sign (Participant).....Date.....

Print name.....

Sign (Researcher).....Date.....

Appendix 9: Ethics approval letters

Your SREP Application - APPROVAL - "An investigation into physical activity and ... Page 1 of 1

Your SREP Application - APPROVAL - "An investigation into physical activity and quality of life in people with psychosis: a mixed method study" - Jackie Hepples

Kirsty Thomson

Sent: 31 March 2009 10:43

To: Jacqueline Hepples

Cc: Nigel King

Dear Jackie,

Prof Nigel King (Co-Chair of SREP) has asked me to confirm to you that your SREP application - "An investigation into physical activity and quality of life in people with psychosis: a mixed method study" has received ethical approval from the School of Human and Health Sciences Research Ethics Panel, University of Huddersfield.

With best wishes for the success of your research.

Regards,

Kirsty

(on behalf of Prof Nigel King, Co-Chair of SREP)

Kirsty Thomson
School Research Office (HHRG/01)
School of Human and Health Sciences
The University of Huddersfield
Queensgate
Huddersfield HD1 3DH
Tel: +44 (0) 1484 471156
Email: k.thomson@hud.ac.uk

<https://mail.hud.ac.uk/owa/?ae=Item&t=IPM.Note&id=RgAAAAAEucVI%2f9H9TZ...> 17/05/2012



West Yorkshire
Mental Health Research and Development Consortium

Our Ref: 2009/136/S

West Yorkshire Mental Health R&D Consortium
Research & Development Department
North Wing, St Mary's House,
St Mary's Road
Leeds LS7 3JX

E-mail: john.hiley@leedssoft.nhs.uk
Direct Line: 0113 295 2387
FAX: 0113 2952412

Ms Jackie Hepples
HHR3/04, University of Huddersfield
Queensgate
Huddersfield
HD1 3DH

16 June 2009

Dear Jackie,

**RE: An investigation into physical activity and quality of life in people with psychosis.
A mixed method study.**

Following the recent review of the above project I am pleased to inform you that the above project complies with Research Governance standards, and has been approved by the relevant Consortium Trust management. We now have all the relevant documentation relating to the above project. As such your project may now begin within **South West Yorkshire Mental Health Trust**.

This approval is granted subject to the following conditions:

- You must comply with the terms of your ethical approval. Failure to do this will lead to permission to carry out this project being withdrawn. If you make any substantive changes to your protocol you must inform the relevant ethics committee and us immediately.
- You must comply with the Consortium's policy on project monitoring and audit.
- You must comply with the guidelines laid out in the Research Governance Framework for Health and Social Care¹ (RGF). Failure to do this could lead to permission to carry out this research being withdrawn.
- You must comply with any other relevant guidelines including the Data Protection Act, The Health and Safety Act and local Trust Policies and Guidelines.

¹ Details from:

http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4108962&chk=Wde1Tv

The Consortium members are:

- Bradford District Care Trust
- Leeds Mental Health Teaching NHS Trust
- South West Yorkshire Mental Health NHS Trust
- Leeds Metropolitan University
- University of Bradford
- University of Huddersfield
- University of Leeds

- If you encounter any problems during your research you must inform your Sponsor and us immediately to seek appropriate advice or assistance.
- Research projects will be added to any formal Department of Health research register.

Please note that suspected misconduct or fraud should be reported, in the first instance, to local Counter Fraud Specialists for your Trust. Consortium R&D staff are also mandated to do this in line with requirements of the RGF.

Adverse incidents relating to the research procedures and/or SUSARs (suspected unexpected serious adverse reactions) should be reported using **Trust incident reporting procedures in the first instance and to the chief investigator²**.

They should **also** be reported to:

- The Consortium R&D Department
- the Research Ethics Committee that gave approval for the study
- other related regulatory bodies as appropriate.

You are required to ensure that all information regarding patients or staff remains secure and *strictly confidential* at all times. You must ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice (<http://www.dh.gov.uk/assetRoot/04/06/92/54/04069254.pdf>) and the Data Protection Act 1998. Furthermore you should be aware that under the Act, unauthorised disclosure of information is an offence and such disclosures may lead to prosecution.

Changes to the agreed protocol MUST be approved by both the Trust/s and Research ethics Committee granting initial approval, before any changes in protocol can be implemented. Copies of revised documents must be provided to the R&D Office. Advice on how to undertake this process can be obtained from R&D.

