Older People's Adherence to Community-Based Group Exercise Programmes: A Multiple-Case Study

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Abstract - Clare Killingback

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Physical inactivity is a global phenomenon, with estimates of one in four adults not being active enough to achieve health benefits, thus heightening the risk of developing non-communicable diseases. In order to realise the health and wellbeing gains associated with physical activity the behaviour must be sustained. Community-based group exercise programmes (CBGEP) utilising social support have been shown to be one means of not only increasing activity levels for older people, but sustaining physical activity.

A mixed-methods systematic review revealed a gap in the literature around older people's long-term adherence to real-life CBGEP within a UK context. This study therefore sought to address this gap by understanding older people's ongoing adherence to CBGEP with a view to gaining further insight about which factors contribute to enabling people to sustain their physical activity levels.

A multiple case study research design was employed to understand older people's (≥ 60 years, n=27) adherence (≥ 69%, for ≥ 1 year) to three current CBGEP in the South- West of England. Qualitative data (participant observation, focus groups, documents, and interviews) were collected and analysed using inductive thematic analysis followed by the analytic technique of explanation building. In order to gain deeper insights into adherence, the humanisation framework was utilised in an *a priori* manner to further understand adherence from a humanising perspective. Quantitative data were analysed using descriptive statistics and used to set the context of the study.

This study found that older people's adherence to CBGEP was mediated through six factors: factors relating to the individual, the instructor, programme design, social features, participant perceived benefits, and a humanised exercise environment. These all served to explain older people's adherence to CBGEP.

The humanising qualities of these CBGEP must be considered if we wish to support older people in sustaining a physically active lifestyle as they age. These findings are of interest to practitioners and policy makers in how CBGEP serve to aid older people in maintaining a physically active lifestyle with a view to preventing non-communicable diseases and in maintaining social connectivity.

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Abbreviations

BMI	Body Mass Index
CAQDAS	Computer-assisted qualitative data analysis software
CASP	Critical Appraisal Skills Programme
CBGEP	Community-based group exercise programmes
CC	Carol Clark (1st Supervisor)
CK	Clare Killingback
Eppi-Centre	Evidence for Policy and Practice Information and Co-ordinating Centre
FT	Fotini Tsofliou (2nd Supervisor)
GP	General Practitioner
IMD	Index of Multiple Deprivation
IQR	Inter quartile range
JM	Jane Murphy (3rd Supervisor)
LSNS-6	Lubben Social Network Scale
MEDAS	Mediterranean Diet Adherence Screener
MSPSS	Multiple Scale of Perceived Social Support
NCD	Non-communicable diseases
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
ONS	Office for National Statistics
PA	Physical activity
RCT	Randomised controlled trial
REP	Register of Exercise Professionals
SD	Standard deviation
SES	Socio-economic status
UK	United Kingdom
USA	United States of America
WHO	World Health Organisation

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1. Introduction

1.1. Overview

The aim of this study was to understand older people's ongoing adherence to community-based group exercise programmes (CBGEP) with a view to gaining further insight about which factors contribute to enabling people to sustain their physical activity (PA) levels. This is important because maintaining a physically active lifestyle is influential in the prevention of non-communicable diseases (NCD) which can negatively affect an individual's health and life span (O'Donnell 2012).

This chapter commences by describing the author's research journey which led to the development of this current study. The background to the study is further set by introducing the global problem of physical inactivity and additionally contextualised by outlining factors which influence older people's physical activity levels. The importance of social determinants of health and wellbeing are presented before explaining the potential role of CBGEP in helping older people maintain a physically active and social connected lifestyle. This chapter will conclude with a summary outline of the chapters in this thesis.

1.2. The Author's Research Journey

This research journey has been influenced by my training as a physiotherapist, a wide range of clinical experience in the United Kingdom and Middle East, and my love of older people. The most defining factor however, was my experience of working as a community physiotherapist for an integrated community rehabilitation team in a small market town in rural Dorset. Being an integrated team meant that I had several roles: to prevent admissions into an acute hospital; facilitate early discharge and to treat individuals who for various reasons, were unable to attend an out-patient physiotherapy appointment.

During my time in this role I met many patients who appeared to struggle with loneliness. This would present itself in two clear ways. Firstly, it would be difficult to leave someone's home after an assessment because some patients would talk continually. At first I thought I had happened upon many extroverted patients but I soon realised that it was often because they were lonely. I may have been the only person they had seen all week, or longer. The other expression of loneliness I came across was more disturbing. This would be patients who would openly cry. Sometimes this was due to grief at the recent loss of a loved one, who they had

been married to for over 50 years. Other times it was difficulty in coping with life, ageing, or a recent illness which had made regular activities of daily living more challenging. In some situations, a little more practical support with washing, dressing, or meals would help patients cope. Yet the deeper level of emotional support they needed was more difficult to assist with.

The core skills of a physiotherapist lie in using exercise, education, and advice to help restore movement and maintain health and independence. However, if I am honest, I do not think many of my patients improved greatly, (apart from the more routine orthopaedic referrals). I understand that some patients were too frail and it was not about seeing great improvements, but about maintaining function. Nonetheless, I felt there was more which could have been done to help people stay active and socially connected. Sadly, within the structure and pressure of a busy National Health Service (NHS) team with long waiting lists, this was not always possible.

These experiences taught me two things which I am aware are rather obvious; however, they were significant in my journey towards this study. The first is that we need to find ways to help older people stay active and maintain independence in daily life. This is important because maintaining a physically active lifestyle can help prevent many non-communicable diseases which can contribute to more years of disability at the end of a person's life. Secondly, there are far too many isolated, lonely older people. There surely has to be a way to bring these two aspects together. Thus, I am fortunate to have had the opportunity to focus on studying community-based group exercise programmes. Perhaps for some individuals these programmes might be the way forward in supporting the maintenance of physical activity and social connectivity. To build upon these thoughts this thesis begins by drawing on the academic literature to set the background to the study.

1.3. Background to the Study

1.3.1. Physical Inactivity

Physical inactivity is a global phenomenon, with estimates of one in four adults not being active enough to achieve health benefits (WHO 2015). The consequences of physical inactivity cannot be disregarded, with heightened risk of developing chronic, degenerative diseases such as cardiovascular disease, cancer, respiratory diseases, and diabetes (WHO 2010). These NCD are said to account for almost two thirds of deaths globally (WHO 2010). As such, physical inactivity has been said to

be “one of the most important public health problems of the 21st century” (Blair 2009, p. 1).

The public health burden of physical inactivity in the UK is substantial, with an estimated cost to the NHS of approximately £1.06 billion per year (National Institute for Health and Care Excellence, NICE 2013). Given that there is a booming elderly population globally (estimated to be two billion worldwide by 2050) (United Nations Department of Economic and Social Affairs 2013) the World Health Organisation (WHO) has now said the challenge of NCD has reached epidemic proportions (WHO 2010). Considering this global growth of an ageing population, it is imperative that action be taken to reduce the burden of NCD and consider not only life span but health span.

Targeting key lifestyle risk factors, such as poor diet, physical inactivity, smoking and alcohol abuse would prevent an estimated 80% of heart disease, stroke and type 2 diabetes, as well as over 30% of cancers (WHO 2010). If it were possible to postpone the onset of chronic illness through the prevention of NCD, then this reduction in the years of disability at the end of life would lead to a subsequent increase in quality of life, a reduction in disease burden, reduced healthcare costs, added productive years to society, and a somewhat less troubled senescence (O’Donnell 2012). In some instances, such as the prevention of diabetes and obesity, lifestyle interventions, for example, increasing PA levels can be more effective than the use of medication (Herman 2013).

The role of sustained participation in PA throughout the life-course provides some of the best prospects for ageing well (Sun et al. 2013). The wide ranging health benefits of PA for older people are well established (Blair 2009). It is acknowledged that avoiding a sedentary lifestyle may delay the development of chronic disease and disability (Chodzko-Zajko et al. 2010). This in turn would prolong years of active life and reduce functional limitations (Cress et al. 2005).

Regular PA has been shown to reduce the risk of chronic diseases such as ischaemic heart disease, hypertension, type 2 diabetes, osteoporosis, some cancers, and depression (Frew et al. 2014). Maintaining a PA lifestyle has also been shown to reduce the risk of all-cause mortality i.e. all deaths, regardless of cause (Lollgen et al. 2009; Woodcock et al. 2011). In addition, a growing body of evidence is also developing regarding the cognitive benefits of sustained PA in older people as well as improved quality of sleep, health-related quality of life, and lower risk of falls (Blair 2009; Frew et al. 2014).

Despite this strong evidence base, many people are insufficiently active to achieve health gains (Blair 2009). Global and UK activity guidelines for older people recommend 150 minutes of weekly exercise, accumulated in bouts of 10 minutes or more, at a moderate-intensity to maintain good health (Bull et al. 2010). In addition, older people should undertake muscle strengthening activities involving the major muscle groups on two or more days of the week (Bull et al. 2010). For those at increased risk of falls, balance training on two or more days per week is recommended (Bull et al. 2010). However, records show that in England, only 57% of men and 52% of women (aged 65 – 74) were achieving the target of 150 minutes of moderate intensity exercise per week. For those aged 75 – 84 years this reduced to 43% of men and only 21% of women (Health Survey for England 2013). This highlights the trend that people become less physically active as they age (Baert et al. 2011; Sun et al. 2013).

The deleterious effects of not maintaining a physically active lifestyle are not readily, or immediately apparent. It is only after many years that chronic NCD such as type 2 diabetes or coronary artery disease begin to manifest their destructive consequences (Chao et al. 2000). Hence, efforts need to be made to engage individuals in PA across their lifespan. Nevertheless, in spite of PA levels declining with age, health benefits of sustained PA are possible even if it is not started until later in life (Buman et al. 2010; Hamer et al. 2014). In a prospective study (n=3454) from the English Longitudinal Study of Ageing, participants who replaced sedentary time with 30 minutes of moderate to vigorous PA once a week, were associated with healthier ageing compared to their inactive counterparts (Hamer et al. 2012; Hamer et al. 2014). However, despite the health gains noted with increasing PA levels what will actually determine the engagement of older people in a PA lifestyle are multiple and complex. An overview of these determinants will be presented in the following section.

1.3.2. Determinants of Physical Activity for Older People

Factors which may influence PA participation by older people can be understood in terms of personal characteristics, programme related factors, and environmental factors (King et al. 2001). Personal characteristics can include demographic and health related factors. For example, younger age, moderate to excellent health and a belief that PA is important for health have been shown to predict exercise participation and maintenance in older people (Burton et al. 1999; Allender et al. 2006; Bethancourt et al. 2014). Higher levels of education and an exercise history

are also associated with regular exercise (Rhodes et al. 1999; van Stralen et al. 2009).

Programme related factors which influence PA participation for older people include the format, intensity, convenience, time, location, structure and affordability of the programme (King et al. 2001; Tak et al. 2012). Group or facility based programmes have also been shown to predict higher attendance rates for older people compared to individual or home based exercise programmes (Hong et al. 2008).

Environmental factors related with PA engagement include the social and physical environment. For example, social support from family members, programme staff, friends, and exercise peers have been found to be predictors of PA for older people (King et al. 2001; Allender et al. 2006; Bethancourt et al. 2014). Physical environmental factors include access and satisfaction with exercise facilities and neighbourhood safety as being important in influencing exercise adherence (Trost et al. 2002).

Cited barriers to PA for older people include unclear guidance, lack of role models, physical health limitations, and for the oldest old (>80 years) fear of injury or fear of going out were also noteworthy (Allender et al 2006; Baert et al 2011; Bethancourt et al 2014). Therefore, programmes which utilise exercise facilitators and limit the barriers need to be identified to promote sustained PA in older people. This is of public health importance in helping older people maintain independent, healthy lifestyles as they continue to age. One key facilitator for influencing older peoples PA levels as discussed in the literature is the role of social support and its ensuing networks (King et al. 2001; Allender et al. 2006; Bethancourt et al. 2014). The following section will highlight the importance of these social aspects as older people continue on their ageing journey.

1.3.3. Social Determinants of Health and Wellbeing for Older People

The quality and quantity of a person's social relationships are a key health determinant, not only in terms of mental health but also with regards morbidity and mortality (Steptoe et al. 2013). Individuals with adequate social relationships have been found to have a 50% greater likelihood of survival when compared to those with limited social support (Holt-Lunstad et al. 2010). The extent of this effect was argued to be comparable with cessation of smoking (Holt-Lunstad et al. 2010).

Social isolation has been noted to bring about genuine physiological changes in health with the risk of developing infectious diseases, cardiovascular disease,

heightened inflammatory and metabolic responses to stress, and cognitive decline (Steptoe et al. 2013). Social isolation is a complex phenomenon describing aspects of an individual's social relationships (Victor et al. 2009). For the purposes of this study, social isolation is defined as "an objective appraisal of the extent of an individual's network" (Boldy and Grenade 2011, p. 583). It reflects the low level of contact an individual may have with others as well as a generally low level of community involvement (Hemingway and Jack 2013). Loneliness is a separate but closely related concept in the sense that it is viewed as a more subjective evaluation with regards an individual's level and quality of contact (Boldy and Grenade 2011; Hemingway and Jack 2013).

An understanding of social isolation and loneliness is important because in the UK context of an ageing population approximately half of all people over the age of 75 live alone (Thomas 2015). Although it must be noted that living alone does not necessarily imply being isolated, yet, those who live alone are more than twice as likely to report feeling lonely (Thomas 2015). The prevalence of severe loneliness among older people (≥ 65 years) in Great Britain has been estimated to be seven per cent (Victor et al. 2005). Similar findings were noted among older people (≥ 65 years) in Western Australia where seven per cent of respondents reported being always or often lonely (Boldy and Grenade 2011). However, the Office for National Statistics report higher rates with 14.5% of 65-79 year olds, and 30% of those over 80 years reporting high levels of loneliness (Thomas 2015). This suggests that loneliness is more common in the oldest old (Victor et al. 2000). Lack of mobility, reduced income, shrinking social circles due to death of spouses and friends make older persons ever more vulnerable to social isolation (Marmot 2010).

Within the context of PA and social isolation, community dwelling older people have been found to be more active on the days when they leave their house (Portegijs et al. 2015). Furthermore, there is a relationship between physical inactivity and social isolation resulting in reduced leisure time PA in older people who are socially isolated (Reed et al. 2011). Thus, research is called for which considers interventions that offers older people the opportunity to interact with others whilst increasing PA levels (Reed et al. 2011). The following section will present one such means of supporting older people in sustaining a PA and socially connected lifestyle.

1.3.4. Community-based Group Exercise Programmes

To date, national strategies such as the primary care exercise referral scheme have provided little evidence of participants adopting a sustainably active lifestyle (Pavey 2011). The sustained aspect of PA is important because in order to acquire the health and wellbeing gains associated with PA there is a need for engagement to be maintained over an extended period of time. There are no all-purpose formulas for helping older people engage in PA. Some individuals prefer structured settings with social interaction for engaging in PA, others favour more solitary exercise environments (Chao et al. 2000). Hence, it is understood that many different approaches, such as brief interventions in primary care, walking and cycling programmes, or exercise referral schemes will be necessary to engage older people in maintaining PA (Grant 2010; NICE 2013).

Well documented literature states that approximately half of participants who commence an exercise programme will drop out within the first six months (Dishman 1982; Dishman et al. 2001). A review of group based exercise interventions for older people (mean age 61.4 years) has shown mean long-term (≥ 1 year) adherence rates to be higher at 75% (van der Bij et al. 2002). This shows potential for the role of CBGEP in supporting older people in sustained adherence to PA.

Community-based group exercise programmes (CBGEP) utilising motivators, such as social support have been shown to be one means of increasing PA levels for older people (Belza et al. 2006; Hughes et al. 2009; Hernandes et al. 2013). Specifically, CBGEP have been found to have beneficial effects on older people's physical function such as improved mobility, flexibility, and upper and lower limb function (Orsega-Smith et al. 2003; Ramsbottom et al. 2004; Belza et al. 2006; Seguin et al. 2012; Wallace et al. 2014; Keogh et al. 2014). CBGEP also have positive effects on participants' subjective sense of wellbeing, balance and fear of falling, and health related quality of life (Munro et al. 2004; Keogh et al. 2014).

Therefore, the question remains, what will help older people sustain participation in a regularly active lifestyle? Addressing this topic has important public health implications since further understanding in this area can help facilitate sustained PA and in doing so influence a key lifestyle behaviour in the prevention of NCD. Furthermore, the social aspects of the programme may be important in helping older people remain connected, thus reducing the risk of social isolation as they age.

Given that a range of approaches are needed to engage people with various exercise preferences, it may be for some individuals that CBGEP provide a viable avenue. Thus, this study will focus on older people's adherence to CBGEP as a possible means of sustaining PA in the prevention of NCD and in supporting social connections. For the purpose of this current study, CBGEP are defined as programmes based in a local community setting (i.e. not a hospital or clinic) and attended by community dwelling older people (King et al. 1998; McLeroy et al. 2003). The following section will outline the structure of the thesis including the content of each chapter as it sought to address this area of older people's adherence to CBGEP.

1.4. Outline of the Thesis

This thesis is divided into seven chapters (Figure 1.1). In chapter two the literature review is presented in the form of a mixed-methods systematic review. The results of this systematic review helped inform the subsequent study design by providing a measure of adherence rates for programmes to be included. The qualitative component of the systematic review helped develop theoretical study propositions which informed the theoretical framework of this current study**.** Chapter three describes the methodology, the rationale for a multiple-case study approach, the overall study design, and methods of data collection and analysis. Chapter four presents the findings from each of the three cases. This includes a depth phase of analysis where the humanisation framework (Todres et al. 2009) was utilised in an *a priori* manner to further understand participants' adherence to CBGEG from a humanising perspective. Chapter five focuses on explanation building as a pattern matching technique. This was employed with the aim of triangulating the data and analysis through a process of explanation building about the cases (Yin 2013). Utilising this explanation building technique in a narrative, iterative format allowed the findings from each case to be compared with each of the theoretical propositions as a means to seek to explain older people's adherence to these CBGEP. In chapter six, the findings are discussed in relation to the literature including how this current study has contributed new knowledge in this field of older people's exercise adherence. Chapter seven presents the study conclusions. This includes the broader theoretical, practice and policy recommendations as well as areas for further research. Finally, the Appendices provide additional material in support of this thesis.

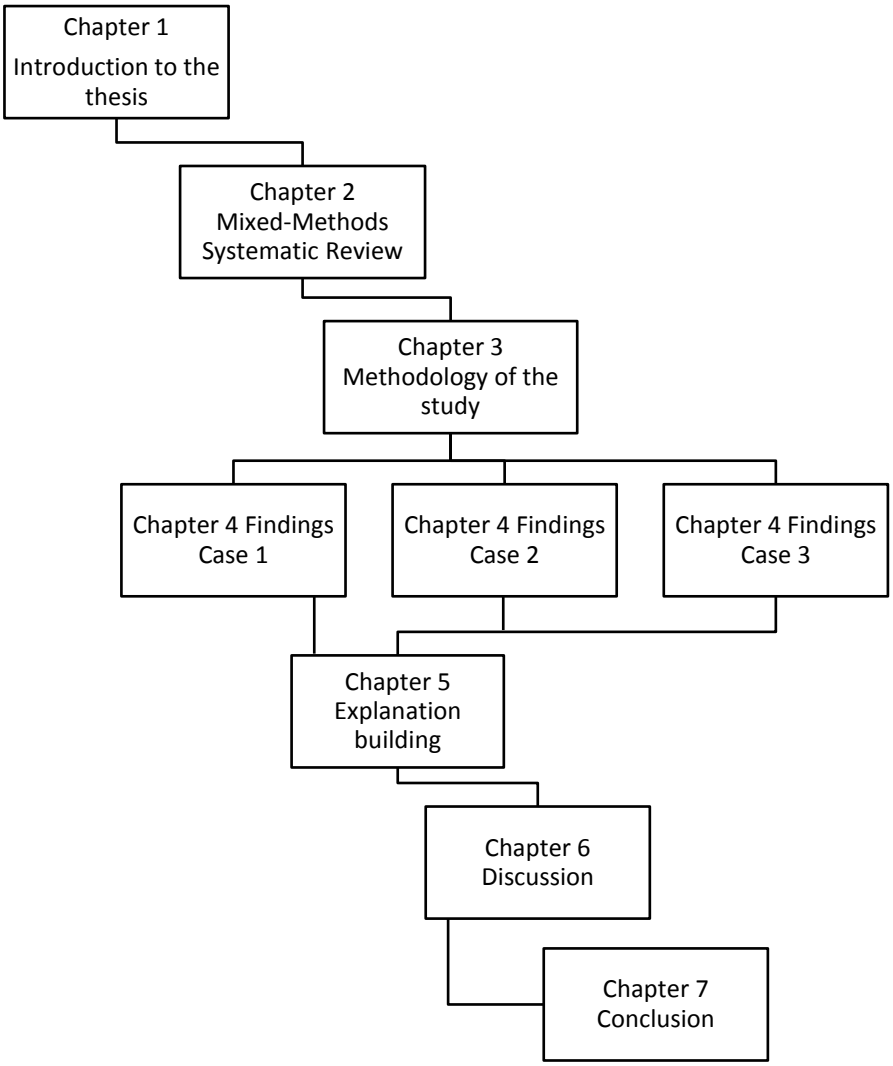


Figure 1.1 Overview of Chapters and Content of the Thesis

2. Literature Review

Adherence to Community-based Group Exercise Interventions in Older People: A Mixed-Methods Systematic Review

2.1. Introduction

This chapter will present a systematic review of older people's adherence to community-based group exercise programmes (CBGEP). The review was undertaken to gain a greater depth of understanding with regards to what is known about the role of CBGEP in sustained physical activity (PA) adherence for older people. The findings and conclusion of this systematic review significantly influenced the work detailed in later chapters.

This chapter commences by summarising the role of systematic reviews including the reasons for undertaking a mixed-method systematic review in the context of this current study. The results of the review are then presented and discussed. The chapter concludes by presenting the aim, research question, objectives, and propositions of this current research study.

2.2. Systematic Reviews

A systematic review was the chosen method of literature review because they are known to provide evidence with a high degree of validity, and reliability thus allowing more rigorous conclusions to be drawn (McDermott and Graham 2005). Systematic reviews bring together findings from multiple pieces of primary research with a view to informing evidenced based policy and practice (Oliver et al. 2005). The strengths of this technique lie in its rigorous methods of systematic searching to find all relevant articles pertaining to the research question. In addition, they aim to reduce the risk of drawing misinformed conclusions from poor quality data by assessing the individual methodological quality (Bettany-Saltikov 2012).

Traditionally, systematic reviews have been quantitative in nature, i.e. drawing on positivist research approaches to answer questions predominantly relating to intervention effectiveness. Whilst it is imperative that interventions are evaluated to determine what works, it is also important to understand why interventions work and for whom. These types of questions are more typically answerable using a qualitative synthesis (Harden 2010). Furthermore, it has been argued that mixing qualitative evidence into quantitative systematic reviews can add to their meaning, enhancing their relevance with application to policy and practice (Mays et al. 2005).

Mixed-methods systematic reviews have been defined as:

> "combining the findings of 'qualitative' and 'quantitative' studies within a single systematic review to address the same overlapping or complementary review questions." (Harden 2010, p. 7)

In this way qualitative evidence can be used to enhance and help explain and interpret the results of quantitative elements of the review (Noyes et al. 2008). In order to gain a deeper understanding of the role which CBGEP play in older people's sustained adherence to a PA lifestyle a mixed-methods systematic review was carried out. A mixed-methods review was selected in preference to a pure quantitative or qualitative review because these would not have provided a clear enough understanding of the literature in isolation. Thus, a mixed-methods review was selected with the inclusion of three separate syntheses.

The first synthesis was carried out using qualitative studies to understand the views of older people regarding their adherence to CBGEP. This is important because to date reviews in relation to determinants of PA have largely been quantitative (Bauman et al. 2012). Currently no qualitative reviews have identified which aspects contribute to our understanding of why older people attending CBGEP show sustained adherence. The second synthesis sought to update the work of van der Bij et al. (2002) in identifying the long-term adherence rates of community dwelling, free living older people to CBGEP. The third synthesis sought to go deeper in understanding adherence by identifying the degree to which the interventions described in the quantitative studies overtly considered the factors highlighted from the qualitative review. This knowledge is important because it adds to our understanding of what factors contribute to sustain PA for older people thus influencing a key lifestyle behaviour in the prevention of NCD. The protocol for this systematic review was published on the PROSPERO International prospective register of systematic reviews (Appendix 1).

2.3. Methods

2.3.1. Search Strategy

A search was carried out in eight online scientific databases (MEDLINE, CINAHL, ScienceDirect, SocINDEX, Scopus, AMED, BNI and Web of Science) from January 1995 to May 2014 to identify relevant primary studies. Reference lists of key articles were hand searched and study authors were contacted to snowball references. After personal contact with one study author it was suggested that a manual search

be made of the previous six volumes (2009-2014) of Journal of Aging and Physical Activity and Age and Ageing (being relevant to the study area) for further studies. Using a Boolean search strategy, key concepts (e.g. 'adherence', 'community-based', 'exercise', 'older people') and their alternative medical subject headings were entered into the databases (Table 2.1).