Once you have finished your research you will be required to complete a Project Outcome form. This will be sent to you nearer the end date of your project (Please inform us if the expected end date of your project changes for any reason).

We will require a copy of your final report/peer reviewed papers or any other publications relating to this research. Finally we may also request that you provide us with written information relating to your work for dissemination to a variety of audiences including service users and carers, members of staff and members of the general public. You must provide this information on request.

If you have any queries during your research please contact us at any time. May I take this opportunity to wish you well with the project.

Yours sincerely

² SUSARS – this must be within 24 hours of the discovery of the SUSAR incident

The Consortium members are:

- | | |
|--|--|
| <ul style="list-style-type: none"> • Bradford District Care Trust • Leeds Mental Health Teaching NHS Trust • South West Yorkshire Mental Health NHS Trust | <ul style="list-style-type: none"> • Leeds Metropolitan University • University of Bradford • University of Huddersfield • University of Leeds |
|--|--|



Mr. John Hiley
Research Governance & Programme Manager

The Consortium members are:

- Bradford District Care Trust
- Leeds Mental Health Teaching NHS Trust
- South West Yorkshire Mental Health NHS Trust
- Leeds Metropolitan University
- University of Bradford
- University of Huddersfield
- University of Leeds



National Research Ethics Service

Leeds (East) Research Ethics Committee

Room 5.2, Clinical Sciences Building
St James's University Hospital
Beckett Street
Leeds
LS9 7TF

Telephone: 0113 2065652
Facsimile: 0113 2066772

27 May 2009

Miss Jackie Hepples
PhD Student
University of Huddersfield
HHR3/04 University of Huddersfield
Queensgate
Huddersfield
HD1 3DH

Dear Miss Hepples

Full title of study: An investigation into physical activity and quality of life in people with psychosis: A mixed method study.
REC reference number: 09/H1306/52

Thank you for your letter of 19 May 2009, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Vice-Chair.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

For NHS research sites only, management permission for research ("R&D approval") should be obtained from the relevant care organisation(s) in accordance with NHS research governance arrangements. Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>.

This Research Ethics Committee is an advisory committee to Yorkshire and The Humber Strategic Health Authority
The National Research Ethics Service (NRES) represents the NRES Directorate within
the National Patient Safety Agency and Research Ethics Committees in England

Where the only involvement of the NHS organisation is as a Participant Identification Centre, management permission for research is not required but the R&D office should be notified of the study. Guidance should be sought from the R&D office where necessary.

Sponsors are not required to notify the Committee of approvals from host organisations.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Covering Letter		02 April 2009
Application		02 April 2009
Investigator CV		02 April 2009
CV of Professor Mike Lucock		
Summary of Protocol	1	02 April 2009
Letter of Invitation to Participants: Study 1	1	02 April 2009
Letter of Invitation to Participants: Study 2	1	02 April 2009
Letter of Invitation to Participants: Study 3	1	02 April 2009
Letter of Invitation to Service Managers	1	02 April 2009
Interview Schedule: Study 2	1	02 April 2009
Focus Group Guide: Study 3	1	02 April 2009
Questionnaire: Demographic Information	1	02 April 2009
Questionnaire: SF-12 Quality of Life		
Questionnaire: Beck Depression Inventory		
Questionnaire: The Basic Psychological Needs Scale		
Questionnaire: International Physical Activity Questionnaire		
A census of Mental Health clusters in South West Yorkshire Mental Health Trust		02 April 2009
Peer Review		26 March 2009
Compensation Arrangements		06 October 2008
Approval e-mail from University of Huddersfield		31 March 2009
Letter from Sponsor		31 March 2009
Response to Request for Further Information		19 May 2009
Participant Consent Form: Study 3	2	21 May 2009
Participant Consent Form: Study 2	2	21 May 2009
Participant Consent Form: Study 1	2	21 May 2009
Participant Information Sheet: Study 3	2	21 May 2009
Participant Information Sheet: Study 2	2	21 May 2009
Participant Information Sheet: Study 1	2	21 May 2009
Protocol	2	21 May 2009

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

This Research Ethics Committee is an advisory committee to Yorkshire and The Humber Strategic Health Authority
The National Research Ethics Service (NRES) represents the NRES Directorate within the National Patient Safety Agency and Research Ethics Committees in England.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Service website > After Review

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

The attached document "*After ethical review – guidance for researchers*" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

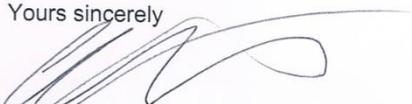
We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nres.npsa.nhs.uk

09/H1306/52

Please quote this number on all correspondence

With the Committee's best wishes for the success of this project

Yours sincerely



**Dr John Holmes
Chair**

Email: Amy.Beckitt@leedsth.nhs.uk

Enclosures: "After ethical review – guidance for researchers"

Copy to: Professor Nigel King, University of Huddersfield

R&D Office for West Yorkshire Mental Health Consortium

Appendix 10: Instructions to professionals

1. Ask participants if they will be interested in completing a questionnaire about physical activity and quality of life. I need participants who range from doing no activity to being active.
2. Give the participant information sheet to the participant to read or help them through it, emphasising that the information will be kept confidential, no member of staff will see the responses as a pre – post envelope is provided that will be returned to the researcher. It should only take a maximum of 20 minutes, if they have any questions my phone number is on the participant information sheet.
3. If they still seem interested after having read the participant information sheet, ask them if it's OK if you put their diagnosis on the questionnaire (it's the first question on the questionnaire). It is explained on the information sheet that a member of staff will be asked for this. If they agree and you know put it on.
 - however for confidentiality purposes instead of stating the diagnosis, a code could be used:

1 = Schizophrenia; 2= Bipolar disorder; 3 = Schizophreniform disorder; 4 = Schizo – affective disorder; 5 = major depression with psychotic features; 6 = other

If the participant disagrees with the diagnosis, could put mental health team think that this patient has..... however the patient thinks that.....

4. Explain that the participant does not have to decide if they want to complete the questionnaire straight away and they should have 24 hours to decide if they wish to complete the questionnaire.
5. Explain that if they do decide to complete the questionnaire, they have to initial the boxes and sign the consent form before completing the questionnaire.
6. Once the questionnaire is complete, the participant is to put this and the consent form in the pre-paid envelope. They can either send this or they can give it to you on your next visit and you could send it to me.
7. On your next visit I would be very grateful if you could ask if they have completed the questionnaire – if they have decided not to complete it, this is fine, but if they haven't got around to it yet, a little reminder may help!
8. If it's possible keep a record of how many questionnaires were given, so I can see what the return rate is like.

Thank you for your assistance with this project.
Jackie Hepples
01484 471337

Appendix 11: Interview guide: study two

Brief

Hi How are you doing today? As described to you beforehand, this interview will be about you and your physical activity experiences. It should take no longer than an hour and you can stop the interview at any point. I will be recording the interview on this (show them MP3 player), is this alright with you? If you want to ask me any questions please feel free to ask at any point.

1. Describe what you do to keep active.
 - how long do you do this?
 - could you describe how much effort you put in.
2. How does this activity make you feel? Give examples.
3. Think of one particular activity you did last week, describe how you felt before, during and after the activity.
4. Describe your physical activities of last week.
 - is this representative of every week, why?
5. Describe to me your physical activity patterns, i.e. do they alter depending on the season, how you are feeling?
 - can you give me examples?
6. What PA did you do before you became ill? If this has changed why do you think this is?
 - can you give examples?
7. Does PA have an impact on your illness? Can you tell me about a situation where you feel this has been the case?
8. Does PA have an effect on your day to day life? – if yes how and in what ways? If not why not?
9. What might prevent you from being active? Why?
10. What are the benefits for you of taking part in physical activity?
 - can you expand on why these are benefits?
 - What aspects of the physical activity have lead to these benefits?
11. Is the activity you do, provided by the trust? Do you do activities that are provided by other agencies/charities?
 - who told you about it?
 - did you need a lot of encouragement to participate, why?
 - what are your views on these activities?
 - what are your experiences of these activities?
12. What activities would you like to see provided?
 - Why?

- How would these benefit you and others?
- Give examples.

Debrief

Thank you very much for participating. How are you feeling? (If the participant is upset the participant will be asked if they want me to contact anyone for them. I will have the contact details of the keyworker and PALS for them).

Appendix 12: Consent to researcher contact: study two

On university headed paper

HHR3/04 University of Huddersfield
Queensgate
Huddersfield
HD1 3DH

01484 471337
j.hepples@hud.a.cuk

Date:

Dear

I am a research student at the University of Huddersfield investigating physical activity and mental health.

It has been suggested by..... that you may be interested in taking part in an interview to discuss your experiences of physical activity.