Element	**Alternatives**	
1) Adhere*/ Initiat*	Maint* Sustain* Attend* Compliance Comply	Complied Adopt* Commence* Instigat* Begin*
2) Community-based	Community dwelling Free living Community living	
3) Exercis*	Physical activit* Resistance training Strength training Tai chi Pilates Multimodal exercise*/ training Multicomponent exercise*/ training Aerobic training/ exercise Balance exercise*/ training	
4) Older People	Older person* Old* adult* Elderly Over 65* Over sixty-five	Geriatric* Senior* Aged Ag*ing
Sample Search Strategy	1 (adhere* or maint* or sustain* or attend* or compliance or comply or complied or adopt* or initiat* or commence* or instigat* or begin*). Title	
	2 (community-based or community dwelling or free living or community living). Text	
	3 (exercise* or physical activit* or resistance training or strength training or tai chi or pilates or multimodal exercise* or multimodal training or multicomponent exercise* or multicomponent training or aerobic training or aerobic exercise* or balance exercise* or balance training). Text	
	4 (older people or older person* or old* adult* or elderly or over 65* or over sixty-five or geriatric* or senior* or aged or ag*ing). Text	
	5 (1 AND 2 AND 3 AND 4)	
	Limit 5 to (English language and year = "January 1995 – Current")	

* (asterisk) represents any string of characters used in truncation

Table 2.1 Search Terms Applied and Sample Strategy

Studies were included from January 1995 onwards since it was at this point that significant understanding was made in the need for regular, sustained PA in order to achieve long-term health gains (Pate et al. 1995).

Adherence can be an ambiguous term within studies, with multiple methods of measurement (Hughes et al. 2006; Picorelli et al. 2014). For the purpose of this review, the most common measures of reporting adherence in the literature were utilised (Picorelli et al. 2014). These were either the percentage of sessions participants attended or the percentage of participants completing the programme without recidivism (Picorelli et al. 2014).

2.3.2. Inclusion Criteria

Two types of research were sought: quantitative studies that included adherence rates to CBGEP and qualitative studies that considered the views of older people who take part in CBGEP. Included papers were published in English, from January 1995 onwards. Six months was selected as the minimum study duration since this is often referred to as the timespan from which maintenance occurs; whereas a timeframe of ≤ 6 months commonly relates to PA initiation (Dishman et al. 1982; Laitakari et al. 1996; van Stralen et al. 2009).

Papers were reviewed using the inclusion and exclusion criteria (Table 2.2). This author screened articles for eligibility based on their title and abstracts. Potentially relevant articles underwent a full text screen and were cross checked by a second reviewer (FT).

Inclusion	Exclusion
• Community dwelling, free living participants > 60 years (for qualitative studies) and > 65 years (for quantitative studies).* • Studies involving community-based group exercise programmes/ interventions** of ≥ 6 months duration. • Qualitative studies had to include the views of those who participate in group exercise programmes. • Quantitative studies had to include participation rates (adherence data)[+].	• Participants in residential care. • Home based exercise programmes. • Studies with a highly clinical/ therapeutic intervention. • Reports published in conferences, books, theses, policy documents, reviews or pilot studies.

* Inclusion age for qualitative studies was lowered due to the low yield of studies.
**Defined as programmes taking place in a local community setting (i.e. not a hospital or clinic) and attended by community dwelling older adults (King et al. 1998; McLeroy et al. 2003).
[+]Adherence based on % of sessions attended, or % of people completing the programme.

Table 2.2 Inclusion/ Exclusion Criteria for the Selection of Articles for this Review

2.3.3. Data Extraction and Synthesis

Data extraction and synthesis was performed by this author and were cross checked by supervisors (CC, FT) to minimise risk of bias. Customised data extraction forms were used which included information regarding aims, study design, sample characteristics, data collection instruments, data analysis, ethics, intervention, and outcomes.

The framework for this review followed the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) method of integrating qualitative research with trials in systematic reviews (Thomas et al. 2004). Data were synthesised in three ways (Figure 2.1). Firstly, the qualitative data underwent thematic synthesis. The findings sections of each qualitative study were imported into QSR International's NVivo 10 qualitative data analysis software where open, descriptive, and analytical coding was conducted. (Thomas et al. 2004). Secondly, adherence data from the quantitative studies were analysed descriptively. A meta-analysis of the quantitative data was not possible due to heterogeneity in intervention type and outcomes. Thirdly, a matrix was constructed to juxtapose the qualitative and quantitative data. This was used to assess the extent to which the quantitative interventions incorporated the analytic themes identified in the qualitative synthesis (Thomas et al. 2004).

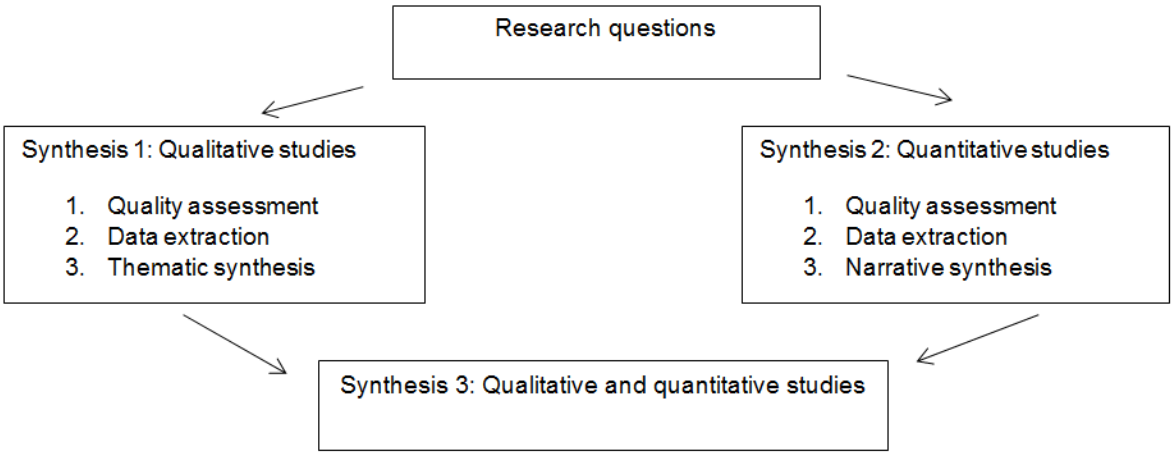


Figure 2.1 Stages of the Review Process (Based on Thomas et al. 2004)

2.3.4. Quality Assessment

Quality was assessed using the relevant Critical Appraisal Skills Programme (CASP 2014) checklists. A numerical assignment of 0, 1 or 2 was awarded according to how well the study answered the screening questions (0=no, 1=partly, 2=yes).

Consequently, a maximum score of 22 could be attained for the quantitative studies and 20 for the qualitative. Study quality was assessed by three reviewers (CK, CC, FT).

2.4. Results

2.4.1. Included Studies

A total of 2958 studies were identified and screened against the inclusion / exclusion criteria. Ten studies met the inclusion criteria: five quantitative, three qualitative and two mixed-methods study designs. Qualitative and quantitative data were included from one mixed-methods study (Fox et al. 2007) and qualitative data only from the other study since it lacked appropriate adherence data (Garmendia et al. 2013). See Figure 2.2 for a flow chart of study selection as adapted from Preferred Reporting Items for Systematic Reviews and Meta-Analyses (Liberati et al. 2009).

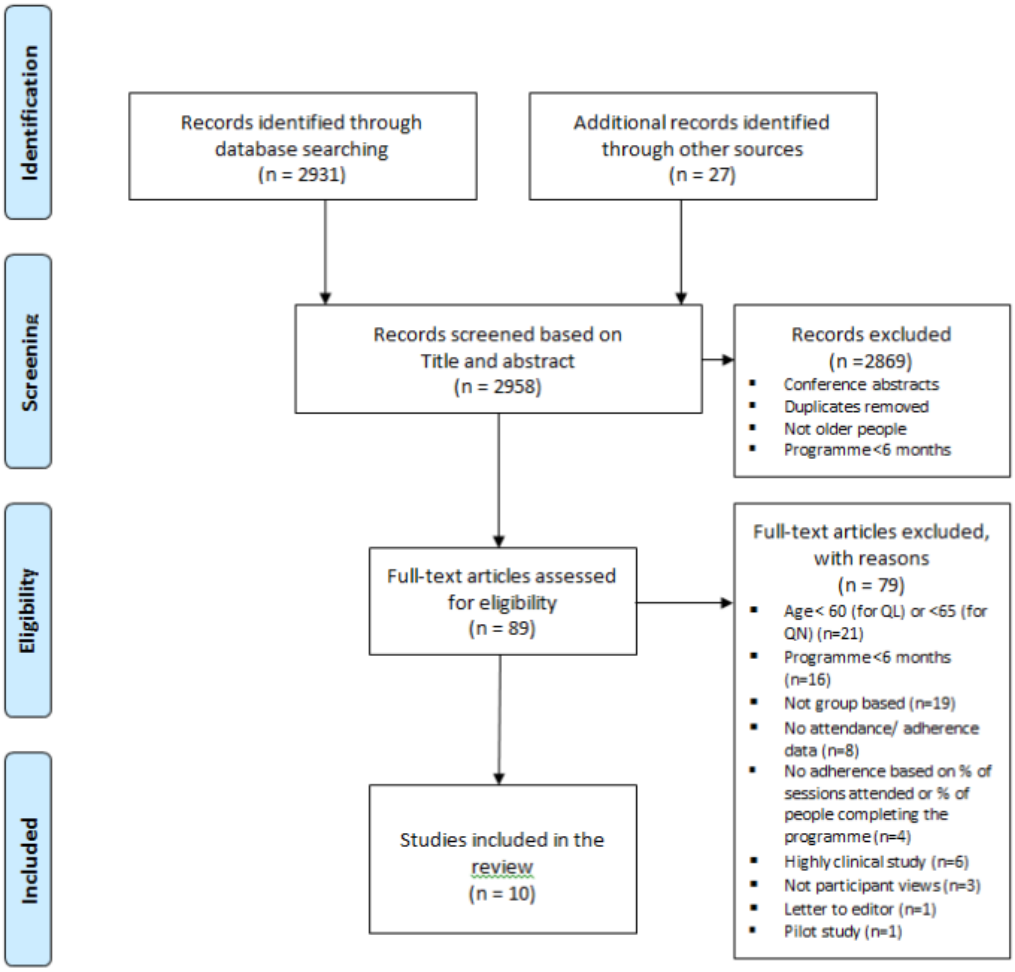


Figure 2.2 Flow Chart of Paper Selection

2.4.2. Quality of Included Studies

The quantitative studies all scored ≥ 16 points on the quality appraisal assessment. The main limitations were poor reporting of blinding of study personnel and participants, and lack of reported effect sizes. Four of the qualitative studies scored ≥ 17 points. The main quality limitations were poor reporting of the recruitment strategy and researcher / participant interaction. The fifth qualitative study (Garmendia et al. 2013) scored lowest with 15 points. However, when considering qualitative research, a study with a slightly lower quality may still yield valuable insights and for this reason was included in the synthesis (Noyes et al. 2008). There was no disagreement between the reviewers on the grading of studies. See Table 2.3 and Table 2.4 for study quality scores.

2.4.3. Qualitative Synthesis

The qualitative studies utilised a range of approaches to data collection including semi-structured interviews, focus groups, and participant observation. Analysis consisted of content analysis, interpretive phenomenological analysis, or thematic analysis.

Sample size ranged from eight to 52 and all participants were ≥ 60 years of age. Four studies reported on mean age (Fox et al. 2007; Chiang et al. 2008; Dunlop and Beauchamp 2013; Garmendia et al. 2013) with an overall mean of 73.7 years. Kirby and Kluge (2013) reported age as a range of 65-76 years. Three studies included male and female participants (Fox et al. 2007; Chiang et al. 2008; Garmendia et al. 2013), one focused on men only (Dunlop and Beauchamp 2013), and the remainder on women only (Kirby and Kluge 2013). Participants had been attending these exercise programmes for between one and five years. Three of these were ongoing programmes (Chiang et al. 2008; Dunlop and Beauchamp 2013; Kirby and Kluge 2013), whereas the other two were for a time-limited period of one - two years (Fox et al. 2007; Garmendia et al. 2013). Two of the five studies were situated around real-life contexts, i.e. not research specific contexts (Chiang et al. 2008; Dunlop and Beauchamp 2013).

Geographically, three studies were located in North America (Chiang et al. 2008; Dunlop and Beauchamp 2013; Kirby and Kluge 2013), one in South America (Garmendia et al. 2013) and one in Europe (Fox et al. 2013). One of the studies in North America (Chiang et al. 2008) had participants from ethnically diverse backgrounds with 40% being Chinese, 35% African American, 19% Caucasian, and 6% Japanese. Ethnicity was not explicitly stated in three of the studies (Fox et al.

2007; Germendia et al. 2013; Kirby and Kluge 2013). Dunlop and Beauchamp (2013) reported a relatively ethnically homogenous group of predominantly European descent.

The exercise programmes were similar in nature. Four were multicomponent, consisting of aerobic, strengthening, flexibility, balance, and coordination exercises (Chiang et al. 2008; Dunlop and Beauchamp 2013; Fox et al. 2007; Garmendia et al. 2013). The fifth study was a ladies volley ball team (Kirby and Kluge 2013). Table 2.3 summarises the characteristics of the included studies.

Study	Aims	Study Quality	Design	Population	Intervention
Fox et al. 2007	To assess the impact of a structured exercise programme on mental wellbeing in the older elderly.	18/20	Mixed-methods study	*Sample selection:* Purposive sample of programme participants 24 semi-structured interviews *Mean age:*75.6 years (Standard deviation, SD 3.9 years) *Gender:* Male and female *Setting:* The UK based study centres *Socioeconomic status*: Not included *Ethnicity*: Not included	Standardised exercise programme for 60-90' including warm up, aerobic exercise, strength training, Tai Chi and flexibility. 2x group based sessions/ week and 1 home based 12 month exercise intervention
Chiang et al. 2008	To examine how physical environment, social environment, and individual biology and behaviour influence adherence to exercise for ethnic older adults participating in Enhance Fitness (EF).	17/20	Qualitative design using focus groups	*Sample selection:* Purposive sample of participants of the Enhance Fitness (EF) exercise programme 6 focus groups carried out with 52 participants *Mean age:* 76 years (SD 7.4 years) *Gender:* Male and female *Setting:* Seattle, USA *Socioeconomic status:* Not explicitly mentioned, all from urban areas *Ethnicity*: Chinese (40%), African American (35%), White (19%), Japanese (6%)	An evidence-based community exercise programme for older adults. 1 hour sessions 3 x/week.
Dunlop and Beauchamp 2013	To identify the elements of the programme (Lively Lads) responsible for its appeal.	18/20	Case study (using field notes, semi-structured interview).	*Sample selection:* Purposive sample of programme participants 19 semi-structured interviews *Mean age:* 77.1 (SD 8.2 years) *Gender:* All male programme *Setting*: Western Canada	A programme of stationary aerobic and strength training activities which has been running since the mid-1990s. The classes themselves ranged in size from approximately 30 to 70 people and were 50–60 min in length.

				Socioeconomic status: Moderately affluent municipality *Ethnicity*: Relatively ethnically homogeneous, majority of European descent	
Garmendia et al. 2013	To identify factors associated to adherence to a physical activity intervention in older adults from a post-transitional middle income country.	15/20	Mixed-methods study	*Sample selection:* Convenience sample from the participants 36 semi-structured interviews carried out. *Mean age*: 66.1 years at baseline. *Gender:* Male and female *Setting*: Santiago, Chile *Socioeconomic status:* Low-medium. *Ethnicity*: Not explicitly mentioned	A progressive resistance exercise protocol with one-hour classes twice a week 2 year intervention
Kirby and Kluge 2013	To examine the formation of a women's 65+ volleyball team at a university	20/20	Intrinsic case study (using focus group, individual interviews, individual written reflections and participant observation)	*Sample selection*: Purposive sample of 8 of the team players. *Age range:* 65-76 years. *Gender*: All female programme *Setting:* Colorado, USA *Socioeconomic status:* Not stated *Ethnicity*: Not stated	A newly formed volley ball team 1 year study Weekly practices of 1.5 hours/ week which increased to 5 hours / week prior to competitions

Table 2.3 Study Characteristics of Included Qualitative Studies

Thematic synthesis identified six key themes as being noteworthy in influencing ongoing participant adherence to CBGEP. These included: social connectedness, participant perceived benefits, instructor behaviour, programme design, empowering / energising effects and individual behaviour.

Social Connectedness

All five studies included threads of belongingness, demographic homogeneity, socialising and support. Collectively, these aspects, under the umbrella theme of *social connectedness* seemed to be a key determinant of adherence.

Being together with peers of similar interests and needs helped forge feelings of belonging. This sense of belonging was evident in the exercise groups and for some this rich *social connection* was their chief social channel and brought a valid sense of community and identity: “It’s our exercise family” (Chiang et al. 2008, p. 4). As these relationships developed, they were seen as being “the most powerful enablers for the Stars [the volleyball team] to both begin and continue engagement…” (Kirby and Kluge 2013, p. 301).

The demographic homogeneity of the group seemed to be a key factor in underpinning the sense of *connectedness* that group members had. For some it was because they had a shared language and religion (Chiang et al. 2008), for others it was the fact that it was an all-male environment which made them feel more at ease with one another and so less embarrassed if they made a mistake (Dunlop and Beauchamp 2013). Being peers of a similar age, interests and needs meant they could understand “aches and pains of the older person” (Dunlop and Beauchamp 2013, p. 227). As one participant stated “This group allowed me to get together with people of my own age” (Garmendia et al. 2013, p. 470).

Socialising and support were further compelling features which influenced adherence. Support was noted in the general sense from family members, or healthcare providers such as the family doctor encouraging attendance (Chiang et al. 2008). In other instances support came from programme staff in the form of their positive, supportive interactions (Kirby and Kluge 2013) or by calling to check on participants if they were absent (Chiang et al. 2008). To some degree this provided a level of accountability which helped stimulate ongoing engagement.

The social aspect to the group enabled new social networks to be formed. This allowed them to connect with individuals in their neighbourhood who they had never

met before (Garmendia et al. 2013) and opened up a whole new group of people to connect with (Kirby and Kluge 2013). These networks led to very practical support such as car sharing, telephone support, and caring for one another (Chiang et al. 2008).

Participants Perceived Benefits

Four out of the five studies talked about the physical gains participants experienced from being part of the CBGEP. These perceived health benefits included enhancements in muscle strength, balance, weight loss, and sleep as well improvements in diseases such as hypertension, diabetes, or heart disease (although these were not verified objectively) (Chiang et al. 2008). Others reported mobility and agility gains (Garmendia et al. 2013), and noted that no matter what their present ability was, the CBGEP served to maintain or improve their health (Dunlop and Beauchamp 2013).

Many participants understood that attending the CBGEP produced mental, cognitive and social benefits which were considered as important as the physical gains (Chiang et al. 2008; Dunlop and Beauchamp 2013; Fox et al. 2007; Garmendia et al. 2013; Kirby and Kluge 2013).

The underlying motivation for a number of participants was the goal of maintaining their independence (Chiang et al. 2008; Fox et al. 2007; Garmendia et al. 2013). This resulted in perceived functional improvements in everyday activities such as getting out of bed, doing household chores, and walking (Chiang et al. 2008; Fox et al. 2007; Garmendia et al. 2013).

Instructor Behaviours

The positive influence of *instructor behaviour* was evident in all five studies. There was a commonality of characteristics among the leaders. Most noticeably, being enthusiastic, motivating, an ability to make exercise fun, enjoying working with older people, and treating individuals with respect (Chiang et al. 2008; Dunlop and Beauchamp 2013; Fox et al. 2007). The instructors were a principal reason for participants to continue attending the CBGEP (Chiang et al. 2008). The quality of being able to communicate well meant that for one group the instructors also served as social co-ordinators as well as directing individuals to appropriate support within the group (Dunlop and Beauchamp 2013).

Instructors were seen as being knowledgeable and skilful which served to promote self-confidence and trust in participants (Dunlop and Beauchamp 2013; Fox et al. 2007; Kirby and Kluge 2013). The support offered in the initial sessions (which were seen as the most difficult), helped participants grow in confidence and fitness (Fox et al. 2007). Feedback provided by the instructors helped participants to gauge their personal progress and served as a further motivator (Chiang et al. 2008; Dunlop and Beauchamp 2013).

Programme Design

Programme design was revealed as being noteworthy in aiding adherence in all five studies. This theme tended to feature the more practical aspects of the programmes. Specifically, it considered the geographical convenience of the location and ease of access, affordability, and the structure and content of the CBGEP being relevant for each individual (Chiang et al. 2008; Dunlop and Beauchamp 2013; Fox et al. 2007; Garmendia et al. 2013; Kirby and Kluge 2013). Intensive one-on-one support and individually adapted content was what helped participants increase their self-confidence and physical ability with exercise (Dunlop and Beauchamp 2013; Fox et al. 2007).

Empowerment and Energising Effects

The *empowering and energising effects* of being part of these groups were evident in all five studies. This manifested itself in greater motivation and a desire to “go for gusto” (Kirby and Kluge 2013 p. 299). The source of these *energising and empowering effects* stemmed from the social atmosphere, fun, and banter between the group members, or the incentive of leaving the house (Chiang et al. 2008; Dunlop and Beauchamp 2013; Fox et al. 2007; Garmendia et al. 2013; Kirby and Kluge 2013).

Individual Behaviour

Whilst not consistent in every study, there was an element of the influence *of individual behaviour* impacting on adherence. Those who had a past experience of being physically active felt that was a factor related to their participation (Chiang et al. 2008). Other personal characteristics were important, such as: being competitive; having a positive attitude; perseverance; and the desire to try something new and continue learning (Chiang et al. 2008, Kirby and Kluge 2013). The studies which

identified this as a theme both used the socio-ecological model to frame their study design (Chiang et al. 2008, Kirby and Kluge 2013).

2.4.4. Quantitative Synthesis

The six quantitative studies included three randomised controlled trials, two quasi-randomised trials, and one mixed-method (relevant quantitative data extracted). Sample size ranged from 48 to 248 with a total of 873 participants. Participants were ≥ 65 years of age (mean age 73.8 years). Except for one study that involved women only (Englund et al. 2005), all interventions included male and female participants. Three of the studies were located in Europe (Englund et al. 2005; Fox et al. 2007; Tak et al. 2012), one in North America (King et al. 2000), and two in Australia (Cyarto et al. 2006; Jancey et al. 2007). All the included quantitative studies were situated in a research specific context, i.e. they were not part of established, ongoing, real-life CBGEP. Table 2.4 summarises the characteristics of the included studies.

Study duration ranged from six months to one year. All interventions consisted of community-based group exercise programmes. The majority of these were multicomponent exercise classes using aerobic, balance, coordination, and stretching exercises (Cyarto et al. 2006; Englund et al. 2005; Fox et al. 2007; King et al. 2000). Two of the programmes were group based walking activities (Jancey et al. 2007; Tak et al. 2012).

Adherence to the programmes was a primary outcome for three studies (Cyarto et al. 2006; Jancey et al. 2007; Tak et al. 2012). The remaining studies reported on it as a secondary outcome with primary outcomes of health related quality of life (King et al. 2000), bone mineral density (Englund et al. 2005), or wellbeing gains (Fox et al. 2007).

Adherence was reported descriptively in two ways: as a percentage of the total number of sessions attended (mean 69.1%, SD 14.6%) (Cyarto et al. 2006; Englund et al. 2005; Fox et al. 2007; King et al. 2000; Tak et al. 2012) or the percentage of participants completing the programme (65.3%) (Jancey et al. 2007).

Study	Aims	Study Quality	Design	Population	Intervention	Comparative Intervention	Outcome
King et al. 2000	To evaluate the effects of two different community-based physical activity regimens on physical performance outcomes and perceived functioning and wellbeing.	19/22	Randomised clinical trial	Sample selection: Population based recruitment via random digit telephone selection supplemented with citywide promotion. N=103 Age: > 65 years (mean age 70 SD 4 years) Community dwelling, sedentary women and men 65% women Setting: California, USA	'Fit and Firm' (endurance and strengthening exercises) and 'Stretch and Flex' (stretching and flexibility exercises). Classes 2x/ week and home exercise encouraged 2x/week 1 year intervention	2 types of exercise class were compared	Adherence based on number of sessions attended. Exercise adherence to the class exercises: Fit and Firm: 65 (SD 27%) Stretch and Flex: 68 (SD 29%) Exercise adherence assessment: based on exercise logs on daily basis to track type, frequency and duration of ex sessions.
Englund et al. 2005	To determine if a combined weight training programme would be beneficial to Bone Mineral Density and neuromuscular function.	16/22	12 month prospective Randomised Control Trial	Sample selection: Volunteers recruited via a lecture at the University of the Elderly or via study invitation to women who had participated in a previous study N=48. Intervention n=24, control n=24 Mean age 73 (SD 4, range 66-87 years) All female participants Setting: Umea, Sweden	50 minute community-based exercise programme with strength, aerobic, balance and coordination exercise 1 year intervention	Control asked not to increase their normal PA. Interviewed at 6 and 12 months to monitor any changes in ex habits	Adherence based on number of sessions attended. Mean % of sessions attended for the exercise group was 67% (range 23-95%)

Cyarto et al. 2006	To assess and compare retention and adherence rates, and compliance with, a twice weekly resistance training program provided either individually at home or in a group format.	18/20*	Quasi-randomised trial	Sample selection: Independent living retirement village residents sent letter of invitation to on-site info sessions describing the research project. N=119. Mean age 80.1 (SD 6 years). Home programme: 82% female Group programme: 75% female Setting: Brisbane, Australia	Both interventions included strength and balance exercises. 2 x 1 hour sessions/ week. Same programme except one is at home and one at a centre. 44 week study period.	Home or group format compared	Adherence based on number of sessions attended. Group based adherence rate: 66% Home based adherence rate 63%. No statistically significance difference.
Fox et al. 2007	To assess the impact of a structured exercise programme on mental wellbeing in the older elderly.	18/22	Mixed-methods study	Sample selection: Volunteers were participants in the exercise programme and invited through local advertising N=176 with full accelerometry and questionnaire data. Exercise group n=112, control=64 Age >70 years (mean age 75.6, SD 3.9 years) Setting: 3 different European countries: Italy, France and England	Standardised exercise programme for 60-90' including warm up, aerobic exercise, strength training, Tai Chi and flexibility. 2x group based sessions/ week and 1 home based 1 year intervention	Control group did not take part in the exercise programme. Completed baseline questionnaires	Adherence based on number of sessions attended. 93% attendance rate for group sessions and 85% for home based sessions.