If you are interested please read the enclosed information sheet and either put your form in the confidential box at the day centre, return the form to the above address, or e-mail or telephone Jackie. The contact information is above.

If you do not want to participate, this is perfectly fine and your care will not be affected.

If you would like any more information please call Jackie on 01484 471337.

Thank you for your time

Yours Sincerely

Jackie Hepples

I have read the information sheet and I am happy for Jackie to contact me about the interviews.

My name is:

My phone number is (you don't have to give this if you don't want):

The next time I will be at the day centre is:

Signed:

Appendix 13: Participant information sheet: study two

On university headed paper

21/05/2009

Title of research: Physical Activity and Quality of Life in People with Mental Health Problems.

My name is Jackie and I would like to invite you to take part in a study. Before you decide if you wish to take part you need to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully. Talk to others about the study if you wish. (Part 1 tells you the purpose of this study and what will happen to you if you take part. Part 2 gives you more detailed information about the conduct of the study).

Ask me if there is anything that is not clear or if you would like more information. Take time to decide if you wish to take part.

The research is investigating people's views of physical activity, particularly those who have mental health difficulties. I am going to investigate this by asking people some questions about physical activity and how this affects their life and mental health. This will help us to understand if physical activity affects people's well-being and if so what the reasons for this might be. This will help to develop guidelines about physical activity in mental health services.

Taking part in this research is entirely voluntary. It is up to you to decide, if you wish to take part, this will not affect your treatment.

A member of staff has suggested which people might be interested and able to take part so I am giving the information sheet to these people. After you have read the information sheet, if you think you may wish to participate, please ask any questions and take time to consider before you complete the form entitled 'consent to researcher contact'. If you wish you can leave your telephone number and I will phone you to arrange a time to meet. If you don't want to leave your telephone number I will arrange a time to meet you at the day centre. I will come to the day centre on a few occasions so that you get to know me before the interview takes place. When I meet you for the interview I will ask you if you have any questions and if you have had enough time to consider taking part before I ask you to sign a consent form to show you have agreed to take part. You are free to withdraw at any time without giving a reason. This would not affect the care you receive.

Part 1

What will happen to me if I take part?

You will be asked to take part in an interview with me about physical activity or exercise. You will tell me about whether you think physical activity benefits you and if it helps your illness. You will talk about what sorts of physical activity you do and

what might prevent you from being active. This should take no more than an hour. These interviews will be tape-recorded with your permission. In addition you will be asked a few details about yourself.

You can choose whether you would like The interview to take place either at a confidential room at Fieldhead hospital, or at a private room at the day centre.

What are the possible disadvantages and risks of taking part?

One possible disadvantage is the time it takes to participate in the interview.

What are the possible benefits of taking part?

The information I get from this study might help improve the care of people with psychosis. In addition it might help you to talk through the benefits of physical activity.

Will my taking part in the study be kept confidential?

Yes. I will follow all ethical and legal practice and all information about you will be handled in the strictest confidence. The details are included in Part 2.

This completes part 1. If the information in part 1 has interested you and you are thinking about taking part please read the additional information in part 2 before making your decision.

Part 2

What will happen if I don't want to carry on with the study?

You can stop the interview at any point. The information which has been collected will not be used and will be securely destroyed.

Complaints

If you have a concern about any aspect of this study, you should ask to speak to me Jackie on 01484 471337 and I will do my best to answer your questions. If you remain unhappy and wish to complain formally, you can do this through the NHS Complaints Procedure. The contact number for South West Yorkshire Mental Health Trust complaints office is: 01924 327160. Or you can e-mail them on complaints@swyt.nhs.uk.

Will my taking part in the study be kept confidential?

The interviews will be transcribed and your name will be replaced with a different one. Once the interviews have been transcribed the recordings will be erased. Any information that does contain your name, such as the consent form will be kept in a locked cabinet in the researcher's office. I am the only person who has a key to this cupboard. The information gained from the interviews will be put into themes and coded. The transcribed interviews will be kept on a password protected private computer in a locked room. Your name will not be on this.

Some of the quotes that you have said in the interviews may be used in the report or in papers. However your name will not be used alongside the quote. Instead a

replacement name will be utilised. The transcripts will be kept for 10 years in a locked cupboard. After this period the interview transcripts will be shredded.

All information which is collected about you during the course of the research will be kept strictly confidential and any information about you will have your name and address removed so that you can not be recognised. Any anonymised information stored electronically, will be held on the researcher's computer which is password protected and in a secure room.