Jancey et al. 2007	To investigate the issue of minimising attrition in exercise programmes by identifying factors associated with non-adherence in a neighbourhood-based physical activity intervention.	17/22	Stratified quasi-random sampling frame	Sample selection: Participants randomly selected from federal electoral role and postcards sent to invite with follow up phone call. Intervention group: N = 248 (From 30 different suburbs) Control group: N = 313 (From a different 30 suburbs) Mean age 69 years (range 65-74 years) 66% of intervention group female. 67% Australian born, 33% non-Australian born Setting: Perth, Australia	Group based walking intervention 2 x/ week 6 month intervention	Control group completed questionnaires only	Adherence based on number of people who completed the programme. 65.3% of participants completed the programme. At least half of the walking sessions were attended by 93% of participants, and more than 85% of participants attended 70% of the walking sessions over the 6-month period.
Tak et al. 2012	To determine the level of participation, adherence and maintenance of the exercise programmes in older people with mild cognitive impairment (MCI).	21/22	Randomised placebo-controlled trial (RCT)	Sample selection: All community dwelling adults aged 70-80 years were sent an invitation letter N=179 Intervention: n=86 Control: n=93 Age: 70-80 years 41% female Setting: medium sized town in The Netherlands	Intervention: a moderate intensity group walking programme (>3 Metabolic equivalent, MET). Control: a low intensity activity programme (<3METS) 1 year trial with 6 month follow up	Low intensity activity programme was used as a placebo exercise class	Adherence based on number of sessions attended. Mean exercise adherence during trial: 53% 6-months after trial ended: 25% of participants continued the programme.

* Scored out of 20 since one screening question was not relevant to the study design

Table 2.4 Study Characteristics of Included Quantitative Studies

2.4.5. Synthesis of Qualitative and Quantitative Studies

To assess the extent to which the quantitative interventions incorporated the analytic themes identified in the qualitative synthesis a matrix was devised. This juxtaposed the implied recommendations based on the qualitative themes against the actual interventions that had been implemented (Table 2.5). This synthesis was seeking to answer how well the quantitative studies matched the qualitative themes and whether these can be used to explain the heterogeneity of the adherence data.

Implied recommendations based on the qualitative themes identified from participant views	**King et al. 2000**	**Englund et al. 2005**	**Cyarto et al. 2006**	**Fox et al. 2007**	**Jancey et al. 2007**	**Tak et al. 2012**
Are the practical aspects of **programme design** evident?						
• Location	✓		✓		✓	✓
• Affordability			✓		✓	✓
• Individual / adaptable content	✓	✓	✓	✓	✓	✓
Is the role of **instructor behaviour** accounted for?					✓	
Are there opportunities for participants to **connect socially**?	✓	✓	✓	✓	✓	✓
Are **participant perceived benefits** considered?	✓			✓	✓	
Is there evidence of the interventions **empowering and energising effects**?				✓		
Did the intervention consider the role of **individual behaviour**?	✓			✓		
Summary score of included participant views (out of a total of 8)	5	2	4	5	6	4
Adherence rate (%)	66.6%	67%	66%	93%	65.3%*	53%

✓ Indicates theme addressed by intervention
*Adherence in this study based on the % of people who completed the programme

Table 2.5 The Presence of Participant Views Identified in the Quantitative Studies

Programme design was divided into three separate aspects (location, affordability and content). Having an individual and adaptable content to the programmes appeared to be an embedded part of all six quantitative interventions. Consideration of location was noted in four studies and affordability in three studies. *Participant perceived benefits* were considered in three studies where measures were not purely in terms of physical gains but also in the broader aspects of wellbeing or quality of life. The group nature of the programmes implied opportunities for participants to *connect socially* in all quantitative studies; although only one study used it as a planned component to enhance group cohesiveness and adherence (Jancey et al. 2007). The remaining themes of *instructor behaviour, individual*

behaviour or *empowering and energising effects* were not as prevalent and were not frequently used as a structured part of the study design.

Four of the papers report adherence rates between 65-67%, with one paper reporting 53%. However, one paper stands out with an adherence rate of 93%. The views held by participants in this study (Fox et al. 2007) were the only study to express an *empowering and energising effect*.

2.5. Discussion

It is understood that many different approaches will be necessary to engage older people in maintaining a PA lifestyle (NICE 2013). The aim of this review chose to focus on the role CBGEP play in older people's sustained adherence to exercise.

This review has four main contributions to make to the field of exercise adherence for older people. Firstly, the CBGEP with comparable measures of adherence indicated an overall mean adherence rate of 69.1%. This is far higher than the expected 50% adherence rate commonly cited in general exercise programmes (Dishman 1982, Dishman et al. 2001). However, this is slightly lower than an earlier review (van der Bij et al. 2002) who noted a 75% adherence rate to CBGEP (mean age 61.4 years). It must be noted that mean age was higher in this current review (73.8 years). Thus, the lower adherence rate may be a reflection of the fact that PA reduces with increasing age (van Stralen et al. 2009). However, it is suggested that for some older people, CBGEP could offer a valuable avenue for assisting in maintaining a PA lifestyle.

Secondly, this review offers a synthesis on the key themes from the perspective of older people which are important in helping them adhere to CBGEP. These findings are supported by others who equally found evidence of social support, perceived health benefits, feeling better, and practical aspects of programme location, cost, and individually adaptable content as being important factors for participants in CBGEP (Erickson et al. 2010; Biedenweg et al. 2014; Gillette et al. 2015).

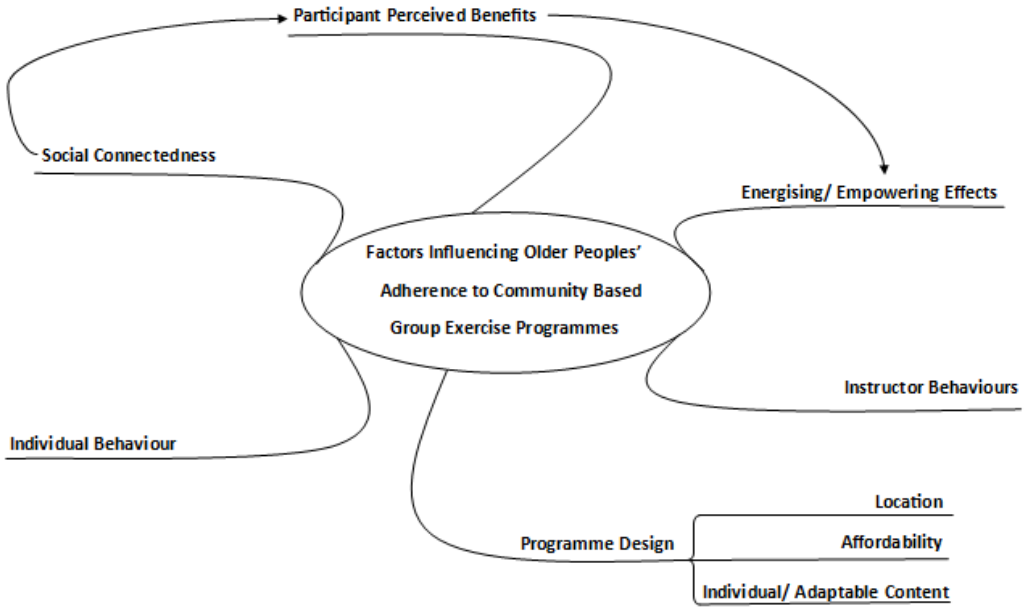


Figure 2.3 Thematic Schema Illustrating the Conceptual Interactions Between the Themes Generated from the Qualitative Synthesis

Thirdly, a thematic schema is presented which may help illustrate conceptual interactions between the themes generated from the qualitative synthesis and add to understanding around sustained PA engagement (Figure 2.3). This thematic schema shares some similarities and builds upon the work of Franco et al. (2015) who carried out a systematic review of older people's perspective of PA. In this current review *individual behaviour* appeared to be a gateway by which individuals may enter a programme. For example, those with a past history of exercising will be more inclined to continue exercising as they age (Rhodes et al. 1999) and as such their *individual behaviour* may define in part their initiation of attendance (Chiang et al. 2008; Kirby and Kluge 2013).

There was evidence that *programme design* must be structured in a way that facilitates an initial ease of attendance (Chiang et al. 2008; Dunlop and Beauchamp 2013; Fox et al. 2007; Garmendia et al. 2013; Kirby and Kluge 2013). It is necessary for the practical aspects of location, affordability, and individual or adaptable content to be in place. Without the dynamics of good *instructor behaviours*, participants could easily 'fall away', particularly in the early stages (Chiang et al. 2008; Dunlop and Beauchamp 2013; Fox et al. 2007; Garmendia et al. 2013; Hawley-Hague et al. 2014; Kirby and Kluge 2013).

Once attending, it becomes apparent that *social connectedness* is at the heart of the programme. It is this sense of support, belonging, social network, and like-mindedness which flows over into many of the *perceived benefits* participants experience (Chiang et al. 2008; Dunlop and Beauchamp 2013; Fox et al. 2007; Garmendia et al. 2013; Kirby and Kluge 2013). However, physical health gains are also necessary to hold participants in a programme (Chiang et al. 2008; Dunlop and Beauchamp 2013; Fox et al. 2007; Garmendia et al. 2013; Kirby and Kluge 2013).

As participants maintain adherence an *energising and empowering effect* appears to take place. This seems to afford them greater confidence and vision for the future (Chiang et al. 2008; Dunlop and Beauchamp 2013; Fox et al. 2007; Garmendia et al. 2013; Kirby and Kluge 2013). It might be suggested that an *energising and empowering effect* is what contributes most to adherence given the high adherence rate in the study which did show evidence of this theme (Fox et al. 2007). This could be because this feeling of empowerment enables a sense of physical purpose which increases energy and motivation leading to pleasure. This form of intrinsic pleasure may be described as hedonism. The focus of the term hedonism relates to the concepts of happiness, pleasure, and enjoyment (Huta and Waterman 2014). It is possible that this pleasure and enjoyment that people perceived from their interaction in physical activity was an important factor in contributing to a high adherence rate.

It would be over-simplistic to assume that the thematic schema is exhaustive in accounting for sustained adherence. Humans are complex, therefore their motivations, interactions, and decision-making processes will be complex. However, the studies included in this review would suggest that having some or all of these elements included in this schema present within a CBGEP, may aid ongoing adherence.

The fourth contribution this review makes to the field of older people's exercise adherence is around the fact that some quantitative studies had evidence of the themes identified by participants. Of note, having an individual and adaptable content as an aspect of programme design was a consistent feature across all the interventions. Nevertheless, the studies which matched the qualitative themes more closely did not necessarily have higher adherence rates. This lack of congruity may have been influenced by a lack of clear reporting in the quantitative studies such that the qualitative theme may have been present in the study design but not clearly reported. However, an alternative explanation must also be considered. It may be

that the qualitative themes were not significant in affecting adherence or some themes (such as programme design) may have been more influential than others. Further empirical studies investigating how the themes relate to adherence would be needed to verify findings.

It is clear when considering both quantitative and qualitative studies that PA behaviours are complex and have numerous determinants (Sallis and Hovell 1990; Weinberg and Gould 2011). The views of participants offer only one angle from which adherence may be studied. Literature also states that those from a higher socio-economic status (SES) have higher adherence to exercise (Cohen et al. 1999; Murray et al. 2012; Picroelli et al. 2014), and those who have previously formed exercise habits are more likely to maintain a physically active lifestyle (van Stralen et al. 2009). Furthermore, biological, behavioural and environmental determinants are also known to influence PA (van Stralen et al. 2009). The role of SES and exercise habits will be considered further as part of the main study.

2.5.1. Strengths and Limitations of this Systematic Review

Over the last two decades, several review articles have been published addressing factors and interventions associated with physical activity in older people (King et al. 1998; Rhodes et al. 1999; Martin and Sinden 2001; Allender et al. 2006; van Stralen et al. 2009; Baert et al. 2011; Franco et al. 2015). Systematic reviews which focus on adherence have been limited to home exercise programmes (Simek et al. 2012) or have included short-term interventions (≤ 6 months), including home exercise programmes (Picorelli et al. 2014). Therefore, none of the above reviews have focused specifically on the role CBGEP play in sustained adherence to exercise programmes in older people making this review unique. Furthermore, the methodology used to review the literature around CBGEP is novel in that no other reviews were located which used a mixed-methods systematic review approach.

Limitations of this systematic review include the fact that the synthesis is based on a small number of studies (five quantitative, three qualitative and two mixed-methods). This is reflective of the limited literature available on longer-term adherence rates to CBGEP. The restricted information regarding study design, sampling, setting, methods, and findings is also noted. Of particular consideration is the fact that in order to execute the third synthesis a conservatively critical method was employed to assess whether the quantitative studies had evidence of the qualitative themes. It is recognised that just because the theme was not reported explicitly does not necessarily mean it was not considered in the study design. This is noted as a

weakness in this review and means that conclusions must be interpreted with caution. Additionally, studies varied by research goal with only three studies having adherence as their primary outcome (Cyarto et al. 2006, Jancey et al. 2007, Tak et al. 2012). Again, this highlights the lack of longer term studies focusing on adherence to CBGEP. Reviewed studies were limited to those published in English and grey literature was not included. This may have led to the exclusion of some relevant studies.

2.6. Updated Search

The systematic search was repeated on 09/03/2016 to ascertain whether any new studies had been published since the last search in May 2014. The updated search identified 966 papers. These were screened as per the methods above. Four papers underwent full text screening which highlighted one new quantitative study (Aartolahti et al. 2015) which met the inclusion criteria. One further qualitative study (Erickson et al. 2010) was identified via hand searching during the course of this current study which the author was not initially aware of but met the qualitative inclusion criteria.

The quantitative study identified in the updated search was an RCT which assessed adherence to a weekly strength and balance group based training programme over 2.3 years (Aartolahti et al. 2015). Participants (n=182, 71% female) had a mean age of 79.7 years (range 75-98 years). Adherence was assessed as the number of sessions attended relative to the number of sessions offered as recorded by the physiotherapist leading the programme. Average adherence to the strength and balance programme was 55% (SD 29%). This adherence rate was amongst the lowest rates when compared to the other quantitative studies included in this review. However, the programme duration was the longest at 2.3 years therefore may be indicative of lower adherence during longer RCTS compared to shorter trials (Aartolahti et al. 2015). In terms of understanding the third synthesis, Aartolahti et al. (2015) had evidence of six (out of a possible eight) participant views being present. Specifically these included the role of location, affordability, individual / adaptable content, instructor, social, and individual behaviour. This again supports the consistently apparent consideration of interventional studies around CBGEP having an individual and adaptable content.

The qualitative study identified by hand searching sought to understand participant perceptions (n=19, mean age 78 years, SD 7.3 years) of a CBGEP in North America (Erickson et al. 2010). Participants had been attending the CBGEP for

between two – nine years. Themes identified were consistent with the findings of the above systematic review. Social support / companionship, perceived health / medical benefits, and feeling better were all identified as key reasons for adherence.

2.7. Summary of the Literature Review Chapter

This chapter reviewed the existing literature around older people's adherence to CBGEP. It highlighted the limited literature surrounding CBGEP both in terms of long-term adherence and the views of those who attend, particularly in relation to studies in a real-life context. Only three of the included studies (Chiang et al. 2008; Dunlop and Beauchamp 2013; Kirby and Kluge 2013) focused on ongoing CBGEP in what Belza et al. (2002) refer to as 'real-life' programmes for 'normal' people, i.e. not under laboratory conditions or research trial conditions. Thus, there is a need for further research in a real-life context to understand how and why older people adhere to CBGEP. It is believed that unique knowledge can be gained by studying groups that have engaged in these types of CBGEP on a long-term, ongoing basis. This will generate an original contribution to knowledge in terms of influencing key lifestyle behaviours aimed at preventing NCD and contributing to an improved health span. Based on the results of the systematic review the following aim, research question, objectives, and theoretical propositions were devised. The systematic review detailed in this chapter was published in Preventive Medicine (Farrance et al. 2016, Appendix 2).

2.8. Aim, Research Question, Objectives and Theoretical Propositions

The **aim** of this study was to understand older people's ongoing adherence to community-based group exercise programmes.

The central **research question** as follows was built upon the findings of the above systematic review:

> How and why have older people (≥ 60 years) sustained adherence (≥ 69.1% for ≥ 1 year) to three community-based group exercise programmes in the South West of England?

The main **objectives** of the research were to:

1. Understand the demographic, individual lifestyle features (physical activity, diet, alcohol consumption and smoking) and socio-environmental

characteristics of older people who adhere long-term to community-based group exercise programmes.
2. Collect data using participant observation, focus groups, interviews and documentation to better understand the adherence of older people (≥ 60 years) to community-based group exercise programmes.
3. Use the data to explain how and why the older people in this current study have maintained their adherence to community-based group exercise programmes.

The findings of the qualitative synthesis in this systematic review highlighted six key themes in relation to older people's adherence to CBGEP. These themes were subsequently developed into **theoretical study propositions** as part of the theoretical framework of the study**.** A proposition is defined as "a formal statement about the relationships among abstract concepts" (Vogt and Johnson 2011, p. 309). The following theoretical propositions were proposed from the literature as possible noteworthy influencers of older people's adherence to the CBGEP:

1. *Individual behaviour* is noteworthy in influencing participant adherence to community-based group exercise programmes.

2. *Instructor behaviour* is noteworthy in influencing participant adherence to community-based group exercise programmes.

3. *Programme design* is noteworthy in influencing participant adherence to community-based group exercise programmes.

4. *Social connectedness* is noteworthy in supporting participant adherence to community-based group exercise programmes.

5. *Participant perceived benefits* are noteworthy in influencing participant adherence to community-based group exercise programmes.

6. *Energising and empowering effects* are noteworthy in influencing participant adherence to community-based group exercise programmes.

These propositions were central in seeking to understand older people's adherence to CBGEP in this current study. The following chapter details the way in which the researcher chose to answer the research question and how the above theoretical propositions were incorporated as part of the study design.

3. Methodology, Rationale, and Study Design

3.1. Introduction

This chapter outlines the methodology, research design, and research methods employed in understanding how and why three groups of older people have adhered for ≥ 1 year to community-based group exercise programmes (CBGEP) in the South West of England. The chapter includes the ethical, and health and safety considerations as well as the methods of data collection and analysis.

3.2. Methodological Approach and Assumptions

The term methodology is concerned with the philosophy of methods and is used to describe the philosophical worldview or paradigm which underpins and informs research (Jupp 2006; Creswell 2013). A researcher's worldview or paradigm determines the inquiry and how it should be carried out (Creswell 2013). A paradigm has been summarised as "a basic set of beliefs that guide action" (Guba 1990, p. 17). Answers to the questions of ontological, epistemological and methodological nature reveal a researchers paradigm (Guba 1990). Specifically, *ontology* relates to reality, the nature of being or existence (McLaughlin 2009); *epistemology* to the theory of knowledge (Cowan 2009), and *methodological* nature to the beliefs about how to find out the knowledge (Guba 1990).

This author's methodological standpoint comes from a critical realist perspective. This stems from a post-positivist approach and is positioned between positivism / objectivism and constructivism / relativism (Clark 2008). Critical realism embraces a complex view of reality and is aware of the influence of agency and structural factors prevalent in human behaviour (Clark 2008).

A critical realist view essentially holds to an understanding that "there are real objects which exist independently of our knowledge of their existence" (Schwandt 2007, p. 256). Ontologically critical realism assumes reality to exist but

> "only imperfectly apprehendable because of basically flawed human intellectual mechanisms and the fundamentally intractable nature of phenomena" (Guba and Lincoln 1994, p. 110).

As such, triangulation from multiple sources is required to understand reality (Christie et al. 2000). Epistemologically, critical realism has been referred to as 'modified objectivist' in the sense that findings are "probably true with awareness of

values between them" (Christie et al. 2000, p. 9). The kind of knowledge produced to some extent will be dependent upon the questions we ask in relation to the world around us and unavoidably a reflection from the researcher's own perspective (Danermark et al. 2005; Maxwell 2012).

Critical realists seek to carry out their inquiries in natural settings, thus collecting situational data from emic perspectives (Lincoln and Guba 1994). On the whole this is achieved via the use of qualitative techniques although quantitative techniques may also be utilised (Lincoln and Guba 1994; Christie et al. 2000).

In relation to this current study, a case study research design was selected since it would allow the researcher to carry out their study within the natural settings of the respective CBGEP. The use of multiple qualitative data collection techniques supported triangulation thus remaining consistent with a critical realist ontology.

3.3. Case Study as a Strategy of Inquiry

Literature on case study research is rather heterogeneous with many authors writing on the topic of case study presenting their own definitions and little agreement on what a case study is (Lincoln and Guba 1985; Swanborn 2010). The two major proponents of case study research are Stake (1995) and Yin (2013). However, their texts offer two quite different approaches to case study research as reflected by their respective paradigmatic stances (Bassey 1999; Appleton 2002). Stake (1995) sits within a constructivist (or naturalistic) paradigm, whereas much of Yin's (2013) writing tends towards the post-positivist or realist orientation (Bassey 1999; Appelton 2002; Abma and Stake 2014). However, Yin (2013) is explicit in stating that case study can also embrace a constructivist viewpoint, acknowledging "multiple realities having multiple meanings, with findings that are observer dependent" (Yin 2013, p. 17).

When considering the adoption of a particular author's approach to case study the researcher must carefully consider their own philosophical standpoint. This is important in order to justify the particular methodological approach adopted. In studying older people's adherence to CBGEP, the researcher needed to adopt an approach to case study which was consistent with the philosophical underpinnings of critical realism. Since Stake's (1995) approach stems more from a constructivist viewpoint, it is not consistent with a critical realist philosophy. Conversely, Yin's (2013) approach being from a post-positivist perspective is congruent with a critical realist stance. Therefore Yin's (2013) approach to case study was the preferred

strategy. The rest of this chapter seeks to detail the various decisions as part of the study design as aligned with Yin's (2013) approach to case study.

Yin (2013) defines case study research as an empirical inquiry that:

> "investigates a **contemporary phenomenon** (the "case") **in depth** and within its **real-world context**, especially when the boundaries between phenomenon and context may not be clearly evident…in which there will be many more variables of interest than data points and as a result relies on **multiple sources of evidence**, with data needing to **converge in a triangulating fashion**, and as a another result benefits from the prior **development of theoretical propositions** to guide data collection and analysis" (Yin 2013, p. 16, 17).

Case study research has been selected for this current study because it is strong on reality, allowing the researcher to focus on a 'case' whilst retaining a holistic and real-world or real-life perspective (Cohen et al. 2007; Merriam 2009; Yin 2013). A 'real-life' perspective implies studying programmes which are not carried out under laboratory or trail conditions (Belza et al. 2002). This is relevant to this current study because focusing on real-life CBGEP which have demonstrated sustained participant adherence and ongoing financial sustainability are of particular import in this present economic climate. Furthermore, a case study approach permitted an in-depth investigation with the use of multiple sources of evidence (questionnaires, archival records, participant observation, focus groups, interviews and documentation). The use of multiple sources of evidence was important because no one method in isolation would have been adequate in answering the research question since it would have examined the phenomenon of adherence from one perspective only. Rather the use of all the above methods allowed for the case to be understood in a multifaceted way. For example, the focus groups provided understanding from the participant viewpoint, interviews with the instructor, and documentation added understanding from a different dimension, and participant observation offered further insight. The addition of questionnaires and archival records assisted in supporting important contextual aspects of the CBGEP. Thus, a greater depth of understanding of the complex phenomenon of older people's exercise adherence was achieved.

In addition, case study as a strategy of inquiry is of relevance in the domain of exercise and has been used in previous studies as a means of studying older people's adherence to CBGEP (Dunlop and Beauchamp 2013; Kirby and Kluge

2013). It was therefore deemed to be an appropriate methodology to use in the context of this current study.

3.3.1. Definition of a Case (Unit of Analysis)

The case is the main subject of the study in case study, however, articulating what constitutes a case (or unit of analysis) can be difficult (Baxter and Jack 2008; Sandelowski 2011).