The only circumstance in which I would tell a member of staff about the content of the interview, is if you tell me you are at risk to yourself or others. I would then have a duty to inform your key worker.

What will happen to the results of the study?

The results of the study will be written into a report and a scientific paper might be written. The aim of the study is to help develop guidelines about physical activity in people with psychosis. You will not be identifiable in any report or publication. If you want a copy of this report, on the consent form please put the address of a place you would like the report sending to. Or, if you don't want to leave an address you can contact me for a copy of the report in 2 years time.

Who has reviewed the study?

All research in the NHS is looked at by independent group of people, called a Research Ethics Committee to protect your safety, rights, well being and dignity. This study has been reviewed and given favourable opinion by Leeds East Research Ethics Committee and the University of Huddersfield Research Ethics Panel

Further information and contact details

General Information and specific information: Jackie Hepples, 01484 471337
Advice: your keyworker or PALS on: 0800 587 2108

Appendix 14: Participant consent form: study two

On university headed paper

21/5/2009

Patient identification number for this study:

Consent Form

Title of project: Physical activity and quality of life in people with mental health problems

Name of researcher: Jackie Hepples

Please initial the following boxes if you agree to them:

- 1. I confirm that I have read and understood the participant information sheet dated for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

- 2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason, without my medical care or legal rights being affected. Any information about me will then be destroyed.

- 3. I understand that quotes from the information that I give may be used in the report and/or publication. However my name will not be used.

- 4. I understand that the interviews will be recorded.

- 5. I agree to take part in the above study.

- 6. I understand that if it is identified that I am at risk to myself or others, my key worker will be informed

- 7. I would/would not like to receive a report of the findings of the study.
Please delete as appropriate

If you would like to receive a copy of the report please fill in an address below:

.....
.....
.....

Sign (Participant).....Date.....

Print name.....

Sign (Researcher).....Date.....

Appendix 15: Templates

Template one

1.1 Control of the illness

Battle of the mind
Battles voices
Better than being ill
Calms the mind
Control over thoughts
Coping with the illness
Distraction from voices and hallucinations
PA intensity
Fewer bad days
Helps restore faith in humans
Illness reduces confidence
Improves depression
Overcomes lethargy
Reduces paranoia
Confidence to overcome prejudice

1.2 Improves mental well-being "feel-good factor"

Improved competence
Achievement
Challenge
Improved self-image
Reward
Breaks the inertia
Clear anger-mania-high-aroused
Competitive
Contribution to society
Demanding
Enjoyment
Excitement
Length of feel-good
Induces energy
Mood
Quality of life - well-being
Release
Responsibility
Physical aspects of exercise
Tired
Heat

1.3. Strive for normality

Feel normal

Focus on reality
Regain the natural balance
Self-preservation
Sense of self
Self prior to exercise
Self prior to diagnosis
Self post diagnosis

1.4 Coping with medication

Side effects of medication
Lethargy and inertia
Weight gain
Balance of medications and life
Positives of medication

1.5 Physical Health

Healthier
Improved fitness
Improves agility
Increase muscle
Reduced cholesterol
Weight loss

1.6 Platform for future aspirations

Exercise as platform to recovery
Future aspirations
Platform to try new skills
Sporting aspirations

1.7. Isolation

Human contact
Social support-positive influences

1.8 Coping with everyday

Coping with everyday life
Difficulty of normal routine
everyday challenges
Physical activity is bonus to daily living

1.9 Exercise experience

Adrenaline

Exercise high
First exercise session
Fear
Heat
Physical effects of exercise
Post-exercise routine
Pre-exercise routine and emotions
Sweat
Thought process - weighing up of pro's and cons

2. Types of exercise and routines in relation to illness

Current exercise regime
Exercise as transport
Exercise on medications
Exercise programme - procedure
Exercise routine on bad day
Exercise routine prior to diagnosis- medication
Routine prior to any known symptoms
Group vs individual sport
Hospital PA
Intensity
Leisure physical activity
Sport
Seasons-weather
Voluntary work physical activity
Work related physical activity

3. Motivators

Illness
Avoid voices
Depression
Frustration with inertia
Memory of illness
mental illness
Voices
Lethargy
Thoughts of improved feelings
Anger
Athletic identity
Boredom
Cues for motivation