A case is "a phenomenon of some sort occurring in a bounded context. The case is, in effect, your unit of analysis" (Miles and Huberman 1994, p. 25). A case or unit of analysis could be an individual, organisation, programme, community, institution, process, policy, or practice (Yin 2013). Ultimately it is the researcher who decides what constitutes the case (Sandelowski 2011). Selecting an appropriate unit of analysis is a fundamental part of study design. Hamel et al. (1993) discusses the importance of differentiating between the 'object of study' i.e. the phenomenon of interest to the researcher, and the 'case' i.e. the concrete manifestation of that phenomenon. In this study, the object of study related to the phenomenon of adherence with the case (or unit of analysis) being the CBGEP which have exhibited sustained participant adherence.

Once the unit of analysis is defined it is important to clarify how the case is to be bound. This is essential since one of the challenges with case study research is that researchers may attempt to answer a question that is too broad. Placing boundaries on a case prevents this and ensures that the study remains realistic in scope (Baxter and Jack 2008). Cases can be bound by time and place (Creswell 2013), time and activity (Stake 1995), or definition and context (Miles and Huberman 1994). Yin (2013) considers the case boundaries in terms of:

> "the time period, social groups, organisations, geographic locations, or other conditions that fall within (as opposed to outside of) the case in a case study, understanding that the boundaries can be fuzzy" (Yin 2013, p. 237).

The cases in this current study were bound by time in that participants had to have been attending for ≥ 1 year to be eligible to be included. The cases were bounded geographically in that they had to be within the Dorset county locality for the pragmatic reason of ease of access and traveling time. Finally, the cases were bound by programme adherence such that cases could only be included if they had adherences rates of ≥ 69.1%. This was selected as a reflection of higher adherence

programmes as informed by the results of the quantitative synthesis in chapter two (Section 2.4.4).

3.3.2. Types of Case Study

Yin (2009) proposes three main types of case study: descriptive, exploratory or explanatory. A descriptive case study sets out to describe a phenomenon in its real-life context. An exploratory case study aims to develop hypotheses and propositions for further research studies, whilst an explanatory case study seeks to explain how or why some condition came about. Furthermore, within these categories cases can be single or multiple. As their names suggest, a single case study is organised around a single case and a multiple-case study around two or more cases. Multiple-case designs are considered more robust than single because they have the advantage of being able to seek literal replication by predicting similar results, thus aiding analytical generalisation (Baxter and Jack 2008; Yin 2013).

For the purposes of this current study a multiple, explanatory research design was utilised. This was chosen because the study sought to explain how and why the older people in the three selected cases had maintained adherence to their respective CBGEP. Had the context been the same in each case then a single case study design would have been more appropriate (Baxter and Jack 2008). Whereas in this study, each case is set in a different context, be that a different socio-economic area, referral route or indoor / outdoor exercise environment. The procedure for carrying out a multiple-case study design can be seen in Figure 3.1.

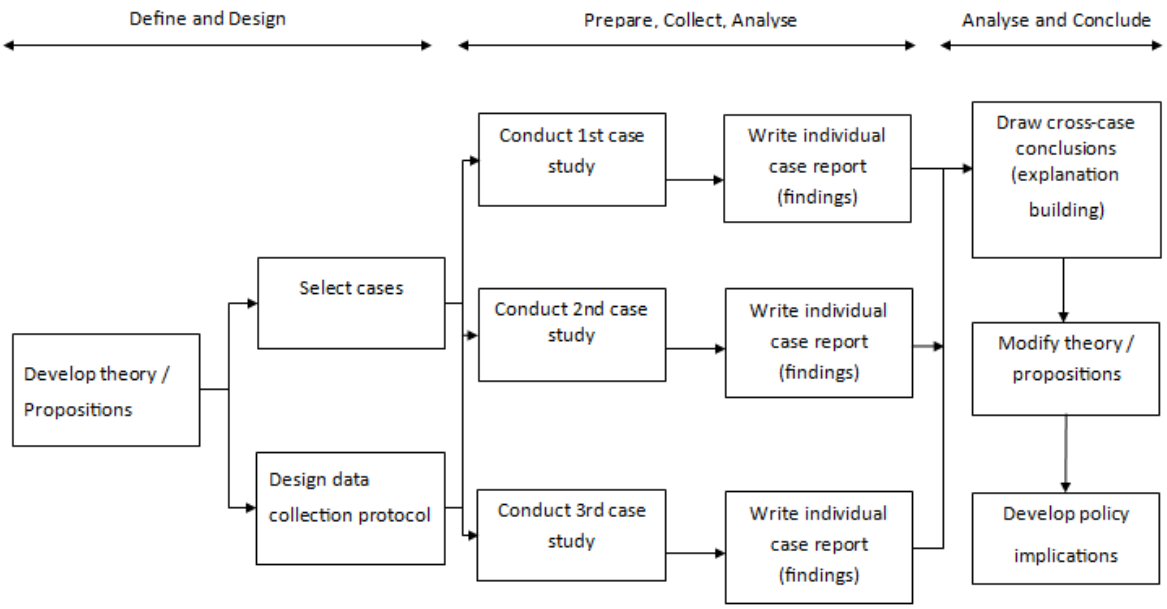


Figure 3.1 Multiple-Case Study Procedure (adapted from Yin 2013, p. 60)

3.3.3. Role of Theory in Case Study Research

Theory, as supported or derived from the evidence has been said to be one of the most generalisable aspects of case study research (Gillham 2000). For example, the data itself may be particular to one specific programme but the theory (rooted in the data), may be of use to others, or generalisable in understanding how other programmes work.

Yin (2013) argues for the distinct inclusion of a theoretical framework or propositions to guide data collection and analysis. The case, after all is "an opportunity to shed empirical light about some theoretical concepts or principles" (Yin 2013 p. 40). Having a theoretical starting point is instrumental in enabling the researcher to "make a grounded choice out of all possible variables, and to have a frame for the interpretation of results" (Swanborn 2010, p.77). One of the key differences between this post-positivist approach to case study and other qualitative designs such as ethnography or grounded theory is the use of theory to guide the design and analysis (Benedichte Meyer 2001). Ethnography and grounded theory consciously avoid stipulating theoretical propositions or perspectives at the outset of the study, rather allowing the theory to emerge directly from the data (Lincoln and Guba 1985; Corbin and Strauss 2008).

According to Willig (2001) case study research can accommodate theory in two ways. Firstly, theory can be in the form of study propositions which help the

researcher in understanding what to examine within the context of the study. As such the theory is featured in the study design. Secondly, it can be used in the role of theory development and the study can be designed in such a way that it either tests an existing theory, or generates a new theory.

Theory has been used in three ways in this current study. Firstly, Dahlgren and Whitehead's (1991, see Figure 3.4, Section 3.7.1) model of the determinants of health has been used in the design to structure the quantitative data collection process. Using this model helped set the boundaries of the case by allowing the model to frame what data were collected (Denzin and Lincoln 2011). Secondly, the results of the qualitative component of the systematic review helped form the following theoretical propositions.

1. *Individual behaviour* is noteworthy in influencing participant adherence to community-based group exercise programmes.
2. *Instructor behaviour* is noteworthy in influencing participant adherence to community-based group exercise programmes.
3. *Programme design* is noteworthy in influencing participant adherence to community-based group exercise programmes.
4. *Social connectedness* is noteworthy in supporting participant adherence to community-based group exercise programmes.
5. *Participant perceived benefits* are noteworthy in influencing participant adherence to community-based group exercise programmes.
6. *Energising and empowering effects* are noteworthy in influencing participant adherence to community-based group exercise programmes.

These were subsequently used to inform the focus group guide and in the analytic strategy of explanation building as a means of theory building. Thirdly, the humanisation framework (Todres et al. 2009) was utilised in an *a priori* manner to further understand participants' adherence from a humanising perspective.

3.4. Research Design

Research design is needed to ensure that "the evidence obtained enables us to answer the initial question as unambiguously as possible" (de Vaus 2001, p. 9). The design acts as a plan or structure for how the research process will be conducted in

order to address the research questions. As such it can be seen as a blueprint for the research and includes the procedures for collecting and analysing the data (McMillan and Schumacher 2001; Yin 2013). Yin (2013) proposes five components which are important in case study research design and each of these will be considered below.

Firstly, case study research design involves formulating an appropriate research question. As mentioned earlier, the research question in this current case study takes the form of a how and why question in keeping with a case study design. Secondly, the propositions must be considered in the design phase. In the current study, the propositions were developed from the literature review as presented above in Section 3.3.3. Thirdly, the unit of analyses (or cases) were carefully selected. Each case was specifically chosen to better understand the object of study i.e. participants' ongoing adherence to the programmes.

Fourthly, the logic linking the data to the propositions must be considered as part of the research design. This involves having a strategy in place to guide the analysis. The analytic strategy in this current study for the qualitative data is inductive thematic analysis as outlined by Braun and Clark (2006, see Section 3.9). In addition to the analytic strategy, the analytic technique was considered. In this current study, an explanation building strategy was deemed most appropriate (see Section 3.4.1).

The final component of study design included the consideration of possible rival explanations. A rival explanation says that an influence other than the intervention caused the phenomenon (Yin 2013). For example, literature states that those who have previously formed exercise habits are more likely to continue this habit (van Stralen et al. 2009). Thus, it could be that the participants in this current study adhered not because of the programme but because they have always exercised. Addressing rival explanations strengthens the findings. However, it is only possible to address them thoroughly if sufficient data has been collected in relation to them. Hence this must be considered in the design phase.

In this current study two possible rival theories are presented based on the literature. Data were therefore intentionally collected to address these rival explanations.

1. Participants were from a high socio-economic status which is known to influence exercise levels and adherence (Cohen et al. 1999; Murray et al. 2012; Picroelli et al. 2014).
2. Participants had already formed exercise habits; therefore their adherence was a continuation of this habit (van Stralen et al. 2009).

3.4.1. Explanation Building as an Analytic Technique

The analytic technique of explanation building was employed in this current study as a means to explain older people's adherence to CBGEP. To 'explain' a phenomenon is "to stipulate a presumed set of causal links about it, or 'how' or 'why' something happened" (Yin 2013, p. 147). These causal links are often complex and challenging to assess in a precise manner. As such, the explanation building in this study occurred in a narrative form and incorporated the theoretical propositions in an effort to be more focused (Yin 2013). As the case study evidence was examined, the explanatory propositions were revised and the evidence was re-examined from this new perspective in an iterative way.

Explanation building was selected as an analytic technique in this current study because it is relevant for multiple cases, in which findings are aggregated across a series of cases. It was also the intent of the study to seek to explain the good adherence rates in the CBGEP. Thus, employing an analytic strategy suitable to explanation building was necessary. The iterative nature of the analytic strategy of explanation building is illustrated in Figure 3.2 (Yin 2013).

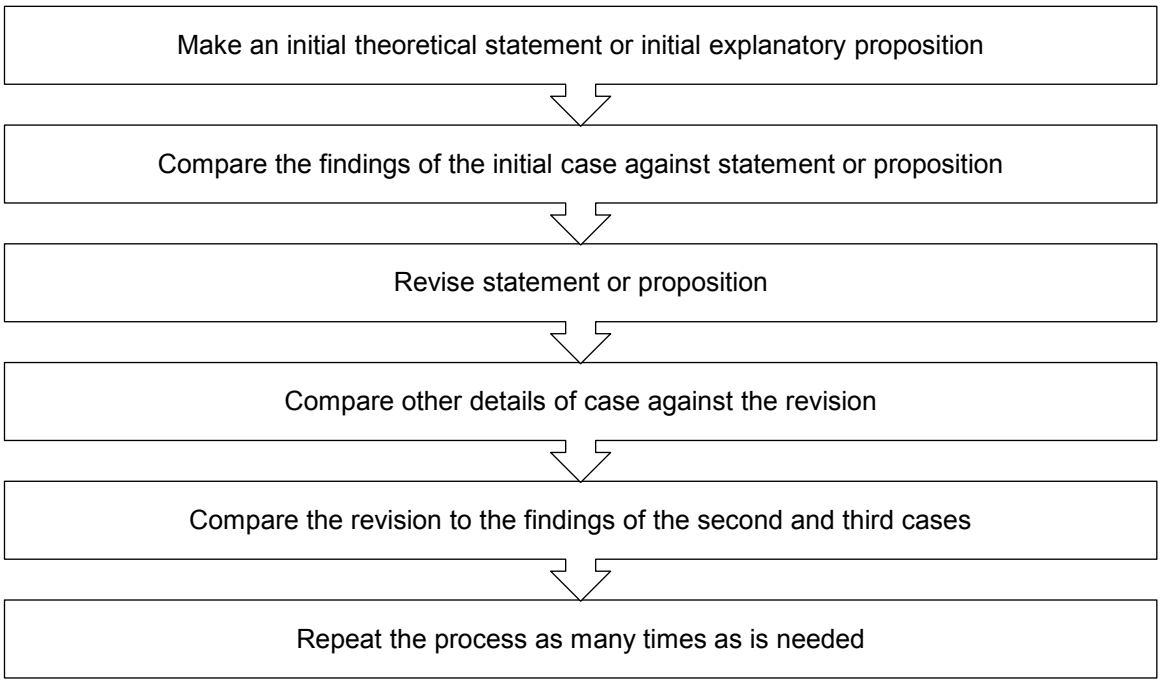


Figure 3.2 Iterative Nature of Explanation Building (Yin 2013)

3.4.2. Quality in Case Study Research

In empirical social science research, four tests are commonly used to establish quality: construct validity, internal validity, external validity, and reliability (Yin 2013). Since case study is located under this larger body they are also relevant for this research study. Several strategies have been developed by Yin (2013) to deal with these four tests. Table 3.1 summarises these tactics and how they relate to this current study.

Tests	Case Study Tactic	Phase of Research in Which Tactic Occurs	Action Taken in This Current Study
Construct Validity	Use multiple sources of evidence	Data collection	Use of documentary evidence, participant observation, focus groups and interviews
	Establish chain of evidence	Data collection and composition	Focus group and interview data both recorded and transcribed. Multiple evidence sources entered into customised database
	Have a participants review draft case study findings	Composition	Participants offered a copy of the study summary of findings for their own case and the other two cases included in this study (member checking)
Internal Validity	Do explanation building	Data analysis	Data compared to each study proposition using explanation building analytic technique
	Address rival explanations	Data analysis	Data compared to rival explanations
External Validity	Use replication logic in multiple-case studies	Research design	Multiple cases investigated using replication logic
Reliability	Use case study protocol	Data collection	Same data collection procedure followed for each case. Consistent questions used in the interviews
	Develop a case study database	Data collection	Documentation, transcripts, notes and electronic evidence stored in appropriate database

Table 3.1 Case Study Tactics and Actions Taken to Address Validity and Reliability (Adapted from Yin 2013)

3.4.2.1. Construct Validity

Construct validity refers to the degree to which a study investigates what it claims to investigate (Denzin and Lincoln 2000). Yin (2013) suggests three tactics to increase construct validity in case study. Namely, the use of multiple sources of evidence, establishing a chain of evidence, and having key informants review a draft of the case report (Table 3.1). This current study therefore sought to address construct validity in these three ways.

Firstly, the use of multiple evidence sources was employed as a means of supporting convergent lines of inquiry (Yin 2013). Thus, data from participant observation, focus group, interviews, and documentation were drawn upon to establish validity. Secondly, a chain of evidence was formulated by ensuring that the multiple sources of data were entered into the customised data base. Therefore, the findings could be shown to come from the specific data collected in this present study, thus strengthening the reliability.

Thirdly, participants were invited to read the case study findings as a form of member checking or respondent validation. This afforded participants the opportunity to challenge any of the key findings, thus serving to aid construct validity (Yin 2013). Participant feedback on initial findings helps in corroborating and refining findings (Barbour 2001). The researcher however must be mindful of the fact that they are seeking to provide an overview to a wide audience whereas the study participants will have different concerns (Mays and Pope 2000). This can lead to a discrepancy in views.

Member checking in this current study was carried out by providing printed copies of the summary of findings for all participants in each of the three cases. The researcher then attended each CBGEP for a further session and informally spoke with participants about their view of the study findings. Participants were also provided with the researcher's telephone, email, and postal details if they wished to contact her to offer further feedback.

3.4.2.2. Internal Validity

Internal validity refers to the presence of causal relationships between the variable and the results and is relevant during the data collection and data analysis phases (Gibbert and Ruigrok 2010). In this current study, internal validity was addressed by using explanation building as an analytic technique. This occurred in a narrative form which sought to reflect the theoretical propositions noted in the literature.

Furthermore, to strengthen the cause-effect link (and thus internal validity) this analytic technique followed an iterative process and involved the use of rival explanations which were shown to be supported or disputed based on the study findings (Table 3.1).

3.4.2.3. External Validity

External validity is concerned with the generalisability of the results (Gibbert and Ruigrok 2010). It must be remembered that the goal of case studies is not statistical generalisation. Rather analytical generalisation is sought, that is generalisation from empirical observation to theory (Yin 2009). In this current study, the use of multiple cases allowed for replication logic which supported the external validity of the study through analytic generalisation (Table 3.1).

3.4.2.4. Reliability

A study could be considered to have good reliability if another researcher was to conduct the same study over again and arrive at the same insights (Denzin and Lincoln 2000). Furthermore, reliability is concerned with minimising errors and biases in the study (Yin 2013). In this current study reliability was addressed by documenting procedures clearly at the outset of the study in the form of a case study protocol (Appendix 3), and having a well-developed case study database (Appendix 4). The use of a case study protocol and database are two ways of increasing the reliability of a study (Yin 2013).

3.4.2.5. Reflexivity

Reflexivity can take many forms in the social sciences in terms of definitions and how it is understood (Lynch 2000). In the context of this study it is defined as the awareness of the researcher of their effect on the process and outcomes of the research (Holt and Thorpe 2008). For novice researchers the practice of reflexivity is advised (DeWalt and DeWalt 2002). This serves as a means of avoiding researcher bias by taking account of the researcher's involvement. The researcher does not "remain 'outside' the subject matter; our presence, in whatever form, will have some kind of effect" (Holt and Thorpe 2008, p. 184). Thus, the researcher must be aware of their influence on the study and the study participants. In addition, attention must also be paid to the influence of the participants on the researcher (Yin 2013). Failure to recognise this can taint the research process and findings.

As an experienced physiotherapist the researcher held certain views and assumptions about older people and physical activity. Holding these beliefs and

assumptions may present a risk of bias on the part of the researcher. To diminish the risk of these views and assumptions from influencing the research process, the researcher documented any pre-conceptions prior to data collection and analysis in a reflexive diary. Regular peer-debriefing and discussions with academic supervisors also helped support this process (see Appendix 5).

3.4.3. Researcher-Participant Relationship

The researcher-participant relationship must be considered at the outset of the study since important methodological considerations flow from the nature of this relationship (McGinn 2008). Positivist researchers would position themselves as detached observers seeking to maintain a neutral position (McGinn 2008). Those who are more constructivist in nature would argue that since the researcher and their participants are the main data collection 'instruments', through which there is the mutual creation of knowledge, then neutrality is not possible (Flick 2009). Therefore a researchers relationship with participants may fall anywhere on the continuum from outsider to insider (Cohen et al. 2007, Figure 3.3).

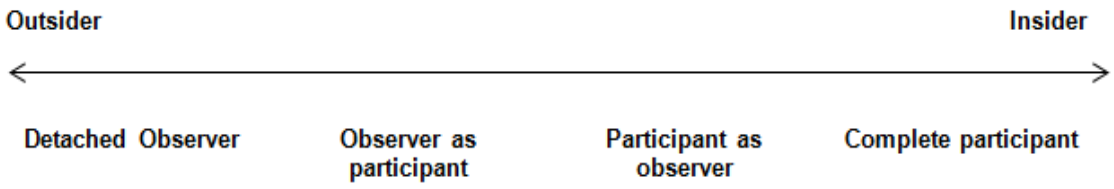


Figure 3.3 The Outsider / Insider Researcher Continuum (Cohen et al. 2007, p.179).

In case study research, the researcher is expected to provide an accurate and detailed account of the case (Willig 2001). As such, it is suggested that the researcher takes the role of a witness, or reporter, remaining close to the scene in order to observe events carefully (Willig 2001).

In this current study the researcher sought to adopt a mid-point position between outsider-insider. However, the researcher-participant relationship may evolve over time (McGinn 2008). The extended time spent as a participant observer in this current study meant that over time the researcher moved from newcomer to a level of personal acceptance, thus shifting slightly towards the insider end of the spectrum (Cohen et al. 2007). The practice of keeping a reflexive diary, regular peer-debriefing and discussions with academic supervisors sought to minimise the risk of researcher bias.

3.5. Sampling Strategy

For case studies, smaller sample sizes are used since they are concerned with depth and richness of data over quantity (Yin 2013). Thus, this study involved only three cases but in great depth. The sampling strategy used to select the three cases in this current study was based on theoretical sampling. This is not random or stratified. Rather, theoretical sampling allows the choice of cases to proceed on the basis that they are "particularly suitable for illuminating and extending relationships and logic among constructs" (Eisenhardt and Graebner 2007, p. 27). The theoretical sampling was theoretically driven in a pre-specified sense with the choice of cases being made on conceptual grounds (Miles and Huberman 1994). The selection of each case is explained below.

3.5.1. Population and Sample

The first case was selected due to a high, long-term participant adherence rate. Attendance records for Case 1 (January 2000 – November 2014) indicated that 82% of participants had adhered to the programme for ≥ 1 year (source: archival records Case 1). It was this programme which led to the development of the current study. The second case was selected to understand adherence in relation to primary care exercise referral schemes which have not historically provided evidence of participants adopting a sustainably active lifestyle (Pavey et al. 2011). In order to understand adherence from a range of socio-economic backgrounds, a third case was sought based on a lower total community level deprivation score (based on Office for National Statistics 2014).

These three cases were chosen to allow comparisons and understand whether results were consistently replicable in order to aid a more robust explanation of theory / propositions (Eisenhardt and Graebner 2007). The cases served to extend understanding of programmes which have been 'successful' in helping participants adhere on a long-term basis.

In order to understand what was meant by 'successful programmes', consideration was made of adherence in terms of duration (≥ 1 year) and rate (≥ 69.1%). Adherence of ≥ 1 year was selected based on NICE Behavioural Change guidelines (2014). These guidelines recommend regular attendance of a year or more to bring about a long-term change in behaviour. Other sources have cited six months as the time frame from which maintenance occurs (Stigglebout et al. 2006; van Stralen et al. 2009). However, there is little empirical proof that this is the point from which

habits develop (van Stralen et al. 2009). In terms of participant adherence, findings from the above quantitative systematic review synthesis reported that CBGEP have a mean adherence rate of 69.1% (see Chapter two, Section 2.4.4). Therefore, to be considered 'successful' as defined within the limits of this current study, programmes had to have adherence rates of ≥ 69.1% for ≥ 1 year.

Whilst the case selection was based on theoretical sampling, participant selection utilised convenience sampling. Convenience sampling means that the most conveniently available people are utilised as participants (Polit and Beck 2012). To access the CBGEP the researcher sought permission from the programme instructors. Participants who had attended the CBGEP for ≥ 1 year and were ≥ 60 years were invited to be involved in the study. The inclusion criterion of ≥ 60 years was chosen to be consistent with the inclusion criteria for the qualitative component of the systematic review (Chapter two). For clarity, the older people who participated in the CBGEP are referred to in this current study as 'participants' and the instructors as 'instructors'.

3.6. Ethical Considerations

Ethical, and health and safety issues must be addressed when undertaking any research with human participants. Ethical approval to conduct this study was obtained from Bournemouth University Research Ethics Committee (Appendix 6).

Ethical considerations needed to be made about how much to disclose regarding who the researcher was and what they were researching. In this current study the researcher was introduced to the participants by the instructor as a physiotherapist who was carrying out a research project about older people who have kept attending CBGEP.

Special care was taken in regards to gaining informed consent, protecting participants from harm including the avoidance of any deception, and ensuring anonymity and confidentiality (Yin 2013). Consideration of these issues will be presented below.

3.6.1. Informed Consent

Gaining informed consent from participants is essential to ethical research (Cohen et al. 2007). Informed consent is the process by which researchers ensure that potential participants clearly understand what is involved in the study, including any risks or benefits. It must be communicated in a way that is free from coercion.

Participants must also be aware that they have the right to decline participation, without any negative consequences (Cohen et al. 2007).

Potential participants were provided with an information sheet prior to data collection. This detailed in accessible language a summary of the project including its aims and objectives, what participant involvement would entail at each stage, who to contact for further information and that their involvement was entirely voluntary (Appendix 7). The fact that participants could choose to opt out at any stage was emphasised along with assurance of anonymity and confidentiality. The aim of this information sheet was to ensure that potential participants had sufficient information to enable them to make an informed decision about whether they wished to be involved. After reading the information sheet participants were asked if they had any further questions. If they were willing to be involved they then completed a written consent form (Appendix 8). All participants were encouraged to keep the information sheet for their reference and offered a copy of the consent form.

3.6.2. Anonymity and Confidentiality

Anonymity and confidentiality are concepts equally central to ethical research. Anonymity is concerned with ensuring that the identity of participants is concealed from publicly available data, whereas confidentiality refers to how the data is protected and who has access to it (Lavrakas 2008). In this study, to protect participant confidentiality and privacy each participant was assigned a unique identification number. In this way names were not required to identify information. Participant identification numbers were linked to their name and age and were stored on a research log data sheet. Any personal or location identifiers were removed from documents and transcripts before being added to the case study database to maintain anonymity. It would not be possible to identify individuals from the reported results or the disseminated research findings; thus anonymity was maintained. All electronic data related to the study was stored on a University computer and was password protected. Any written material was held in a locked filing cabinet within a locked room.

3.6.3. Health and Safety Assessments

It is important to consider any foreseeable risks to anyone's health and safety that may occur as a result of this project. Appropriate Bournemouth University risk assessments were completed prior to the commencement of this study and were monitored by the School Research Committee (see Appendices 9 and 10).

3.7. Data Collection Methods

Within this current study, multiple methods were used to collect data. This is appropriate in case study research and reflects the critical realist perspective of the researcher. Methods are seen as:

> "the nuts and bolts of research practice…It is through methods that methodology and epistemology become visible" (Carter and Little 2007, p. 1325).

Unlike experimental, survey or historical research, case study does not stipulate any particular method for data gathering or analysis (Merriam 2009). Rather, any method of data collection can be used in case study but must be informed by the nature of the research question (Yin 2013). This section therefore presents the various data collection methods employed in this study and their rationale for use.

3.7.1. Questionnaire

Dahlgren and Whitehead's (1991) model for determinants of health (Figure 3.4) formed the theoretical basis to the development of the questionnaire data collection tool in this case study. This model was selected since the study sat within the context of seeking to understand adherence to CBGEP with a view to the long-term prevention of NCD and improved health and wellbeing. The WHO states that the lifestyle behaviours of PA, diet, smoking, and alcohol intake are critical in the prevention of NCD (WHO 2010). These lifestyle factors are at the core of Dahlgren and Whiteheads model (1991). Participants were therefore asked to complete questionnaires detailing these four factors (Appendix 11). This information assisted in providing a detailed understanding of the participant lifestyle behaviours and helped set the context for the CBGEP under study.

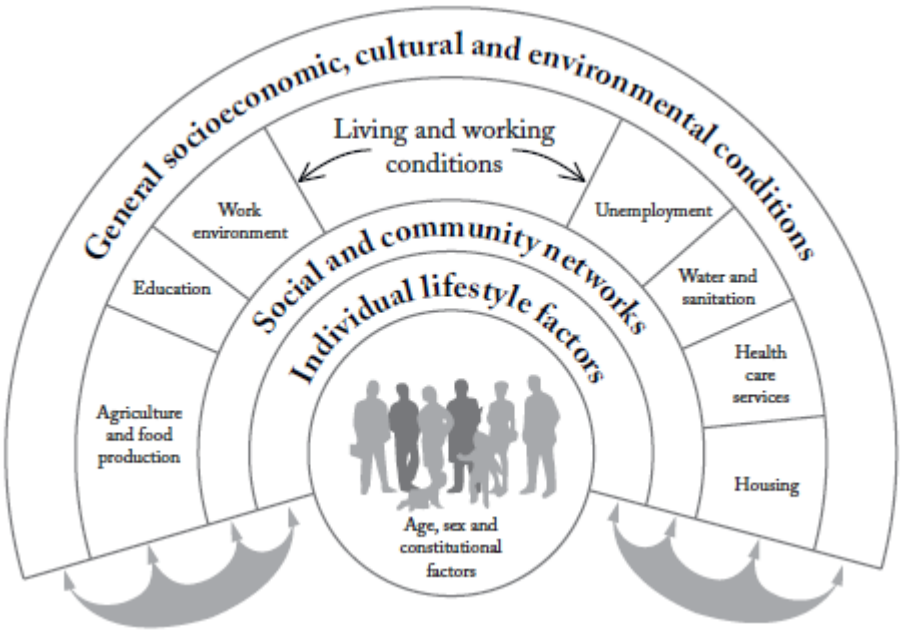


Figure 3.4 The Main Determinants of Health (Dahlgren and Whitehead 1991)

Information relating to PA was collected using the Phone-FITT questionnaire (Appendix 11). This was selected since this is older person specific, takes an average of ten minutes to complete, and considers frequency, and duration of household as well as recreational physical activities (Gill et al. 2008). Higher scores indicated higher activity levels. The Phone-FITT is an interview-administered questionnaire with evidence of test-retest reliability, and validity (Gill et al. 2008). It has been used in several studies of a similar demographic to this study population (Iliffe et al. 2014, Pritchard et al. 2014).

The quality of participants' diet was evaluated by assessing adherence to the Mediterranean diet. This was selected as it is a dietary pattern known to protect against the risk of chronic disease in older people (Schroder 2007; Martinez-Gonzalez et al. 2009). The Mediterranean Diet Adherence Screener (MEDAS) was used as a short screener of diet quality and has been previously validated for use with older people (Schroder et al. 2011; Sofi et al. 2014) (Appendix 11). Participants were also asked to answer questions relating to smoking habits (past and present) and typical weekly alcohol consumption (Appendix 11).

Health, however, is broader than these particular lifestyle behaviours. Therefore, in order to address the boarder health determinants, participants were also asked to provide information about their social and community networks. Social networks are relatively easy to assess since respondents tend to have reliable recall and provides

some measure of social integration (Marmot and Wilkinson 2006). Nonetheless, it does not specify the quality of the support provided. This is more comprehensively determined by the type of support provided by the network and can be in terms of emotional support (including informational support or support that helps with raising self-esteem), or practical support which may include financial support. This can be termed perceived support and reflects how much an individual feels supported and how much support they have actually received. In this way it was important to distinguish between both the objective (social networks) and subjective (perceived) social support of individuals (Marmot and Wilkinson 2006). For this reason it was deemed necessary to ask participants to complete two different questionnaires. Firstly, the abbreviated version of the Lubben Social Network Scale (LSNS-6) (Appendix 11) was used to measure social network size and density (Lubben et al. 2006). Secondly, the Multidimensional Scale of Perceived Social Support (MSPSS) was used to assess perceived support (Zimet 1988).

Socio-economic status (SES) in this current study was defined in terms of participants' neighbourhood and individual SES. Participant residential postcodes were used to assess neighbourhood SES based on Index of Multiple Deprivation (IMD). This score is based on a range of deprivation indicators including income deprivation, employment deprivation, health deprivation, education deprivation, barriers to housing and services, crime, and living environment deprivation (Office for National Statistics 2016). Based on the above indices, English postcode areas are ranked according to deprivation. The least deprived neighbourhood in England has a rank of 32 482 and the most deprived a rank of 1. Thus, the IMD was utilised as a measure of neighbourhood SES (Marden et al. 2012). This is consistent with other studies with exercise programme participants who used this same measure as a score of deprivation (Hawley-Hague et al. 2014). Further individual SES data were collected from participants in terms of their highest education level and current employment status. This information was important in order to address the rival theory that participants adherence may have been due to their socio-economic demographic (Picorelli et al. 2014).

The questionnaires thus collected data on what Dahlgren and Whitehead (1991) consider to be the foremost determinants of health (Figure 3.4). A contextual understanding of the participant determinants of health was considered necessary in seeking to explain the boarder aspects of how and why they adhere in an ongoing, long-term manner to the CBGEP.

Piloting the Questionnaires

The questionnaires were pilot tested with older individuals to ascertain ease and estimated time of completion. The questionnaires took an average of 20 minutes to complete.

3.7.2. Archival Records: Records of Attendance

Within case study research, archival records can be a useful source of evidence (Yin 2013). Archival records include: computer records, survey data, organisational records, service records, maps, charts, personal records, or population census data (Yin 2013). The researcher must be mindful of the inherent bias attached to this type of data. Yin (2013) warns that the archival records will have been produced for a specific purpose and audience other than this particular case study. Thus, accuracy of the records cannot be guaranteed. There is also the challenge of restricted access due to privacy.

Archival records in the form of participant attendance records were utilised in this current study. The CBGEP instructors were approached and all consented to share anonymised records of their attendance register. These records were used to calculate the programme and individual participant adherence rates. The programme adherence rate was used to reflect the overall retention rate of the programme. This was calculated as the percentage of participants who had adhered to the programme for ≥ 1 year in the year prior to data collection. Secondly, the percentage of sessions attended by each participant who consented to be in the study was utilised as a measure of individual adherence. This was calculated as the proportion of attended sessions relative to offered sessions and expressed as an adherence percentage.

3.7.3. Participant Observation

Observation as a method “entails the systematic noting and recoding of events, behaviours, and artefacts (objects) in the social setting chosen for study” (Marshall and Rossman 2006, p. 98). Participant observation is traditionally rooted in ethnographic research and as such is a qualitative method. The underlying assumption is that within the study population there are multiple perspectives which the researcher wishes to understand (Mack et al. 2005). Oftentimes there is a disparity in behaviour between what someone says they believe and what they

actually do. Observation is a compelling way to check what is reported during focus group discussions or interviews and what actually happens in practice (Mack et al. 2005). It involves first hand, eyewitness involvement in the chosen social setting for study (Marshall and Rossman 2005). Participant observation involves learning what life is like for an 'insider' in the exercise group whilst unavoidably being an 'outsider'. It has also been suggested as a way to increase the validity of the study since observations help the researcher in understanding the context and phenomenon being studied (DeWalt and DeWalt 2002).

Participant observation was chosen as a research method in this study since it would allow for unstructured observations, providing a deeper understanding of context which would only be possible through personal experience. However, there are several weaknesses in this research method. Firstly, it is time consuming in nature, calling for an extended period of time in the field. Traditionally this can be at least one year which this researcher realises is unrealistic for this time limited study. However, insights would still be possible even with a condensed time period (Mack et al. 2005). Secondly, it relies on the memory of the researcher, since not everything can be documented at the time of the observation. Finally, it requires a level of objectivity from a method which is fundamentally subjective. It was important for the researcher to learn to filter out personal views and bias as far as is possible. This was supported by regular discussion with the supervisory team (Appendix 5).

Data related to participant observation is most often in the form of handwritten field notes and are a record of what was observed, the interactions with participants, and what was experienced. Field notes involve both observation and analysis and can serve as a commentary for what is occurring in the research (van Maanen 1988).

In this current study the researcher made detailed handwritten notes immediately after the end of each session of participant observation. These handwritten notes were then typed and expanded in a Word document at the earliest available opportunity and stored on the case study database.

3.7.4. Focus Groups

Focus groups are used when searching for meaning, to unearth features which influence attitude, behaviour, and motivation (Krueger and Casey 2009). It is suggested that "focus groups work best for topics people could talk about to each other in their everyday lives – but don't" (MacNaghten and Myers 2004, p. 65).

Focus groups were chosen as a method since they are known to explicitly generate data via the process of group interaction (Pope and Mays 1995). They also provided the opportunity for individuals to build on the answers of others in the group and in doing so generate new ideas (Holloway and Wheeler 2010). The interaction with others, in agreement or disagreement allowed participants to be exposed to a broader range of opinions. Furthermore, the group dynamic allowed more time for the participants to reflect on their opinion (Krueger and Casey 2009). Qualitative research aims to highlight the emic or insider perspective of participants, and focus groups are well placed to do this since their semi-structured nature means that attention can be given to the participants rather than the researcher (Holloway and Wheeler 2002).

However, focus groups can be difficult to organise in terms of coordinating when people are available and need to be run by a skilled facilitator who is knowledgeable on the topic in question (Peterson-Sweeney 2005). The group nature means that there can be less time for individuals to be able to share their ideas. There is also the added risk of stronger personalities being dominant, thus the group may conform to the louder voice and minority opinions may be hidden (Krueger and Casey 2009). In this current study the focus groups were organised well ahead of schedule to provide sufficient notice for participants. All focus groups were conducted at the location of the CBGEP for participant convenience. They were digitally recorded following informed consent. Recordings were transcribed verbatim by the researcher using NVivo 10. Any identifiers were removed at transcription and individual participant numbers were assigned to their responses to maintain anonymity. Where possible the focus groups were conducted with two researchers present. One researcher facilitated the group and asked the questions (this author), the other recorded notes and observations (Eisenhardt 1989).

Since the researcher was aware that a level of skill was needed to facilitate focus groups, she attended training on the use of focus groups as a research method, and how to be a facilitator. Practice focus groups were also carried out with peers, and feedback sought on how to improve the running of the group. This helped the researcher become more aware of how to encourage the less vocal participants and when to re-focus the discussion.

The interview guide developed for the focus groups was informed by time spent in participant observation, the research question, the literature, and the study propositions (Appendix 12).

3.7.5. Documents

Documents per se may not necessarily answer the research question but are seen as being an important part of the evidence base (Gillham 2000). They are useful in verifying evidence from other sources and thus should be explicitly included as part of the data collection plan (Yin 2013). The advantage of documents lie in the fact that they can be repeatedly reviewed; cover an expansive period of time often stretching back to when a programme was founded, and contains specific details which may be needed for reference (Yin 2013). However, documents can sometimes be difficult to retrieve due to their age or location. Bias can also be a concern since documents will have been written for a specific audience and purpose at a particular point in time. The researcher must therefore understand the original intention of a document, since this will inform the interpretation of the information (Yin 2013). These weaknesses can be moderated by being mindful of that fact that the usefulness of documentation lies in its ability to corroborate other data collected. It is equally important when evidence is contradictory and highlights the need for deeper exploration, or in explaining any divergence in the data.

Documentation for this study was sourced in two ways. The first strategy of document retrieval involved using Internet searches for evidence related to the CBGEP. Secondly, the programme instructors were asked to provide documents relating to the programme, including, the structure, funding, implementation, goals, and philosophy. All documents were stored as part of the case study database in either electronic or paper format.

3.7.6. Semi-Structured Interviews with Programme Instructors

Interviews allow the researcher to focus directly on the case and specific individuals within it, in this case the CBGEP instructors. Interviews can be utilised to help corroborate findings. Although the researcher must be mindful to not ask leading questions, otherwise the corroboratory nature of the interview will not have been achieved (Yin 2013).

In this current study, following preliminary data analysis of the field notes, focus groups, and documentation it was understood that further data needed to be collected in order to understand some of the themes in more depth. A key informant whose perspective was missing up until this stage was the view of the CBGEP instructors. However, the researcher was mindful of the risk of bias from such a key informant's perspective (Karavdic 2006).

The interviews were digitally recorded following informed consent and followed a semi-structured interview guide (Appendix 13). Recordings were transcribed verbatim by the researcher using NVivo 10. Any identifiers were removed at transcription to maintain anonymity.

3.7.7. Collating the Case Study Evidence

An evidence database was utilised in order to store the considerable amount of data collected in an organised and accessible manner. The use of a case study database also helped in dealing with issues with regards validity and reliability as the data could easily be retrieved. This served to maintain a chain of evidence such that assertions presented during the analysis can be tracked back to their original evidence source. The case study data were stored in two different databases based on the format of the data. The content of each database is detailed below.

Database A was held in a locked filing cabinet. It contained the hard copies of any case study data. This included hand written field notes, paper documents collected from each case, and questionnaires.

Database B was held on a password protected computer. It utilised the computer-assisted qualitative data analysis software (CAQDAS) programme NVivo 10 to store evidence in an electronic form. This was stored on Bournemouth University server. Data were organised by case and data collection method. Appendix 14 provides a table of the case study data sources and storage. This illustrates the type and range of data collection as well as where it was stored.

3.8. Methods of Data Analyses

This section reports on the methods used to analyse the data. For each of the qualitative methods (participant observation, focus groups, interviews and documentation), data were analysed using thematic analysis (Braun and Clarke 2006). The process of thematic analysis is outlined in Section 3.9.1.

To assess the questionnaire data (lifestyle, social and socioeconomic data) descriptive statistics were performed. Since the data were non-parametric the median and interquartile range (IQR) was used to assess the central tendency and measure of spread. It was not appropriate to use the mean since this would be more affected by extreme values (Foster et al. 2014). Small numbers of participants precluded further statistical tests being carried out. This data were used to add further to the contextual understanding of the participants. Archival records were

used to understand the participant adherence rates of each case. Adherence data were reported on descriptively.

3.9. Qualitative Data Analysis

Qualitative data analysis is a systematic search for meaning (Hatch 2002). At the core of qualitative research is the interpretation of data (Flick 2009). It is concerned with:

> "organising and interrogating the data in ways that allow researchers to see patterns, identify themes, discover relationships, develop explanations, make interpretations, mount critiques, or generate theories. It often involves synthesis, evaluation, interpretation, categorization, hypothesizing, comparison, and pattern finding" (Hatch 2002, p. 148).

However, qualitative approaches to data analysis are diverse and complex (Holloway and Todres 2003). Thematic analysis was the method selected for this current study. Thematic analysis is a way of making sense of data that allows a researcher to process, analyse, and interpret qualitative data (Boyatzis 1998). Thematic analysis can further be defined as "a method for identifying, analysing and reporting patterns (themes) within data" (Braun and Clarke 2006, p. 79).

Thematic analysis was selected for this study because it is suggested as being a foundational method for qualitative analysis; one which helps develop key skills which can be utilised in conducting other forms of qualitative analysis (Bruan and Clarke 2006). Furthermore, thematic analysis is not "wedded to any pre-existing theoretical framework" (Braun and Clarke 2006, p. 81). Nor is it fixed to a particular epistemological position such as grounded theory, or interpretive phenomenological analysis (Braun and Clarke 2006). Rather it is independent of theory and epistemology and thus suitable to be applied in a critical realist study (Braun and Clarke 2006). However, it is still important for the researcher to make their epistemological assumptions clear (Holloway and Todres 2003). Coming from a critical realist perspective it is assumed that it is possible to understand participants' thoughts and feelings through their accounts. This is due to the fact that there is a straightforward relationship between what people express about their experiences and the nature of those experiences (Willig 2001). Thus, it is possible to theorise experience and meanings due to the simple relationship between meaning, experience and language (Braun and Clarke 2006). The following section details the process of thematic analysis.

3.9.1. Phases of Thematic Analysis

There are distinct phases involved in thematic data analysis (Table 3.2). These were followed in order to approach the analysis in a systematic manner.

Phase in Analytical Process (Braun and Clarke 2006)	Practical Application in NVivo 10	Strategic Objective	Iterative Process Throughout Analysis
1. Familiarising Yourself with the Data	Transcribing data, reading and re-reading the data, noting down initial ideas.	Immersion in data to become familiar with depth and breadth of content (transcribing) ↓ Initial open and hierarchal coding through NVivo 10 ↓ Consider how different codes may combine and be reordered to form overarching themes. Annotating through NVivo 10 ↓ Refinement of themes and collapsing codes. Draft summary statements and analytical memos through NVivo 10 ↓ Writing more detailed analysis of each individual theme. Use analytical memos in NVivo 10 to clearly define themes ↓ Final analysis and write up of the report	Assigning data to refined concepts to portray meaning ↕ Refining and distilling more abstract concepts ↕ Assigning data to themes/concepts to portray meaning ↕ Assigning meaning ↕ Generating themes and concepts
2. Generating Initial Codes	Coding interesting features of the data in a systematic fashion across the text, 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 Themes	Checking if the themes work in relation to the coded extracts and the entire text, generating a thematic map of the 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 theme.		
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.		

Table 3.2 Phases and Process involved in Thematic Analysis (Adapted from Braun and Clarke 2006)

A summary of the phases of thematic analysis are outlined below.

Phase one involved becoming familiar with the data. Since the researcher had collected the data and transcribed the focus groups and interviews personally, a level of familiarity was already present. However, to become immersed in the data to the extent of being familiar with the depth and breadth of the content the researcher read and re-read the text several times. This phase is said to provide the bedrock for the subsequent stages of analysis (Braun and Clarke 2006).

Phase two involved producing an initial set of codes from the data. A code is

> "the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way regarding the phenomenon" (Boyatzis 1998, p. 63).

This initial coding sought to express the data in the forms of concepts by segmenting data (Flick 2009). The process of coding can be data-driven i.e. inductive analytical approaches, or theory driven i.e. deductive approaches. An inductive approach means the themes will depend on the data (Braun and Clarke 2006). A theory driven approach means that the researcher codes around specific questions or theoretical propositions which can yield analytic priorities (Braun and Clarke 2006; Yin 2013). In this current study, the field notes, focus groups, documentation, and instructor interviews were initially coded inductively. The researcher worked through the text systematically, without trying to make the data fit into a pre-existing, *a priori* frame, and avoiding analytic preconceptions.

Codes can be taken from the interviewees' expressions (in vivo codes) or constructed codes depending on what the code is describing (Flick 2009). The process of coding was carried out line-by-line, seeking to break down and understand the text (Flick 2009). For illustrative purposes an example of phase two – phase five analysis and theme development can be seen in Appendix 15.

The computer-assisted qualitative data analysis software (CAQDAS) programme called NVivo 10 was used in the process of data analysis. In NVivo 10, data were coded by considering each line of text and then selecting and naming sections which described that portion of the text. These codes were listed and added to as coding progressed to generate non-hierarchical codes. Individual extracts of data were coded to several different codes if necessary. CAQDAS has the added advantage of reducing the distance between the researcher and the data since any text which had been coded was "only ever a mouse click or two away" (Kidd and Parshall 2000, p. 299) from the root document.

Computer-assisted qualitative data analysis software such as NVivo 10 has been shown to facilitate the qualitative research process by increasing the transparency of the data analysis process (Saunders et al. 2012). In this way there is a demonstration of rigour by the production of an audit trail with clear evidence of the researcher's workings (Sinkovics and Alfoldi 2012). It is important to state explicitly that the use of qualitative data analysis software does not imply that the software itself carries out any of the hermeneutic task; it merely supports, since qualitative researchers "want tools which support analysis, but leave the analyst firmly in charge" (Fielding and Lee 1998, p. 167).

Phase three of thematic analysis was where the codes began to be sorted into potential themes, collating the relevant coded extracts within each theme (Braun and Clarke 2006). A theme is "a pattern found in the information that at minimum describes and organises the possible observation and at maximum interprets aspects of the phenomenon" (Boyatzis 1998, p. 4). Themes are often broader than codes and are developed in the more interpretive phases of analysis (Braun and Clarke 2006). This involved analysing the codes and considering where various codes came together to form an overall theme.

The tree code function of NVivo10 allowed for a hierarchical structure to be developed so that codes could be grouped together into potential themes. This was important because this phase of thematic analysis was when the researcher began to examine:

> "the relationship between codes, between themes, and between different levels of themes e.g. main overarching themes and sub-themes" (Braun and Clarke 2006, p. 89).

Phase four was concerned with refining the themes. At this stage some themes were discarded since there was not enough data to support them, some were collapsed to form one theme, or others were broken down into separate themes (Braun and Clarke 2006). In this way, there began to be a clear distinction between themes and meaningful coherence within the themes. It was important at this stage to re-read the entire text under analysis to ensure that each theme accurately reflected the meanings in the whole data. The tree node structure in NVivo 10 served in effect as a thematic map which is suggested in phase four (see Table 3.2).

Phase five involved defining and naming themes ensuring a clear definition of the meaning of each theme. It was here that the detailed written analysis was carried out for each theme. It was not enough to paraphrase the data extracts in each theme, rather the importance was in detailing what was of interest about the theme and how it applied to the research question.

The process of refining and reviewing themes in phases three, four and five took place continually in an iterative manner. It required critical thinking to ensure that the themes were appropriate given the data they contained, and meaningful in terms of the whole text.

Finally, **phase six** sought to tell "the complicated story of your data in a way which convinces the reader of the merit and validity of your analysis" (Braun and Clarke 2006, p. 93). By this stage the researcher was more aware of the nuanced aspects of the data. These depths of understanding were essential in the final analysis and write up of the findings. The reporting of themes in the findings chapter used descriptors in a rhetorical manner to highlight the presence of the theme in the data (Braun and Clarke 2006). This is similar to other such studies who describe frequency in terms of 'some participants' (Fox et al. 2007), 'most participants' (Chiang et al. 2008) or 'all participants' (Stathi et al. 2010).

The research student's academic supervisors (CC, FT) independently cross checked sections of qualitative data analysis by comparing the codes and themes to the transcripts and text. This led to valuable discussions which generated new insights and the refinement of themes. As Barbour (2001) notes, this is one of the greatest assets of multiple coding and cross checking as it serves to refine interpretations.

As a point of note in Case 1, for the purposes of analysis, field notes and focus group data for the Exercise to Music and Circuit Training Classes were analysed separately. However, due to a similarity of themes the findings are reported together to avoid repetition, with nuanced differences between the groups being stated explicitly.

3.9.2. Use of the Humanisation Framework

During the preliminary data analysis of the field notes, focus groups, documentation, and instructor interview, elements of the humanising dimensions of the

humanisation framework (Todres et al. 2009) were noted in the data. This called for the data to be studied in greater depth using a humanising approach.

Humanisation is concerned with upholding "a particular view or value of what it means to be human, and furthermore to find ways to act on this concern" (Galvin and Todres 2013, p. 10). This framework was initially developed in the context of care, to assist in accounting for the more human aspects of illness and healing. It is rooted in the existential question of what it means to be human. Philosophically, it has been informed by the work of Husserl's concept of the lifeworld, Heidegger's reflections on freedom, and Merleau-Ponty's notion of body subject, and body object (Galvin and Todres 2013). These influences led to the development of eight dimensions (Table 3.3). The dimensions, expressed on a continuum convey what can make people feel more or less human in various situations. It must be stipulated that the human and dehumanising terms are not dualistic in nature; rather they exist as possible positions along a spectrum. When a humanising aspect is not apparent, or obscured then the dimension shifts more to the dehumanising end of the spectrum (Galvin and Todres 2013).