Desperation - don't know what else to do
 Equipment to hand
 Exercise memory
 Facilitation by mental health services
 Access to facilities
 Instructor support
 Mental health services vs 'normal' services
 Reduced cost
 Transport
 Facilities
 Guilt
 Healthier
 Look good
 motivation to change
 exercise buddy
 Instructor
 Reminders and reviews
 To impress instructor
 negative physical comments from GP
 Poor physical health
 Weight loss
 Previous experience
 Social support
 Unsure of motivation

4. Barriers

Illness
 Inertia
 Confidence
 Rough day
 Medication
 Fear/paranoia
 Symptoms
 Time
 Too competitive
 Mental health services
 Supervised exercise
 No reminder
 No transport
 Inconsistent group
 General motivation
 No mental barriers
 No exercise buddy
 Laziness
 Groups of people
 Equipment
 Difficulty
 Cost-also positive
 Boredom
 Body image

5. Exercise, risks, cautions and recommendations

Exercise is not a cure
 Exercise is not for everyone
 Exercise not sufficient alone
 Exercise needs to be autonomous
 Gradual improvement over illness-symptoms
 Gradual increase in exercise
 Negative aspects of exercise
 Injury
 Negative frame of mind-reduces confidence
 Physical problems
 Too much exercise-stress
 Physical activity environment
 Recommendation

6. Explanations for improvement

Clears head
 Distraction
 Endorphins-chemicals
 Heat
 Improved body image-
 Body confidence
 Improved fitness
 Improved oxygen flow