Humanising Dimensions	**Dehumanising Dimensions**
Agency	Passivity
Insiderness	Objectification
Embodiment	Reductionist body
Personal journey	Loss of personal journey
Sense making	Loss of meaning
Sense of place	Dislocation
Togetherness	Isolation
Uniqueness	Homogenisation

Table 3.3 Conceptual Framework of the Dimensions of Humanisation (Todres et al. 2009)

The humanisation framework was used in this current study as a way to understand the deeper meaning of the humanising perspective of PA adherence. In this depth phase of analysis, the data generated from each of the qualitative methods was coded in a deductive, *a priori* manner against each of the eight humanising dimensions of the framework: agency, insiderness, embodiment, personal journey, sense making, sense of place, togetherness, and uniqueness. This allowed the qualitative data to be examined with regards humanising elements of participant adherence to CBGEP.

3.9.3. Triangulation

Triangulation is required in case study research because this type of research is concerned with complex relationships between contextual and temporal dimensions (Willig 2001). As such, the complexities of the phenomenon are better understood if more than one research method is employed.

Four types of triangulation have been identified: data, investigator, theory, and methodological triangulation (Patton 1999). Triangulation in the context of this study is referring to methodological triangulation, whereby multiple, independent methods were used to collect data (Polgar and Thomas 2008). This included the use of participant observation, focus groups, documentation, and instructor interviews (Figure 3.5).

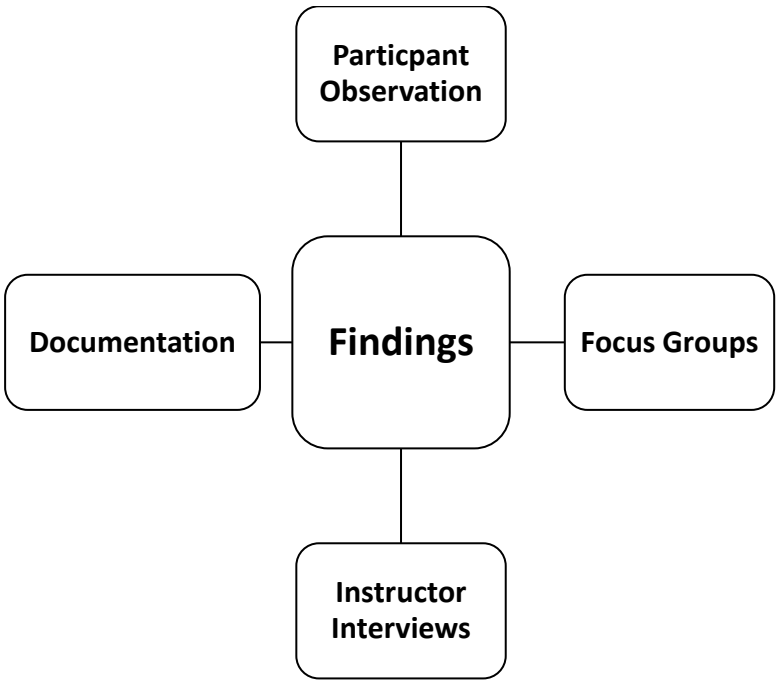


Figure 3.5 Convergence of Multiple Sources of Evidence

3.10. Summary

This chapter has presented a description of the philosophical and theoretical approach, the strategy of inquiry, research design, data collection and analysis methods. The rationale for the use of a case study approach has been justified along with ethical considerations. Sampling of the selected cases and recruitment of study participants was discussed in relation to the overall research question. The following chapter will go on to detail the findings from the three cases under study.

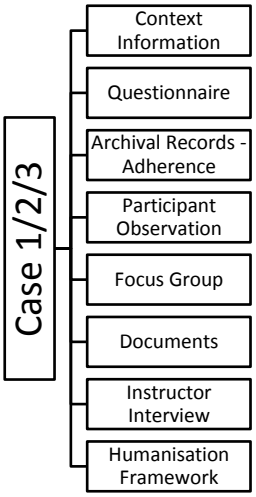
4. Findings

Introduction

This chapter will report on the main themes and findings obtained for each of the three cases. The cases were selected with the view of studying the phenomenon of older people's adherence to community-based group exercise programmes (CBGEP).

The findings for each of the three cases will be reported separately. Each case begins with information relevant to the context of the case including programme history, content and contextual photographs of the exercise environment. This is followed by a summary of the questionnaire data used to understand participant features in the form of descriptive statistics. Archival records are used to report on programme and individual participant adherence rates. The subsequent sections of each case present the findings based on four qualitative methods of data collection: participant observation, focus groups, documents, and interviews. Each case concludes with the findings of a depth phase of analysis. Here the sociological theory of humanisation (Todres et al. 2009) in used in an *a priori* manner to examine the qualitative data for the humanising elements of participant adherence to CBGEP.

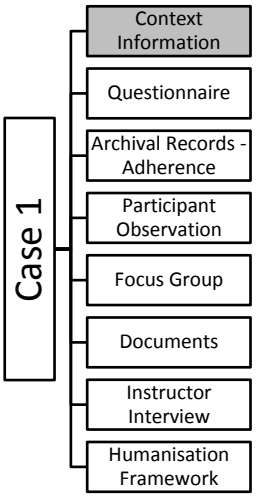
In an effort to add clarity to the structure of this chapter the following diagram is presented for each section. This will assist the reader in tracking which aspect of the case is being presented.



4.1. Research Findings Case 1

This section reports on the findings from Case 1. Case 1 is a privately run, non-profit making CBGEP for older people, and individuals with chronic health conditions.

4.1.1. Context: Case 1



History and Community-based Group Exercise Programme Description

A summary of the programme history and description of the content of the exercise programme is presented here to set the context of the findings. This summary was generated from time spent in participant observation, programme documents, and the instructor interview.

The CBGEP is held in a large settlement in the South West of England with a population of approximately 7,000 people (ONS 2013). A range of classes are currently offered including: seated exercise for less active older people, cardiac and pulmonary rehabilitation exercise, circuit training sessions, and exercise to music .

The exercise programmes are group based and involve aerobic, strengthening, balance, and flexibility exercises aimed at improving older peoples overall functional ability, health and wellbeing. This current research project recruited participants from two of the programmes exercise groups (Exercise to Music and the Circuit Training Class) based in the village hall where the programme first started. The Exercise to Music Class began in 2000 and the Circuit Training Class in 2003.

The Exercise to Music programme was 60-75 minutes in duration and runs weekly on a Monday morning in a village hall (see Figure 4.1and Figure 4.2 for photographs to add visual understanding to the CBGEP context). On arrival participants began by walking around the hall. This served as an initial warm up as well as providing time for social interaction. This was followed by a 30-minute aerobic session (including a more focused warm up, peak, and cool down). The second half of the exercise programme consisted of upper or lower limb resisted exercises, abdominal exercises, pelvic floor exercises, balance, coordination exercises, and stretches. Between seven to ten participants attended the programme during the period of participant observation data collection.

The Circuit Training Class programme was 60-75 minutes and began with a gentle warm up of walking around the hall followed by an aerobic session of approximately 25 minutes. Circuits then followed when participants would spend 90 seconds exercising at each of ten stations. The stations comprised of five cardiovascular (static bike, rowing machine, trampette, forward and side step ups) alternated with five active recovery stations (upper limb muscular strength and endurance exercises using small hand weights). The cool down session involved walking around the hall followed by balance, coordination, and stretching exercises. The pace and intensity of this class was higher than the Exercise to Music group. The number of participants attending this programme during the period of data collection was five to nine.

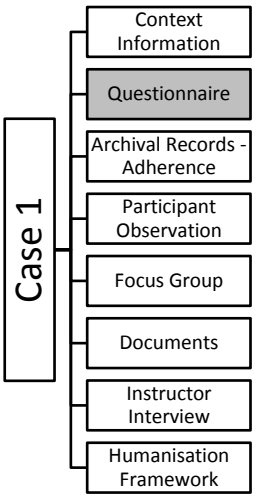
Figure 4.1 Photograph of the Inside of the Village Hall Location, Case 1

Figure 4.2 Photograph of the Outside of the Village Hall Location, Case 1

Cost of Attendance

Participants have the option of paying for a term of classes (since classes fit with the school holidays) or on a pay as you go basis. The termly payment is three instalments (September, January and after Easter) of £48.00, equating to approximately £3.50 per week. The pay as you go option is £4.00 per week.

4.1.2. Questionnaire: Participant Features Case 1



A total of 14 participants who attended either the Exercise to Music or Circuit Training Classes consented to complete questionnaires (11 female, 3 males). In each case, central tendency is presented as the Median and Interquartile range (IQR) as a measure of spread. This was selected for consistency since much of the data were not normally distributed. The median is also not as susceptible to being affected by extreme values (Foster et al. 2014).

Demographic Features

Participants in the Exercise to Music group were older with a median age of 77 years (IQR 9 years) compared to 68 years (IQR 5 years) in the Circuit Training Class. The main demographic findings are displayed in Table 4.1.

Variables	**Case 1: Exercise to Music (n=9)**	**Case 1: Circuit Training Class (n=5)**
Age, Years, Median (IQR)	77.0 (9.0)	68.0 (5.0)
Gender, n (%) Male Female	 0 9 (100)	 3 (60) 2 (40)
BMI*, n (%) Normal Overweight Obese	 7 (77.8) 2 (22.2) 0	 3 (60.0) 1 (20.0) 1 (20.0)
Current Relationship Status, n (%) Married Divorced Widowed	 5 (55.5) 1 (11.1) 3 (33.3)	 5 (100) 0 0

*BMI Normal: 18.5-24.9kg/m^2, Overweight: 25-29.9kg/m^2, Obese: ≥30kg/m^2 (WHO 2015)

Table 4.1 Demographic Features of Case 1 Study Participants

Lifestyle Features

The lifestyle features of smoking, alcohol consumption, physical activity and diet were assessed using questionnaires. The lifestyle features of Case 1 study participants are displayed in Table 4.2. Participants in the Circuit Training Class had slightly higher physical activity scores and Mediterranean diet adherence. This indicates that they were more active and had a healthier diet than those in the Exercise to Music Class.

Variables	**Case 1: Exercise to Music (n=9)**	**Case 1: Circuit Training Class (n=5)**
Current Smoker, n (%)	1 (11.1)	0
Previously Smoked, n (%)	3 (33.0)	3 (60.0)
Number of Alcoholic Drinks During an Average Week, n (%) 0 1 – 3 drinks 4 – 7 drinks 8 +	 5 (55.5) 2 (22.2) 0 2 (22.2)	 1 (20.0) 2 (40.0) 2 (40.0) 0
Lifetime Physical Activity, n (%) Not Active Somewhat Active Active	 0 1 (11.1) 8 (88.9)	 0 2 (40.0) 3 (60.0)
Phone-FITT Physical Activity Score[a], Median (IQR)	44.5 (19.0)	50.7 (14.0)
Diet, MEDAS[b], Median (IQR)	7.0 (3.0)	8.0 (6.0)

[a] An older person specific questionnaire which considers frequency and duration of both household and recreation physical activities. Higher scores indicate higher activity levels (Gill et al. 2008).
[b] The Mediterranean Diet Adherence Screener (MEDAS) is scored out of 14. It was developed as a screening tool to assess adherence to a Mediterranean-type diet. The higher the score the better adherence (Schroder et al. 2011).

Table 4.2 Lifestyle Features of Case 1 Study Participants

Social and Socio-Economic Participant Features

The social features of the participants were measured using two different questionnaires. The Lubben Social Network Scale (LSNS-6) was used to assess the type, size, closeness and frequency of contacts in a participant's current social network. It can be used to categorise individuals based on their social connectedness and highlight those at risk of social isolation (Lubben et al. 2006). Using this measure, both exercise groups contained individuals who could be at risk of social isolation (scores of ≤ 11). However, perceived support was also considered alongside participant network size. This was assessed using the Multiple Scale of Perceived Social Support (MSPSS). This is a measure of subjectively assessed social support with regards to family, friends, and significant others (Zimet et al. 1988). The median score for perceived social support (including those who could be

considered at risk of social isolation) using the MSPSS indicated that all study participants had high perceived support (score ≥ 5.1).

To understand participants' socio-economic features data were collected on their neighbourhood and individual socio-economic status (SES). Participants' residential postcodes were used to assess neighbourhood SES based on Index of Multiple Deprivation (IMD). See Section 3.7.1 for further explanation of the IMD. Individual SES data were collection using participants' highest education level and current employment status (Table 4.3).

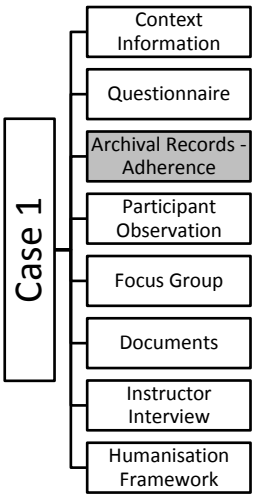
The median score for each exercise group indicated that participants in the Exercise to Music class had a much higher median neighbourhood SES (29394) indicating a higher SES compared with the Circuit Training Class (19426). This is despite the fact that those in the Circuit Training Class had completed higher levels of education. However, the small number of participants limits meaningful conclusions being drawn.

Variables	**Case 1: Exercise to Music (n=9)**	**Case 1: Circuit Training Class (n=5)**
Social Network LSNS-6, Median (IQR)	14.0 (9.0)	13.0 (10.0)
Socially Isolated Based on LSNS-6[a], n	2	2
Perceived Social Support, MSPSS[b], Median (IQR)	5.6 (1.0)	5.9 (1.0)
Neighbourhood Socio-Economic Status (deprivation rank), Median (IQR)	29394 (8540)	19426 (13189)
Highest Education Level, n (%)		
Some Secondary School	2 (22.2)	0
Completed Secondary School	6 (66.7)	0
Trade / Technical / Vocational	1 (11.1)	5 (100)
University	0	0
Current Employment, n (%)		
Full-time	0	0
Part-time	0	1 (20)
Retired	9 (100)	4 (80)

[a] Lubben Social Network Scale (LSNS-6) scores range from 0-30. Score ≤11 indicates risk of social isolation.
[b]Multiple Scale of Perceived Social Support (MSPSS) is a 12-item scale measuring perceived availability of support from family, friends and significant other. Low support: 1-2.9, moderate support: 3-5, high support: 5.1-7.

Table 4.3 Socio-Economic Features of Case 1 Study Participants

4.1.3. Archival Records: Adherence Rate Case 1



The archival records of attendance provided by the instructor were used to understand adherence for Case 1. Adherence data is reported in two ways. Firstly, the programme adherence rate is used to reflect the retention rate of the programme. This was calculated as the percentage of participants who had adhered to the programme for ≥ 1 year in the year prior to data collection. Secondly, the percentage of sessions attended by each participant who consented to be in the study was utilised as a measure of individual adherence. This was calculated as the proportion of attended sessions relative to offered sessions, and expressed as adherence percentage.

Programme Adherence Rate Case 1

Case 1 had a programme adherence rate of 69.4%.

Individual Adherence Rate Case 1

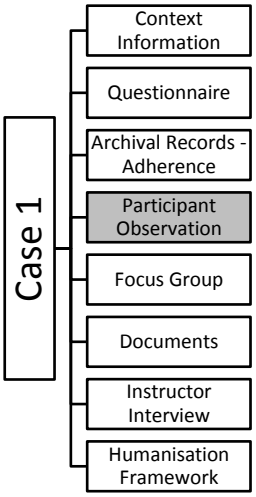
The median was selected as the most appropriate measure of central tendency since it is not affected by extreme values in the same way as the mean (Foster et al. 2014). The individual participant adherence rates are displayed in Table 4.4. Median adherence rates for the Exercise to Music and Circuit Training Class were 78% (IQR 15.5) and 70% (IQR 13.5) respectively. This was based on their individual attendance records for their entire attendance period.

	Participant Identification Number	Participant Gender and Age (Years)	Length of Attendance, Months[a]	Adherence Rate, %*[b]
Exercise to Music (n=9)	Case1-P1	Female, 69	13	71
	Case1-P2	Female, 78	22	85
	Case1-P3	Female, 81	169	87
	Case1-P4	Female, 77	121	83
	Case1-P5	Female, 66	109	78
	Case1-P6	Female, 77	161	46
	Case1-P7	Female, 69	39	74
	Case1-P8	Female, 78	39	80
	Case1-P9	Female, 78	44	66
	Median (IQR)		**44 (110.5)**	**78 (15.5)**
Circuit Training (n=5)	Case1-P10	Male, 68	38	62
	Case1-P11	Male, 68	64	70
	Case1-P12	Female, 63	64	68
	Case1-P13	Female, 68	49	82
	Case1-P14	Male, 72	45	75
	Median (IQR)		**49 (22.5)**	**70 (13.5)**

* Proportion of attended sessions relative to offered sessions. [a] As recorded from their first attendance to 31 December 2014.

Table 4.4 Participant Age, Length of Attendance, and Adherence Rate for the Exercise to Music Class and Circuit Training Class

4.1.4. Participant Observation Findings Case 1



The researcher spent 24.5 hours as a participant observer in the Exercise to Music and Circuit Training Class generating 22 pages of A5 handwritten field notes. Notes were made on the conversations and interactions the researcher had with the exercise group participants as well as general observations about the CBGEP. These field notes were typed into a Word document and expanded upon at the earliest available opportunity, providing 17 pages of double line spaced text. The Word document was imported into QSR International's NVivo 10 qualitative data analysis software and underwent thematic analysis (see Section 3.9.1).

Thematic analysis of the field notes from Case 1 led to the development of four themes and one sub-theme related to participant adherence to the CBGEP (Figure 4.3). These themes are described below.

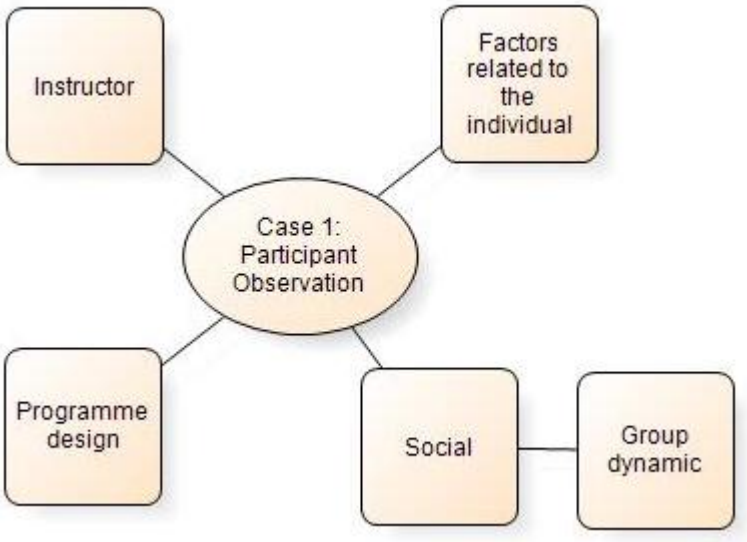


Figure 4.3 Case 1 Participant Observation Themes Related to Adherence

Factors Related to the Individual

Factors related to the individual refer to the personal reasons that participants shared as being important in helping them adhere. For example, several participants reported the desire to stay fit as a motivator. This was particularly in the context of enabling them to continue caring for infirm family members. The extra energy experienced by some after the CBGEP was also noted as an incentive to adhere.

Instructor

This theme related to the way that the instructor was observed to contribute to adherence. This was noted in a variety of ways. For example, the instructor was seen to demonstrate a care and concern towards individual participants. On one occasion she was aware that one of the participants had not attended for several weeks and telephoned her to make sure she was well. It transpired that the individual had had some health problems and was struggling to have confidence to get out of the house. However, the phone call from the instructor encouraged her to return to the CBGEP.

The instructor was observed as being aware of individual participant health conditions and offered discrete advice about working within their personal physical boundaries. When the aerobic routine changed the instructor would carefully talk participants through the changes before starting the new exercise. This appeared to help participants learn the new exercises more quickly preventing them from feeling excluded from the group exercise routine.

The instructor was observed to prioritise participant safety. This was noted in regular reminders for participants to work within their pain free limits and in exercise adaptions for the varied levels of ability.

> *"The instructor reminded them all about pacing at the start of the exercises and they should be able to say five words at the height of the "huffy puffy" bit."* (Field notes, Case 1)

The instructor was also observed to explicitly seek feedback from participants to ensure they were managing and benefitting from any changes in the exercise regime without undue strain.

Programme Design

Programme design refers to the observations made about the way that the Exercise to Music and Circuit Training Classes were designed, structured and delivered.

The classes were observed to be designed and delivered in a flexible manner. For example, the content of both the Exercise to Music and Circuit Training Class were adapted to suit individual participant abilities. This seemed to enable participants to set their own exercise level and work within their personal limits.

A level of routine was observed within the structure of the programme. Participants appeared to be familiar with this routine and required minimal prompts to move through the various stages. For example, on arrival participants independently began the warm up of walking around the hall and towards the end of the programme they all helped pack the equipment away.

Participants were observed to be comfortable and confident within the group in that they did not appear to be self-conscious or concerned if they made mistakes with the exercises. In addition, an informal dress code was observed whereby participants were able to dress in a casual, non-sporty way. They did not need any

special exercise clothing. However, some participants did choose to wear tracksuits and trainers.

In the Circuit Training Class individuals often paired up for the circuit component of the session. This was observed to have different meanings for the men and the women. Whilst it was seen to be viewed by both men and women as an opportunity to be social, for some of the men it was also observed to help them push themselves in a competitive way. A difference in programme intensity was also observed between the Exercise to Music and Circuit Training Class. The latter was structured via the circuits to enable participants to work at a higher intensity.

The music selected for both the Exercise to Music and Circuit Training Class was observed to be an enjoyable feature with participants singing along with the words on occasion.

Social

The term social is used to refer to the sociable, friendly, group nature observed in the programme. Group dynamic is noted as a sub-theme (see below).

Both the Exercise to Music and Circuit Training Class were observed to be social groups. On arrival participants began chatting. Although participants were observed to focus on their exercise they took every opportunity to socialise at the water break and the end of the class. In the Circuit Training Class participants were observed to have banter with one another. This banter was commented upon informally by some participants as a key reason as to why they enjoyed attending.

A level of social connection between participants was observed within the group. For example, if a participant was absent, other members of the CBGEP were often aware of the reason. However, it was not clear whether these were existing geographical, social connections, or whether the CBGEP generated those connections.

Group Dynamic

The group dynamic was noted as a sub-theme to the social aspects of Case 1. Group dynamic describes the way participants interacted and developed as a group. The group dynamic could also have been situated under programme design since the programme was structured to be a group programme rather than an individual programme. However, the decision was made to include it under social to reflect the

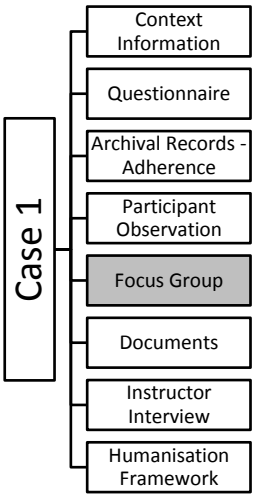
complex interaction between the participants and the development of the dynamics of the groups.

Participants were observed to interact with the level of care and concern for one another. For example, participants made sure everyone had a drink at the water break. They were also observed to be inclusive in conversations.

> *"There seemed to be a kindness in the group. For example one lady stays seated for all the exercises due to some long term health problems. This means she can't join in with the warm up of walking around the hall at the beginning of the class. But I saw two of the women being intentional in going over and saying hello. They said that they'd missed her the week before and was she ok. In this way people looked included."* (Field notes, Case 1)

This concern for one another was seen to extend beyond the boundaries of the CBGEP. For example, on one occasion a participant was unable to attend for several weeks due to a fall and subsequent wrist fracture. When the instructor informed the group of this situation a participant requested her address so she could visit.

4.1.5. Focus Group Findings Case 1



Two focus groups were conducted in Case 1. One was carried out with the Exercise to Music (n=6) and one with the Circuit Training Class (n=5). They were 47 and 64 minutes in length respectively. The audio files were transcribed which generated a total of 28 and 31 pages of double line spaced text in Word. The Word documents were imported into QSR International's NVivo 10 qualitative data analysis software where they underwent thematic analysis (see Section 3.9.1).

Thematic analysis led to the development of five themes and three sub-themes related to participant adherence to the CBGEP (Figure 4.4). These are described below.

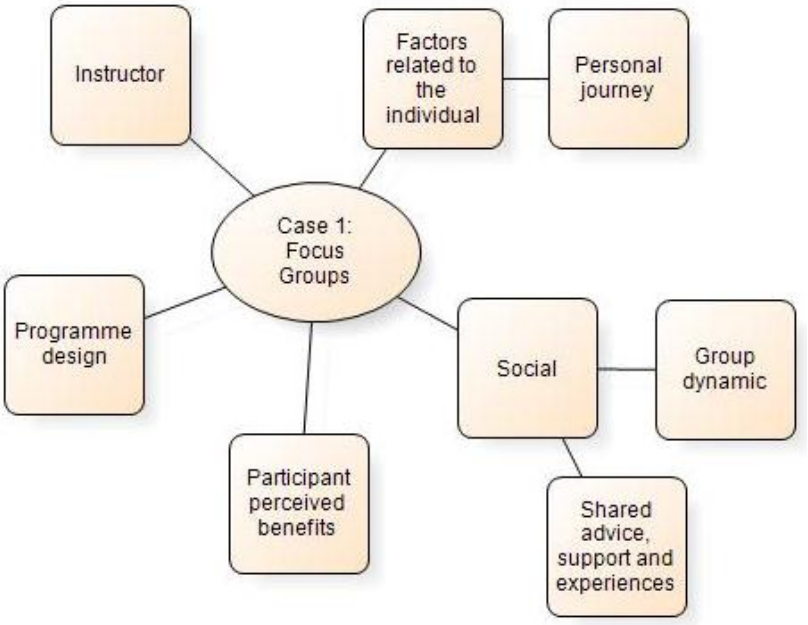


Figure 4.4 Case 1 Focus Group Themes Related to Adherence

Factors Related to the Individual

This theme refers to aspects of adherence that appeared to be related to the individual with the sub-theme of personal journey. A level of personal motivation, commitment, discipline, and routine was apparent in enabling participants to adhere which in part stemmed from the desire to keep healthy for their old age:

> *"And my husband said one day, well why are you doing all this exercise? And I said to keep me healthy into my old age which hopefully I've done. You know. When you can't do things as well now as you did 2 or 3 years ago but you're still making the effort."* (Female, 81 years, Exercise to Music)

For others this motivation came from the self-knowledge that it was something their body needed. There was a personal perception that the class was doing them good physically and mentally.