7. Other tried mechanisms

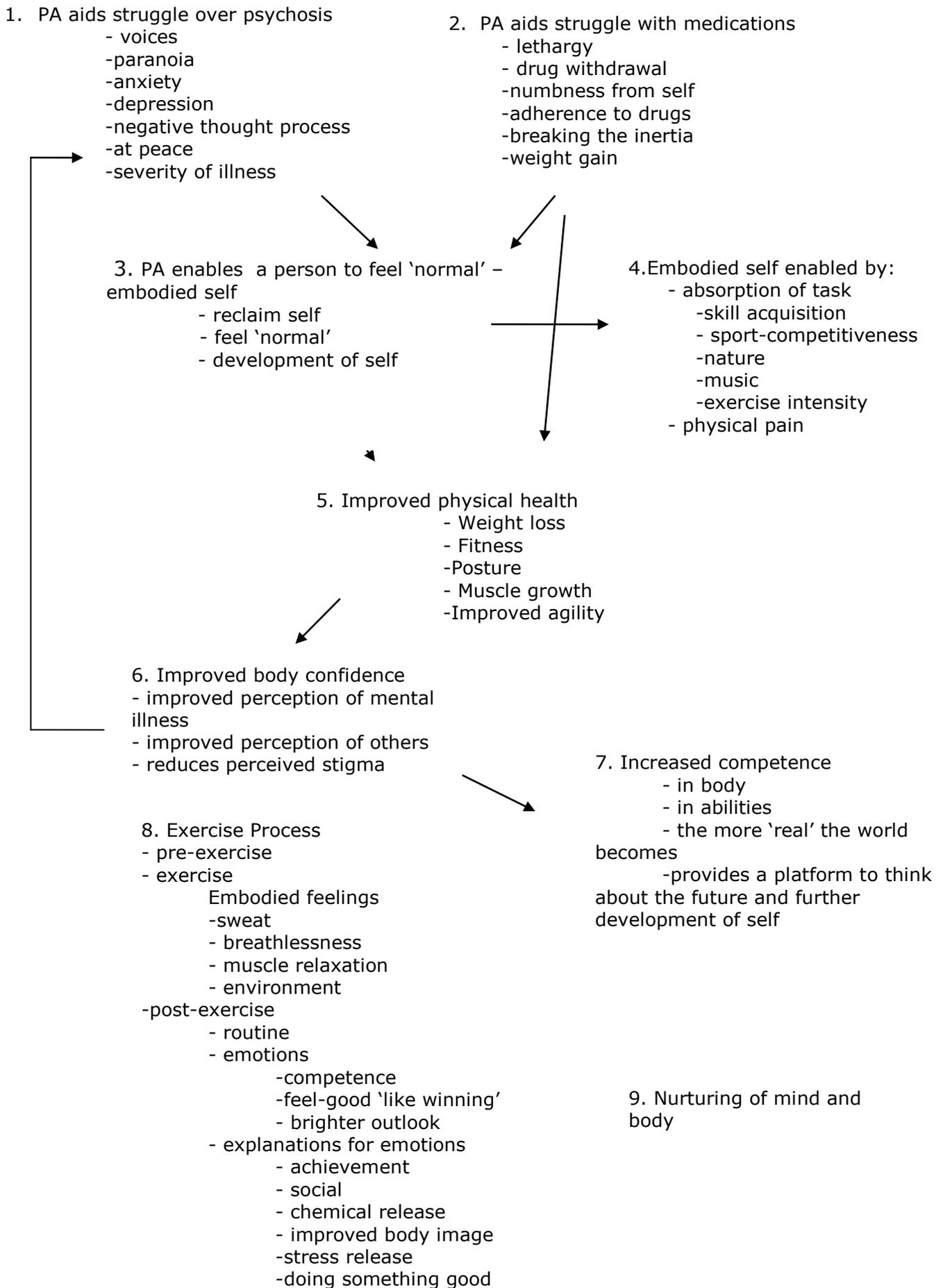
Other attempted coping mechanisms

8. Experience of staff and PA

Advise rest
 Attitude to physical activity
 Disagreement with professional view
 Encouragement for PA
 Lack of meaningful advice - information
 Change in inadequate psychiatrist
 professional advice

Require more advice
 Seek information
 Straight talking professionals
 Views of professionals

Template two



Template three

1. Cocooned in a web of lethargy and tangled thoughts: Embodiment

The struggle to be motivated and do

- Impact of illness severity
- Impact of drug treatment
- Home care arrangements
- Frustration with lethargy

Tangled thought processes

- Paranoia
- Desperation

2. Experiencing a snapshot of reality: Spatiality

Preparation

The act of 'doing': feeling real

- PA and the environment
- Too much PA

3. Being 'normal': Relationality

Moving away from the notion of 'me' and 'them'

- Helping re-integration
- Developing a new sense of self
- Confidence
- Having hope for the future

PA as treatment

- Chemical release
- Stress release

Dance as if no-one is watching: Temporality

PA as time out from a focus on symptomology/negative life issues

- Walking negative thoughts out of me
- Mind over matter
- Skill acquisition
- Being in the Zone
 - Environment
 - Presence of others

Appendix 16 Focus group question guide

Brief

Hi everyone. As you are already aware, this focus group will be discussing your perceptions and experiences of physical activity for SUs with psychosis. I will be facilitating the focus group and have an interview guide, which I will use as a guide and will use prompts where necessary. I will also make sure that the discussion doesn't go too much off course, and try and encourage everyone to have an equal say. However I encourage you to discuss the issues freely amongst yourselves.

I will be recording the interview on this MP3 player (show them it) I hope this is OK with everyone?

To begin, could everyone just introduce themselves, by giving their name and their role within South West Yorkshire Mental Health Team.

1. What physical activity services are you aware of for SUs?
- any specifically for those with psychosis?
2. Why do you think these services are/are not provided?
3. What are your experiences of physical activity in people with psychosis? – why do they do/not do it/why should they do/not do it?
4. How do you think physical activity would affect somebody with psychosis, if at all?
5. What would the benefits be of introducing physical activity services to people with psychosis, if any?
6. How can this be achieved?
7. What do you perceive to be the problems of implementing physical activity in people with psychosis?
8. Is it feasible?
9. Do you think it would benefit or worsen the service you are providing to SUs. Why?
10. What do you think prevents people with psychosis from being active?
11. What do you do in terms of physical activity?

All the above questions will ask for practical examples.

Debrief

Thank you very much for taking part, is there anything you would like to ask me?

Appendix 17: Invitation to participate: study three

On university headed paper

HHR3/04 University of Huddersfield
Queensgate
Huddersfield
HD1 3DH

01484 471337
j.hepples@hud.a.cuk

Date:

Dear

I am a PhD student at the University of Huddersfield investigating physical activity and psychosis.

It has been suggested by..... that you may be interested in taking part in a focus group to discuss your views and experiences of physical activity in people with psychosis.

If you are interested please read the enclosed information sheet and either return the form, or e-mail or telephone Jackie. The contact information is above. The focus group will take place on.....

If you would like any more information please call Jackie on 01484 471337.

Thank you for your time

Yours Sincerely

Jackie Hepples

I would like to take part in the physical activity and psychosis focus group.

Signed

Printed name.....

Phone number:

e-mail:

Appendix 18: Participant information sheet: study three

On university headed paper

21/05/2009

Title of research: Physical Activity and Quality of Life in People with Mental Health Problems.