> *"I know my body needs it as well. Because it's always been worked hard. I know that if I don't do some physical exercise I can feel that, not just my muscles but my brain seems to atrophy."* (Male, 68 years, Circuit Training Class)

Personal Journey

Personal journey refers to the role that physical activity has played throughout the lives of participants. It was noted as a sub-theme of factors related to the individual.

At an early age, having schools that encouraged activity and provided opportunities to engage in sports seemed to help activity become a part of participants' lives. Some participants reported that they had always exercised, whether that was exercise classes, dancing, cycling, yoga, or swimming. For others their work and family lives had been too busy. Thus, exercise wasn't something that featured in their lives until they retired.

> *"I've really only been exercising, more or less since I retired. I just didn't have the time or the energy to do it before that. It was all consuming, my job. So really I've made time to exercise since retiring."* (Female, 77 years, Exercise to Music)

For those who had exercised throughout their lives they noted that the mode of exercise had changed as they aged. For example, they could no longer ride a bike since their balance had deteriorated and managing their own garden was now too physically demanding.

Some exercises were worked into the daily lives of participants such as neck or back exercises at home, or leg exercises whilst waiting for the bus. However, doing more formalised exercises at home did seem harder for individuals to achieve. The regular timing and routine of the Exercise to Music and Circuit Training Class helped bring a discipline since it became part of the cycle of their week.

> *"Yes, because if you don't do it on a certain day, you won't do it."* (Female, 78 years, Exercise to Music)

Participants recognised the challenges of getting older, the increased time needed to build fitness or re-gain fitness after a break. However, those in the Circuit Training Class also understood that they were still relatively fit and wanted to make the most of their time:

> *"But yeah, I've had a good life really. But you don't know how long, just enjoy. It's a mind thing I think. Psychological thing. Tell yourself, you know, get up, there's another new day, get on. I want to get out of bed."* (Male, 74 years, Circuit Training Class)

Instructor

This theme refers to the role in which the instructor played in supporting participant adherence. Within the Circuit Training Class, the instructor was described as *"the leading light"* (Female, 68 years, Circuit Training Class). The instructor had built a level of rapport with participants such that it provided a feeling of being at home within the group.

> *"If you haven't got a rapport with your instructor you just don't come back. We all feel quite at home here."* (Female, 68 years, Circuit Training Class)

The fact that the instructor was trained to a high standard meant that participants could trust her; she would not push them beyond their limits and ensured they did a full warm up and cool down to guard against injury. Participants were aware of the instructor's level of care and responsibility for them, which in turn acted as a motivator for them to keep coming:

> *"I think I'd feel I'd let her down as well if I didn't come. Because she puts all her efforts into keeping us fit and healthy and I'd think no, she's doing her best."* (Female, 68 years, Circuit Training Class)

The instructor did not judge or criticise participants in relation to their exercise ability:

> *"And you can exercise your body as much or as little as your condition at the time wants it to be. Without criticism, without somebody saying 'come on, do better, harder, faster' whatever." (*Male, 68 years, Circuit Training Class)

The instructor also brought a sense of fun to the group in her relaxed manner. The informal way in which she led the CBGEP seemed to make it more enjoyable. Participants also appreciated the fact that she joined in with the exercises.

> *"*[Instructor's name] *is so pleasant and you never feel silly or that you've done the wrong thing. She always makes you feel good."* (Female, 66 years, Exercise to Music)

> *"We like the informality of it. Because if she makes a mistake we all laugh but we still follow whatever it is she's done wrong. You know she's not perfect."* (Female, 81 years, Exercise to Music)

Whilst it was understood that the instructor was not necessarily the predominant reason they adhered, it was recognised that her leadership did contribute.

Programme Design

Programme design describes the way the programme was designed, structured and delivered. It includes features of time, location, cost, and structure including adaptable exercise content.

Participants noted that the timing of the CBGEP on a Monday morning was helpful since it would *"get the week started off"* (Female, 81 years, Exercise to Music). The location was viewed as convenient since they could easily walk, take the bus, drive, or car share. The CBGEP was viewed as affordable and the regular reliability of the class was helpful.

> *"Well you always have to take a deep breath. It's not expensive really but it's a large lump to find at the beginning of the term. But I think it's very good value."* (Female, 77 years, Exercise to Music)

> *"There are the practical things, like it's convenient, it's affordable, it's accessible, it's reliable. It's all those things."* (Male, 68 years, Circuit Training Class)

Participants viewed the use of music both as a motivator and as a means of entertainment:

> *"Yeah I think it's a good motivator…I think music does help. I find it. You know I'll be saying, where's the Christmas CD? Oh yeah, come on, let's have a bit of entertainment along with it. You know, it all helps."* (Male, 74 years, Circuit Training Class)

The structure of the CBGEP appeared to be helpful in participants continued engagement. The professional way that the CBGEP was run with exercises to a high standard of safety was important: *"she's not going to be asking us to do things that aren't good for us"* (Male, 68 years, Circuit Training Class). Exercises were readily adapted to the individual depending upon their ability. Thus, the individual nature of the exercises was appreciated so that participants could work at their own level without pressure or judgement as well as the fact that it exercised the whole body:

"But if we couldn't do the exercises [instructor's name] *understands and we can do it easier you know, we haven't got to put so much effort in."* (Female, 78 years, Exercise to Music)

"I think the programme that she's devised for us it does seem to be very inclusive, you know it exercises all parts of your body. And like you say, not just strength and mobility but balance and issues like that as well. So I think it's a very effective programme." (Male, 68 years, Circuit Training Class)

Although some participants commented on being competitive in the past, there was a general preference for a non-competitive exercise environment. Participants also appreciated the fact that they could switch off because they did not have to think about the exercises and could just copy the instructor.

"I've never been competitive. But I like to work on my own level. I'm a bit of a loner. That's why I like it here because I can do my thing. Team sports, no I couldn't do that." (Female, 68 years, Circuit Training Class)

"I like to follow her because I don't have to think. I just go into overdrive…." (Female, 77 years, Exercise to Music)

Social

This theme called social describes the sociable, friendly, group aspects of the programme which participants noted to be important in relation to adherence to the exercise programme. This contains two sub-themes: shared advice, support and experiences and group dynamic.

Participants appeared to appreciate the sociability of the exercise programme. It was noted to be a *"lovely crowd"* and *"small friendly group."* (Females, 81 and 77 years respectively, Exercise to Music)

"But it's the social aspect is good really because it makes you communicate and you know forget your own, forget yourself." (Female, 77 years, Exercise to Music)

The social features of the programme appeared to be particularly important for those who lived alone.

"I mean I've had somebody staying with me for several weeks and you know to go back last Monday and the house was quiet you know, it's different

*when you've got somebody at home…but yes it definitely makes a difference if you're on your own." (*Female, 78 years, Exercise to Music)

Shared Advice, Support, and Experiences

Sharing advice appeared to be an overflow of the social nature of the group. This was evidenced in the form of health tips, beneficial exercises, and encouragement with doing exercises. Having shared experiences of similar health problems, medications, or comparable family challenges meant that participants felt they were *"in the same boat"* (Female, 78 years, Exercise to Music). The support aspect was marked in them finding a place to share frustrations or enquiring after one another's health.

"But you can come in on a Monday morning. And we do the walking around. And you can pair up with somebody and you can sort of let out some of your frustrations from the weekend." (Female, 78 years, Exercise to Music)

There were elements of altruism in how they supported each other:

"It makes you think of other people as well. I think because it's like [participant's name] *has not been coming because his wife is ill. You know we've all heard that his wife is ill so I feel that if he comes I'll have a chat with him and see how things are going to encourage…But if you think about somebody else it gives you a warm feeling I think."* (Male, 74 years, Circuit Training Class)

Group Dynamic

Group dynamic was noted as a sub-theme to the social aspects of Case 1. Group dynamic describes the way participants interacted and developed as a group and how this impacted on their adherence. As with the findings from participant observation, the group dynamic could also have been situated under programme design. However, it is situated under the theme social to capture the way that the social interactions of participants contributed to the group dynamic.

Participants commented on the positive, friendly nature of the group dynamic.

"Everybody comes with a positive attitude and okay as you say, different people put different amounts of effort into it but they all do put effort into it. They put in the effort that they're comfortable with and there aren't moaning

Minnie's at the back and there aren't people sort of muttering behind or people like that." (Male, 68 years, Circuit Training Class)

The group dynamic appeared to be linked to the highly social environment. Participants appreciated exercising as a group as opposed to their perceived impression of the more lone nature of individual gym programmes. The fact that they were not discouraged from socialising at various points in the classes added to the positive, entertaining group dynamic. However, there was an awareness of the need to also focus on the exercises.

"But we don't have any problems switching off from the social to the crux of the reason that we're here. You know we do chat amongst ourselves but once the music starts and [the instructor] *is up and you know..."* (Male, 68 years, Circuit Training Class)

"You can have a laugh at the same time as actually exercising your body." (Male, 68 years, Circuit Training Class)

There was a commitment to the group and to staying active. The new social connections they formed with one another meant that when the CBGEP has a break over the summer, they continued to meet up and go for walks together: *"It kept the group together, kept us exercised"* (Female, 68 years, Circuit Training Class).

Whilst this personal commitment appeared to be present intrinsically they noted it was harder to motivate themselves if they tried to exercise at home. Thus, coming together as a group meant they felt they achieved more in the way of exercise than they would if they had tried to exercise at home.

"Lot of distractions at home as well. A lot of things other things that you can be getting on with and sometimes they're easier to do…" (Male, 68 years, Circuit Training Class)

"Yeah you do more by making yourself go to something rather than staying at home or I'll do it in a minute." (Female, 66 years, Exercise to Music)

For the male participants, having the support of other men to exercise with was important. They appreciated the fact that they can *"talk about rugby in-between"* (Male, 74 years, Circuit Training Class) which added to a sense of camaraderie. Some male participants found it helpful to attend the CBGEP with their wives; others

were grateful to attend alone since they could exercise more freely and not be embarrassed if they made a mistake.

Participant Perceived Benefits

This theme refers to the perceived physical, emotional, and mental health benefits which participants reported as being important outcomes in contributing to adherence. Participants reported the exercises helped them maintain their health, manage their chronic health conditions (such as neck or back problems), and would prevent future health problems (such as incontinence).

> *"…the other one I do daily…the pelvic floor because I noticed signs of problems and they've gone."* (Female, 77 years, Exercise to Music)

> *"No it's because it does you good. And there was a report on the radio that those who do keep themselves busy with exercising everything else don't get Alzheimer's."* (Female, 81 years, Exercise to Music)

Social benefits were noted in that *"It* [the exercise programme] *gets you out of the house"* (Female, 78 years, Exercise to Music). Emotional, mental, and physiological benefits were also perceived alongside the physical.

> *"Oh I think it's well, physically I always feel better after exercise. It's like if you go for a walk, I find, you know, I might be worried about things, I've got plenty to worry about and you know I just feel different. It's the same if I go in the garden. I just feel different. It's psychological really."* (Female, 77 years, Exercise to Music)

> *"But I like this because it is inspiring and it makes you, the endorphins circulating in your body afterwards. I think that's what makes you keep coming as well."* (Female, 68 years, Circuit Training Class)

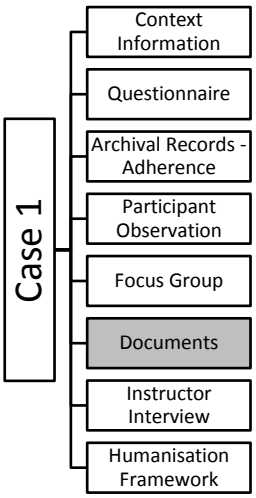
The physical gains of improved balance, cardiovascular fitness, strength, and coordination were discussed in the Circuit Training Class and seen as factors that helped in maintaining attendance. However, this took some time to realise:

> *"Just reflecting on what my thoughts were when I first came. And my first thoughts were this is for women. And this is very easy. Yeah seriously and I remember saying to* [refers to his wife], *I don't know whether it's exercising me enough. But after the 3rd of 4th time when I had built up a sort of series of exercising all my muscles I began to realise that I was feeling stiff. And*

that it was actually doing me good. And from that I've completely turned around. And I now really enjoy it and I realise that is actually doing me a lot of good." (Male, 68 years, Circuit Training Class)

Participants noted a sense of satisfaction and enjoyment from being involved in the exercise programmes. They had the view that *"…exercise should be enjoyable"* (Female, 63 years, Circuit Training Class).

4.1.6. Documentation Findings Case 1



Documentary analysis predominantly drew upon information located on the programme's website. The website served a dual purpose: to provide information on the CBGEP and to promote the training courses run by the instructor to train new exercise instructors. The website contained specific information which related to the background of the programme. This included the history of the programme, its mission and content, types of classes offered, who the programme is suitable for, participant comments, the range of locations and instructor background.

For the purposes of this analysis, text as it related to the exercise classes was copied and pasted into a Word document and imported into QSR International's NVivo 10 qualitative data analysis software where it underwent thematic analysis (Braun and Clark 2006).

Documentary analysis highlighted one overarching theme of participant perceived benefits from adherence to the CBGEP. This consisted of three sub-themes: social, physical and functional benefits (Figure 4.5).

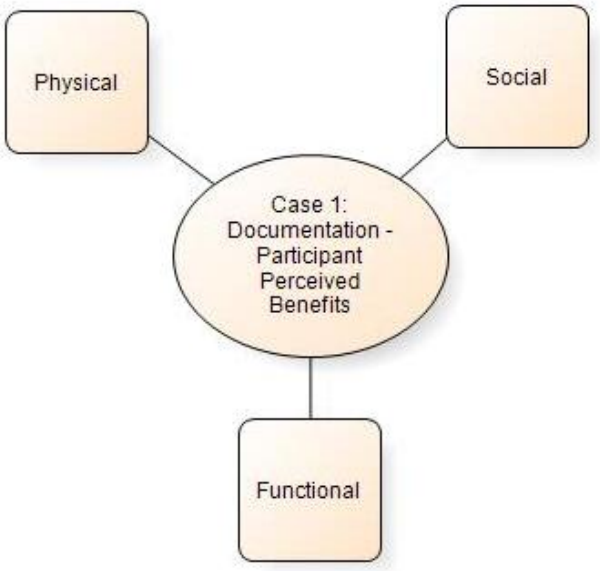


Figure 4.5 Case 1 Documentation Themes Related to Adherence

Participant Perceived Benefits

Social

Social benefits perceived by participants were noted as a theme of documentary analysis. The social nature of the CBGEP was expressed as a particular benefit for those who lived alone. The opportunities to socialise outside the classes (such as group day trips or pancake parties) appeared to serve as important community connections.

> *"The best thing about the group is getting out and meeting people, it's the highlight of my week. I have done so many things there that I would never have thought possible, going on outings, meeting new friends, knitting hats and gloves and things for poor children overseas and packing the little shoe boxes with presents for them – I don't have any close family of my own, so I'm pleased to be able to do it for them instead."* (Female, website reference, accessed 21 September 2015)

> *"I feel so isolated where I live and the classes are my weekly lifeline. I so look forward to coming and catching up with all the gossip and seeing my new friends- as well as doing the exercise of course!"* (Female, website reference, accessed 21 September 2015)

Physical

The physical benefits recognised by participants included improved cardiovascular fitness, weight loss as well as balance and strength improvments *"…my balance and leg strength have improved beyond recognition"* (Male, website reference, accessed 21 September 2015).

Individuals felt that they were able to work within their own physical limits and the range of classes offered for varying levels of ability allowed some individuals to return to exercise at their own pace after times of illness.

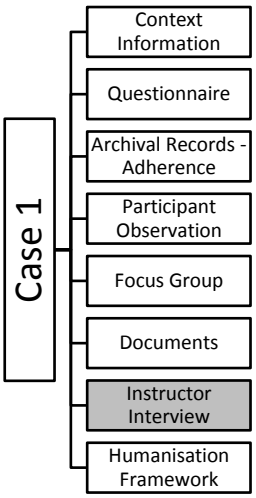
> *"A few years ago I had to have emergency open heart surgery…Throughout my time in hospital I practiced the exercises that I had been taught at the exercise classes…I know that doing the exercises that I had learned at the classes helped me to get walking again and on to a speedy recovery. After a few months of convalescence I joined the sitting down classes to begin with in order to regain my confidence and was delighted to be able to return to the active class where I was able to fully take part."* (Female, website reference, accessed 21 September 2015)

Functional

The physical health gains expressed by participants appeared to overflow into functional benefits. For example, improved mobility, increased ease of doing housework, being able to garden again, and increased confidence and independence to go out shopping and use the buses.

> *"Just before my 90th birthday I fell and broke my hip, but I made a good recovery and have returned to my exercise class. Going back to the classes in our local village hall has been a real help to regaining my confidence and mobility. I've learned how to get up off the floor safely if I do fall again and, even though I'm registered blind, I've been able to get out and about on the buses again."* (Female, website reference, accessed 21 September 2015)

4.1.7. Instructor Interview Findings Case 1



Following preliminary data analysis of the field notes, focus groups and documents it was understood that further data needed to be collected in order to explore some of the themes in more depth, from the perspective of the CBGEP instructor (see Section 3.7.6). A semi-structured interview was therefore carried out with the programme instructor.

The interview was audio recorded. It was 32 minutes in length which when transcribed generated 17 pages of double lined spaced text in Word. The Word document was imported into QSR International's NVivo 10 qualitative data analysis software where it underwent thematic analysis (Braun and Clark 2006). Background information on the instructor and the findings from the thematic analysis of the instructor interview are presented in this section.

This instructor from Case 1 was in her early 60s and had been leading exercise programmes for older people since January 2000. She is a registered nurse and holds Level 4 training qualifications. She was registered on the Register of Exercise Professionals (REPs), a public register which recognises the qualifications and expertise of exercise instructors in the UK (REPs 2015).

Findings from the interview analysis highlighted three themes which provided further depth of understanding from the perspective of the instructor. These are discussed below and included programme design, the social features of the programme and the role of the instructor (Figure 4.6).

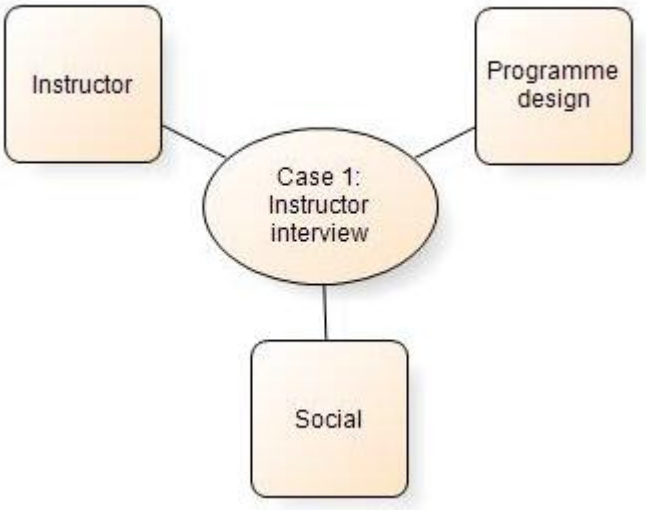


Figure 4.6 Case 1 Themes Related to Adherence from the Perspective of the Instructor

Instructor

This theme referred to the role of the instructor and the features of her personality, experience, and motivation which influenced participant adherence in this CBGEP.

The instructor was aware that participants had commented on her positive personality and cheerful disposition which served as a motivator. Participants had also remarked that they feel she is experienced and well qualified.

> *"…they've* [participants] *said they come along because they feel that I know what I'm doing. So they feel that I'm well qualified…."* (Instructor, Case 1)

The instructor's motivation to keep running the CBGEP stemmed from her own enjoyment of the groups as well as the perception that it provided a much needed service in the community. Personal motivation was also expressed in her desire to stay fit and active for her older age.

Programme Design

This theme related to the way the instructor structures and runs the CBGEP. The instructor reported several strategies which she has employed to aid adherence. The instructor sought to make the CBGEP an enjoyable experience. She used music which would appeal to the participants to add to the enjoyment. She was responsive to feedback from participants, for example, if they disliked the choice of

music for part of the routine she would change it. The volume of the music was kept to a reasonable level since participants had expressed a dislike for loud music.

If participants were absent for several weeks the instructor would telephone them to enquire about them and to encourage them to return. The programme was structured around the school term schedule since some participants helped look after grandchildren in the holidays.

The instructor designed the programme with the aim of targeting the whole body, i.e. not just focusing on falls or cardiovascular fitness. The instructor noted that a more holistic workout was preferred by participants. The instructor also managed the programme in such a way that participants could adjust the exercise intensity to suit their personal ability. Within the CBGEP there were participants who were unable to stand and exercise for the whole session through to those who could work at a higher cardiovascular intensity. Thus, the exercise intensity was self-selected by participants.

Social

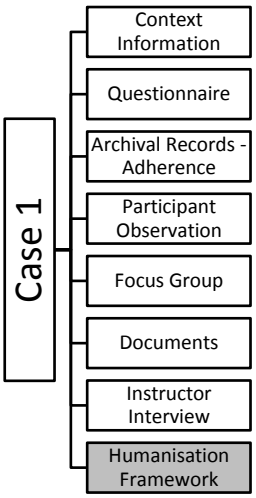
This theme describes the social element of the CBGEP. The instructor recognised the importance of participants being able to socialise and build their social networks. She therefore structured the programme such that there was time dedicated at the beginning, middle, and end of the class for participants to talk.

> *"They enjoy the social element. So they have time during the class at the beginning and the end and when they have a drink of water in the middle to catch up with each other and have a bit of social interaction."* (Instructor, Case 1)

Over the years of the programme the instructor has also organised various day trips, bring and share lunches, tea dances, Christmas parties, Carols by Candlelight or other social events with the intention of helping the group connect beyond the exercise class. The instructor was aware that as their social networks formed, participants naturally helped support one another beyond the boundaries of the exercise programme.

> *"And I know that the rest of the group they will look out for each other so if people haven't come for a while they will phone to make sure if they're alright, so there's a lot of looking after each other going on."* (Instructor, Case 1)

4.1.8. Application of the Humanisation Framework Case 1



This section reports on the results of a depth phase of analysis. During the preliminary data analysis of the field notes, focus groups, documentation, and instructor interview elements of the humanising dimensions of the humanisation framework (Todres et al. 2009) were noted in the data. The humanising dimensions of the framework were thus used to seek to address the deeper meaning of the humanising perspective of physical activity adherence. In this depth phase of analysis the data generated from each of the qualitative methods was coded in a deductive manner against each of the eight humanising dimensions of the framework (Table 4.5). The findings of this depth phase of analysis are reported under each of the eight humanising dimensions.

Humanising Dimensions
Agency
Insiderness
Embodiment
Personal journey
Sense making
Sense of place
Togetherness
Uniqueness

Table 4.5 Conceptual Framework of the Dimensions of Humanisation (Todres et al. 2009)

Agency

The dimension of agency is closely linked to the dignity and freedom we have as humans to make decisions and be responsible for the outcomes of those decisions

(Todres et al. 2009). When that control is removed there is a risk of passivity entering in and surrendering control.

Agency was highlighted in Case 1 in the way that some participants reported that their decision to join the CBGEP stemmed from personal motivations, such as *"to keep me healthy into my old age"* (Female, 81 years, Exercise to Music). Others recognised that exercises they had learnt in the group had helped them have greater control in other situations such as following a fall, recovery after surgery, or day-to-day management of long-term conditions such as neck or back pain.

The programme was designed in such a way that participants could choose their level of exertion with exercises. The instructor would advise on alternative variations of the exercise if they were not able to manage the higher intensity. This appeared to help participants have the freedom to work within their own physical boundaries, without criticism, judgement or pressure.

> *"You work at your own speed…you can exercise your body as much or as little as your condition at the time wants it to be. Without criticism, without somebody saying 'come on, do better, harder, faster' whatever."* (Male, 68 years, Circuit Training Class)

The CBGEP therefore supported participants' agency in several ways. The CBGEP empowered participants with the knowledge and skills required to self-manage some of the health challenges they faced of living within an ageing body. It also provided participants with not only an opportunity to exercise but an opportunity to exercise freely within their personal physical boundaries without judgement.

Embodiment

Embodiment relates to how we live within the fragile limits of being human; with the experiences of pain, excitement, hunger, vitality, fatigue, etc. When we are not overly concerned with these experiences, our embodiment supports us in moving out into the world, into experiencing the world in all its wonder of people, places and tasks (Todres et al. 2009).