My name is Jackie and I would like to invite you to take part in a study. Before you decide if you would like to take part you need to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully.

Ask me if there is anything that is not clear or if you would like more information. Take time to decide if you wish to take part.

The research is investigating people's views of physical activity, particularly those who have a diagnosis of psychosis. I am going to investigate this by interviewing SUs but I also want to ask mental health staff their perceptions and experiences of physical activity in people with psychosis and by having a discussion about what already exists, what could be done and the perceived benefits and barriers to implementing physical activity.

Taking part in this research is entirely voluntary. It is up to you to decide. I will describe the study and you can read through the information sheet, and I can then answer any of your questions. If you agree to take part, I will then ask you to sign a consent form to show you have agreed to take part. You are free to withdraw at any time without giving a reason.

Part 1

What will happen to me if I take part?

You will take part in a focus group with myself and my supervisor, Professor Mike Luccock and other NHS staff who work in mental health, about the perceived benefits and barriers of physical activity in people with psychosis. There will be a discussion about what is already available and what would be feasible to implement. The focus group should take no more than an hour and will be tape-recorded.

What are the possible disadvantages and risks of taking part?

One possible disadvantage is the time it takes to participate in the focus group, which will be about one hour.

What are the possible benefits of taking part?

It is hoped that local guidelines will be produced as a result of the focus groups with the staff and interviews with the SUs.

Will my taking part in the study be kept confidential?

Yes. I will follow ethical and legal practice and all information about you will be handled in confidence. The details are included in Part 2.

This completes part 1. If the information in part 1 has interested you and you are considering participation please read the additional information in part 2 before making any decision.

Part 2

What will happen if I don't want to carry on with the study?

You can stop your participation in the focus group at any point. The information which has been collected will not be used and the information will be securely destroyed.

Complaints

If you have a concern about any aspect of this study, you should ask to speak to Jackie the researcher, on 01484 471337. She who will do her best to answer your questions. If you remain unhappy and wish to complain formally, you can do this through the NHS Complaints Procedure, The contact number for South West Yorkshire Mental Health Trust complaints office is: 01924 327160. Or you can e-mail them on complaints@swyt.nhs.uk.

Will my taking part in the study be kept confidential?

The interviews will be transcribed using a different name to yours. Once the interviews have been transcribed the recordings will be erased. Any information that does contain your name, such as the consent form will be kept in a locked cabinet in my office. The only person who has a key to this cupboard is myself, Jackie. The information gained from the interviews will be put into themes and coded.

Some of the quotes that you have said in the focus groups may be used in the report or in papers. However your name will not be used alongside the quote, the pseudonym will be utilised. The transcripts will be kept for 10 years in a locked cupboard. After this period the interviews will be shredded

All information which is collected about you during the focus group will be kept strictly confidential and any information about you which leaves the site will not have your name or address on it so that you will not be recognised. The other participants of the focus group will be asked to respect the confidentiality of other's in the focus group.

Any data will be stored electronically, on the my University computer which is password protected.

What will happen to the results of the study?

The results of the study will be written into a report and a scientific paper might be written. One of the aims of the study is to develop local guidelines about physical activity in people with psychosis. You will not be identifiable in any report or

publication. If you would like a copy of the report, please write an address on the consent form where you would like the information sending.

Who has reviewed the study?

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee to protect your safety, rights, well being and dignity. This study has been reviewed and given favourable opinion by Leeds East Research Ethics Committee and the University of Huddersfield Research Ethics Panel.

Further information and contact details

General Information and specific information: please contact Jackie Hepples on:

01484 471337

Advice: Jackie Hepples

Appendix 19: Participant consent form: study three

On University headed paper

Patient identification number for this study:

Title of project: Physical activity and quality of life in people with mental health problems

Name of researcher: Jackie Hepples

Please initial the following boxes if you agree to them:

1. I confirm that I have read and understood the information sheet dated For the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason, without my legal rights or work being affected.
3. I understand that quotes from the information that I give may be used in the report and/or publication. However my name will not be used.
4. I understand that the interviews will be recorded.
5. I agree to take part in the above study.
6. I would/would not like to receive a report of the findings of the study.
Please delete as appropriate

If you would like to receive a copy of the report please fill in an address below:

.....
.....
.....

Sign (Participant).....Date.....

Print name.....

Sign (Researcher).....Date.....