Case 1 was noted to have evidence of the humanising dimension of embodiment in several ways. For example, the mission statement of Case 1's CBGEP is to: *"enrich people's lives by providing a range of community-based activities"* (website reference, accessed 21 September 2015). This implies that the intention was not

merely to focus on improving physical abilities of those who attend but also considered the meaningful ways people live in their bodies in relation to the world and others. Alongside the exercise session the instructor aimed to provide simple health checks, sought to promote healthy lifestyles, organised day trips, and various social activities, provided new learning opportunities, and visited participants who had been unwell or were in hospital. Thus, participants are supported in multiple ways to help them engage in the world as they are able.

The exercise sessions themselves were an opportunity to engage in the world as *"It gets you out of the house"* (Female, 78 years, Exercise to Music). The programme had a holistic approach by seeking to exercise the whole body with the aim of improving and maintaining health and strength. Thus, the classes were suitable for individuals with a variety of conditions (for example heart disease, diabetes, or orthopaedic conditions) but the conditions themselves did not define the participants. Participants were aware that because the exercises worked to strengthen their whole body it supported them in continuing to step into the world, almost literally in winter when they were aware of the increased risk of slipping and falling. Working the whole body also meant they also felt it kept their brains active:

> *"I know that if I don't do some physical exercise I can feel that my, not just my muscles but my brain seems to atrophy."* (Male, 68 years, Circuit Training Class)

The instructor appeared to recognise the fragile limits of participants' humanity. Corporal limitations were supported by seeking to strengthen the whole body. However, the importance of broader opportunities to engage in the world were understood and realised in the CBGEP through day trips or social activities. As such participants were not just adhering to a physical activity programme which focused on their physical body, but also to a community which extended the boundaries of their world.

Insiderness

Insiderness refers to the understanding that as humans we carry a view of living life from the inside out and that we alone are the authors of that inward sense (Todres et al. 2009). It is our internal sense of feeling, emotions, or mood which filter how our world is experienced.

In Case 1, insiderness was evidenced in the way that programme participants were not treated like objects. Rather their insider understanding was perceived by the instructor when she would remind them to stop if the exercises caused pain. Where necessary appropriate adaptations were made to allow those with different abilities to be included:

> *"…in one class I would have people working at different levels…I've got three people now who sit down to do the exercises. And one sort of stands up for a bit and sits down and stands up and sits down. And then I've got people who do it quite gently. And then I've got people at the other extreme who will skip about and are really energetic. So because they're all together I teach in a way that they can adapt the level to be suitable for them."*
> (Instructor Case 1)

Despite the fact that some participants suffered with the insider challenges of painful conditions they felt the exercise was doing them good and helped reduced the pain. Continuing to attend even after a fall helped them regain confidence, which meant they could maintain their independence.

The CBGEP were a helpful place to share some of the insider challenges participants faced, such as the frustration of having to take multiple medications and how this affected their lives. There was a recognition that just because their bodies were ageing it did not mean they felt old on the inside. This was respected and supported by the instructor as demonstrated in the way she would adapt exercises in recognition of those insider challenges.

Personal Journey

Being human involves being on a journey and any present moment needs to be understood in the context of before and next on a continuum (Todres et al. 2009). This moment in our lives is informed by the past and the hope of the future.

Personal journey was evidenced through the way that participants in this CBGEP appeared to have become members of something beyond an exercise group. The additional learning opportunities such as first aid qualifications or day trips meant that the CBGEP afforded them the opportunity to expand and grow on their personal journey.

In addition, the perceived physical health gains noted by participants were seen as being pivotal in maintaining their mobility, overcoming health challenges, and continuing on their journey.

> *"Nearly five years ago I was given a total hip replacement and I credit my swift recovery being considerably helped by membership of the classes both before and after my operation."* (Website reference, accessed 21 September 2015)

The programme became part of the participants' journey where they looked forward to the sessions each week and the social opportunity. Thus, there was a continuity whereby participants and instructor met regularly with the understanding that their personal journeys had a before and next.

Sense Making

As humans we care about meaning and have a desire to make sense of events and experiences. This involves bringing aspects of our lives together (Galvin and Todres 2013). Sense making looks for "*Gestalt* and patterns that connect" (Todres et al. 2009, p. 72).

Sense making was seen in Case 1 through the fact that attendance at the exercise programme was not experienced or compartmentalised and limited to a purely physical outcome. The broader, holistic needs were embraced and celebrated:

> *"The classes are so much fun - we have a good sing and enjoy the social time as well as the doing the exercise! We are having a Pancake Party next week!"* (Female, website reference, accessed 21 September 2015)

Although it must also be stipulated that the physical outcomes were important and helped individuals make sense of the health challenges they faced on their continued journey:

> *"Throughout my time in hospital I practiced the exercises that I had been taught at the exercise classes. I know it was doing that that helped me get through it all - I know that doing the exercises that I had learned at the classes helped me to get walking again and on to a speedy recovery…"* (Female, website reference, accessed 21 September 2015)

Some of the challenges of living within an ageing body were explicitly discussed. For example, the risk of continence problems or what to do if they have a fall.

Talking openly about these issues seemed to help participants make sense of them if they were to occur.

Participants were far from being a number or statistic; there was a genuine valuing of one another. The social connectedness they shared meant they were aware of the personal life challenges faced by some. This value for one another seemed to help them make sense of their own life stories and understood that everyone *"is in the same boat" (*Female, 78 years, Exercise to Music).

The CBGEP supported participants in making sense of their lives, both physically, and with the broader social experiences offered by the programme. As such, participants could continue to be story makers and story tellers in their lives.

Sense of Place

Sense of place refers to the way that as humans we come from a particular place which is more than just a physical environment; it is a place which generates the feeling of 'at-homeness', security, comfort, and belonging (Todres et al. 2009).

The sense of place, which manifested itself in this programme, did not seem to be generated from the physical environment. Although the fact that it was not a clinical, hospital environment was appreciated. Rather the sense of place came from the way it felt to be part of the CBGEP. Participants felt at home, they felt comfortable, they felt like they belonged, there was a familiarity and ease with one another.

> *"I'd say, initially, it comes down to they have to feel at home. If they don't feel at home, if they don't feel comfortable then it doesn't matter how good the exercise are, or how good the machines are or even how cheap it is. If they feel uncomfortable. It has to start here. And then everything else will follow after." (*Female, 63 years, Circuit Training Class)

Participants appreciated the small, informal, friendly nature of the exercise classes. They were not overly concerned if they made mistakes with the aerobic exercise routine. There was a freedom to be themselves and make jokes and have banter with one another and the instructor. Participants appeared to have found their sense of place within the CBGEP. There was a security, belonging and 'at-homeness'.

Togetherness

Togetherness relates to the understanding that as humans, an individual's uniqueness is only able to exist in relation to others, in belonging and community. It is togetherness which helps us experience empathy in which we can understand the challenges of the other (Todres et al. 2009).

Togetherness in Case 1 was noted in the social dynamic of the group. This appeared to generate a sense of community, of ongoing dialogue with the other participants; being together was important. The instructor intentionally allowed time for social interaction within the programme design *"so that people get those networks together"* (Instructor Case 1). For some, it may have been the togetherness of being part of the group that was the main reason for attending. This seemed to be particularly pertinent to those who lived alone or were at greater risk of being socially isolated:

> *"I feel so isolated where I live and the classes are my weekly lifeline. I so look forward to coming and catching up with all the gossip and seeing my new friends- as well as doing the exercise of course!"* (Female, website reference, accessed 21 September 2015)

For the male participants, being with other men and the friendly banter which proceeded appeared to be particularly important. This formed a sense of camaraderie.

The togetherness also seemed to lead towards participants caring for one another, to empathy. Participants would help one another by passing around drinks of water, helping each other attach the ankle weights correctly or offering to visit if someone had had a fall. They were aware of the details of each other's lives such as if someone's spouse was unwell. They appreciated the suffering and struggles of others. The togetherness generated a unique sense of feeling within the group.

> *"I think it's the input and the positive energy. And the vibe if you want to go back to hippydom. You know it's just the general feeling that exists when we're all sort of doing it all together. A nice sort of happy feeling…."* (Female, 68 years, Circuit Training Class)

This togetherness overflowed to the summer break when the Circuit Training Class participants would continue to meet up. This was seen as an opportunity to keep together and stay exercised.

The togetherness participants experienced through the CBGEP supported the human aspects of being in community. Participants' uniqueness was appreciated and celebrated in relation to each other, in their human connectedness.

Uniqueness

A person's individuality is unique in space and time and cannot be reduced to a descriptive, definitive list of their personality and character. A person will always be more than the sum of their parts and the words used to try and describe their parts (Todres et al. 2009).

The uniqueness of participants' individual capabilities was recognised in the way that the programme was personalised and adapted. The instructor was aware that they had specific health challenges and was mindful to remind them to work within their own limits and to stop if anything was causing pain.

> *"…I suppose it's obvious when you think about it. But there are different types of people with different needs. You need to tailor your solution to them…."* (Male, 68 years, Circuit Training Class)

As participants in this CBGEP, their uniqueness was actualised. There was an acceptance of participants' individual physical abilities and limitations. The sheer act of seeking to understand a person's uniqueness and the subsequent respect due to an individual in light of their uniqueness was important.

Summary of the Application of the Humanisation Framework

The humanisation framework was utilised here to seek to understand the deeper meaning of the humanising perspective of physical activity adherence. Case 1 had evidence of humanising elements being present in the CBGEP. Participants had a freedom to choose to engage in the exercise programme and were empowered to exercise freely within their physical boundaries, without judgement or criticism. An understanding of their insider challenges was present with the instructors and their exercise peers. This included the challenges of pain or limitations due to physical health conditions. However, these insider challenges were not barriers to participation since the adaptable nature of the CBGEP afforded participants the

opportunity to continue engaging in the programme. The CBGEP helped participants make sense of their present, but within the context of their journey which had a before and a next. Thus a greater understanding of the whole person was enabled. The broader social connections made between participants added new dimensions to their personal journey and in the continuance of being a story maker and story teller in their lives. This meant they acted as organic authors of their lives by continuing to create and co-create with others. Participant uniqueness was permitted and understood in relation to the togetherness of others, reflecting their sense of place and belonging. Thus, the humanising dimensions described above all appeared to contribute towards a highly humanised experience of exercise.

Summary of Case 1 Findings

This section reported on the findings from Case 1. Contextual information set the background to the case and the questionnaire data assisted in describing the features of participants who adhered to the CBGEP. There were similarities in the main themes between the qualitative methods (Table 4.6). The findings from Case 1 will be revisited in Chapter five when the data will be used in the analytic process of explanation building as a means to further understand older people's adherence to CBGEP. The following section reports on the findings from Case 2.

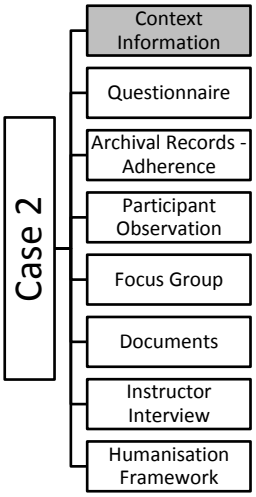
Method / Theme	Participant Observation	Focus Group	Documentation	Instructor Interview
Factors Related to the Individual	✓	✓		
Instructor	✓	✓		✓
Programme Design	✓	✓		✓
Participant Perceived Benefits		✓	✓	
Social	✓	✓		✓

Table 4.6 Main Themes from Case 1 based on each Qualitative Method

4.2. Research Findings Case 2

This section reports on the findings from Case 2. Case 2 was a green exercise referral scheme whereby National Health Service (NHS) health care practitioners can refer patients for an outdoor exercise programme. The structure of this section mirrors Case 1, with the initial section setting the context of the case and the subsequent sections reporting on the themes generated from each data collection method. The section concludes with a depth phase of analysis that utilises the humanisation framework.

4.2.1. Context: Case 2



History and Community-based Group Exercise Programme Description

A summary of the programme history and description of the content of the exercise programme is presented here to set the context of the findings. This summary was generated from time spent in participant observation and the instructor interview.

The traditional exercise prescription involves a person's doctor referring them to the local leisure centre with a view to encouraging them to get back to health and fitness. The green referral is a variation on this and grew out of the fact that many people enjoyed the outdoor environment but needed some specialist help with their individual health concerns.

The CBGEP takes place outdoors at a country park in the South West of England and has been running since October 2013 (see Figure 4.7 and Figure 4.8 for photographs to add visual understanding to the CBGEP context). At the start of the class the group would meet at the visitor centre near the car park. This served the

administration purpose of registering and paying for the session at the reception desk as well as a convenient, central, indoor location to meet. Between three to ten participants attended the programme during the period of participant observation data collection.

The exercise programme lasts for approximately one hour. The routine consisted of a warm up period of walking and gentle aerobic exercises followed by walking interspersed with strength, coordination, balance exercises, and stretches. The lake and forest route was alternated each week for variety. The instructor advised participants to meet at convenient stop points along the walking route. This meant that participants could walk at their own pace, resting where necessary. The stop points (often a small clearing in the forest, picnic benches or the tarmacked area outside the refreshment huts) provide a moderate sized space for the focused exercise stations. The instructor would incorporate the trees, benches, steps or tree stumps into the strength, coordination, and balance exercises.

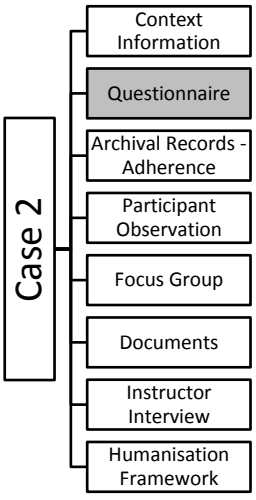
Figure 4.7 Photograph of the Exercise Environment, Case 2

Figure 4.8 Photograph of the Visitor Centre Meeting Location, Case 2

Cost of Attendance

The cost for attending the CBGEP varied depending on the participants' residential postcode. The local Clinical Commissioning Group (CCG) funded selected areas. Where this was the case the programme was initially free, entitling the individual to four consultations with the referral specialist (group instructor) and 12 weeks of exercise sessions. Outside the area funded by the CCG the cost was £25 for the same entitlements. After the initial 12 weeks the cost was £4 per session, which included free parking at the country park.

4.2.2. Questionnaire: Participant Features Case 2



Demographic Features

In Case 2, five participants who were eligible consented to participate in the study. They had a median age of 70 years (IQR 5.5 years) and were predominantly female (80%). The main demographic findings are displayed in Table 4.7.

Variables	Case 2 (n=5)
Age, Years, Median (IQR)	70 (5.5)
Gender, n % Male Female	 1 (20) 4 (80)
BMI*, n (%) Normal Overweight Obese	 0 3 (60) 2 (40)
Current Relationship Status, n (%) Married Divorced Widowed	 4 (80) 0 1 (20)

*BMI Normal: 18.5-24.9kg/m^2, Overweight: 25-29.9kg/m^2, Obese: ≥30kg/m^2 (WHO 2015)

Table 4.7 Demographic Features of Case 2 Study Participants

Lifestyle Features

The lifestyle features of smoking, alcohol consumption, physical activity and diet were assessed using questionnaires. A summary of these lifestyle features of Case 2 study participants are displayed in Table 4.8.

Variables	Case 2 (n=5)
Current Smoker, n (%)	0
Smoking History, n (%)	1 (20)
Number of Alcoholic Drinks During an Average Week, n (%) 0 1 – 3 drinks 4 – 7 drinks 8 +	 4 (80) 1 (20) 0 0
Lifetime Physical Activity, n (%) Not Active Somewhat Active Active	 1 (20) 0 4 (80)
Phone-FITT Physical Activity Score[a], Median (IQR)	56.5 (13.0)
Diet, MEDAS[b], Median (IQR)	7 (3)

[a] An older person specific questionnaire which considers frequency and duration of both household and recreation physical activities. Higher scores indicate higher activity levels (Gill et al. 2008).
[b] The Mediterranean Diet Adherence Screener (MEDAS) is scored out of 14. It was developed as a screening tool to assess adherence to a Mediterranean-type diet. The higher the score the better adherence (Schroder et al. 2011).

Table 4.8 Lifestyle Features of Case 2 Study Participants

Social and Socio-Economic Participant Features

The social features of the participants were measured using two different questionnaires. The Lubben Social Network Scale (LSNS-6) was used as a measure of participant social network size and density (Lubben et al. 2006). This measure was helpful in highlighting individuals at risk of social isolation. In Case 2, the LSNS-6 indicated that two participants were at risk of being socially isolated. The Multiple Scale of Perceived Social Support (MSPSS) was utilised as a measure of perceived support. This showed a median score of 6.2 (IQR 1.0) indicating high support (scores ≥ 5.1 denote high perceived support). The two participants who could be at risk of social isolation were noted to have moderate (score 4.7) and high (6.2) perceived support. This indicates that despite their small network size indicating risk of social isolation, they perceived to be well supported. See Table 4.9 for the summary of findings.

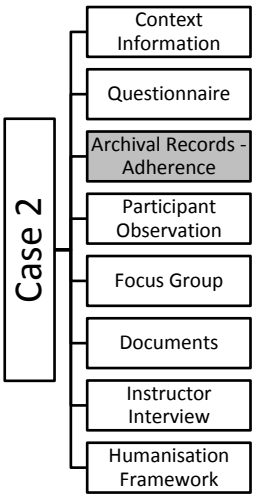
In terms of the neighbourhood SES of participants in Case 2, the median Index of Multiple Deprivation (IMD) was 26291 (IQR 10865.5) indicating being closer towards the least deprived English neighbourhoods (See Section 3.7.1 for further explanation of the IMD). Individual SES found that all participants were currently retired and had completed secondary school or attained trade / technical or vocational qualifications.

Variables	**Case 2 (n=5)**
Social Network LSNS-6[a], Median (IQR)	14 (9.5)
Socially Isolated Based on LSNS-6[a], n	2
Perceived Social Support, MSPSS[b], Median (IQR)	6.2 (1.0)
Neighbourhood Socio-Economic Status (deprivation rank), Median (IQR)	26291 (10865.5)
Highest Education Level, n (%) Some Secondary School Completed Secondary School Trade / Technical / Vocational University	 0 3 (60) 2 (40) 0
Current Employment, n (%) Full-time Part-time Retired	 0 0 5 (100)

[a] Lubben Social Network Scale (LSNS-6) scores range from 0-30. Score ≤11 indicates risk of social isolation.
[b]Multiple Scale of Perceived Social Support (MSPSS) is a 12-item scale measuring perceived availability of support from family, friends and significant other. Low support: 1-2.9, moderate support: 3-5, high support: 5.1-7.

Table 4.9 Socio-Economic Features of Case 2 Study Participants

4.2.3. Archival Records: Adherence Rate Case 2



The archival records of attendance provided by the instructor were used to understand adherence for Case 2. Adherence data is reported as programme and individual participant adherence rates (see Section 4.1.3 for details on how this was calculated).

Programme Adherence Rate Case 2

Case 2 had a programme adherence rate of 71%.

Individual Adherence Rate Case 2

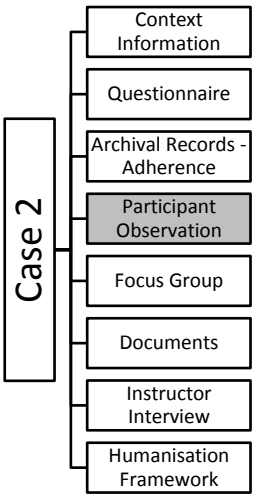
Individual participant adherence data were only available from the time of the computerisation of records (4 November 2014 – 28 April 2015). These are displayed in Table 4.10. The median individual adherence rate in Case 2 was 91% (IQR 19.5). However, this was based on records over a limited six month period.

Participant Identification Number	**Participant Gender and Age**	**Length of Attendance, Months[a]**	**Adherence Rate, %*[b]**
Case2-P1	Female, 67 years	12	91
Case2-P2	Female, 72 years	12	96
Case2-P3	Female, 73 years	12	91
Case2-P4	Female, 70 years	12	87
Case2-P5	Male, 67 years	12	61
Median (IQR)		**12 (0)**	**91 (19.5)**

* Proportion of attended sessions relative to offered sessions. [a] As recorded to 28 April 2015. [b] Based on data available 4/11/14 – 28/4/15

Table 4.10 Participant Age, Length of Attendance, and Adherence Rate Case 2

4.2.4. Participant Observation Findings Case 2



The researcher spent nine hours as a participant observer in Case 2. Field notes were made directly after each session of participant observation. This generated 18 pages of A5 handwritten field notes. Notes were made on the conversations and interactions the researcher had with the exercise group participants as well as general observations about the CBGEP. These field notes were typed into a Word document and expanded upon at the earliest available opportunity providing 10 pages of double line spaced text. The Word document was imported into QSR International's NVivo 10 qualitative data analysis software and underwent thematic analysis (see Section 3.9.1).

The results of this thematic analysis led to the development of five themes and one sub-theme related to participant adherence to the CBGEP (Figure 4.9). These themes are described below.

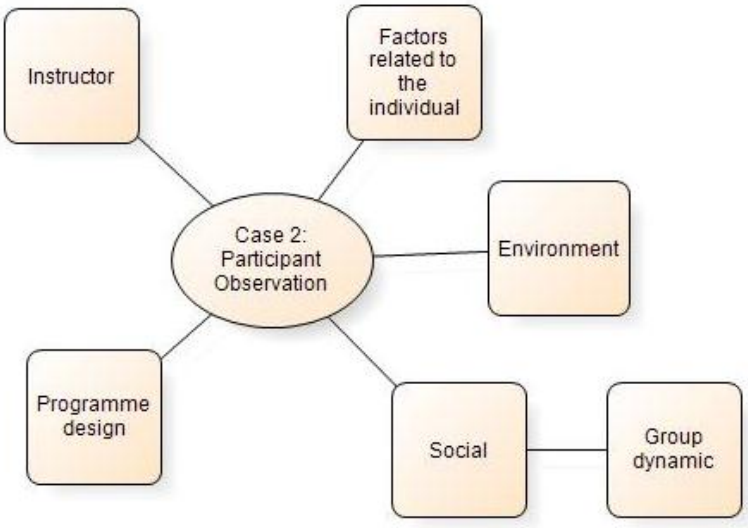


Figure 4.9 Case 2 Participant Observation Themes Related to Adherence

Factors Related to the Individual

This theme referred to the factors which were related to the individual and may influence participant adherence. For example, the physical improvements such as weight loss appeared to serve as a motivator to adhere. There was also a level of fun and enjoyment which was observed within the group as participants interacted with one another. This social aspect appeared to be a personal motivator for some.

Instructor

This theme is defined as the role in which the instructor was observed to play in supporting participant adherence. Several participants commented on how much they liked the instructor. This was observed in the way participants related to the instructor, sought her advice, and in how the instructor appeared to show genuine concern for each individual participant. The instructor seemed highly conscious of participants' individual health problems and kept abreast of any changes in their individual health by specifically asking participants each week.

The instructor was observed to work hard in ensuring that the CBGEP was suitable for the range of abilities present by adapting exercises where necessary. The instructor regularly reminded participants to work within their own fitness boundaries to avoid over-exertion, thus encouraging them to work within their safe limits.

Programme Design

This theme relates to the features of the way the programme was structured and designed which were observed to be noteworthy in regards to participant adherence. For example, having a programme structure which accounted for a wide range of abilities was observed to be important. Exercises were quickly adjusted depending upon individual abilities thus the programme could be tailored to their individual needs. However, some exercises were unpopular with participants no matter what their individual ability. For example, there was a collective, jovial, group 'groan' when the instructor asked them to carry out side-stepping exercises. Nevertheless, participants acquiesced and carried out the exercises.

Safety was observed to be a structured part of the programme. At the start of each session the instructor made individual health enquiries with participants, particularly those who had more acute health problems. There were regular verbal reminders for participants to pace themselves and not go beyond their physical limitations. The instructor was also mindful to point out trip hazards such as tree roots, pot holes or ditches as they progressed around the country park.

One limitation of the programme was the fact that the location was not situated on a bus route. Participants were therefore dependent upon being able to drive to the country park or car share.

Social

This theme refers to the social nature of the CBGEP which was observed to be important in exercise adherence. The group nature of the programme generated a positive group dynamic which was a sub-theme of social.

The walking section of the CBGEP was observed to be the time when individuals would fall into pairs and socialise. In particular, the final walk back towards the visitor centre was often a time for quality conversations. This generally involved sharing news of their day-to-day lives, family, or holidays. The instructor was also included in these conversations.

> *"Really nice social chat on the walk home. They asked the instructor about her holiday and if she took the caravan away, i.e. they knew details of her life too and were genuinely interested."* (Field notes, Case 2)

There was observed to be a level of social connection between participants which stretched beyond the boundaries of the CBGEP. This was noted in the way they maintained communication with one another outside the CBGEP. Nevertheless, it was interesting to observe that despite the social nature of the CBGEP, participants did not stay after the exercises to continue talking or have a drink together in the café. Instead, participants tended to leave immediately after the programme was finished.

Group Dynamic

The group dynamic was noted as a sub-theme to the social aspects of Case 2. Group dynamic describes the way participants interacted and developed as a group. As with Case 1, the group dynamic could also have been situated under programme design since the programme was structured to be a group rather than an individual programme. However, the decision was made to include it under social to reflect the complex interaction between the participants.

The group nature of the programme was observed to generate a positive group dynamic which served to support adherence. Participants were observed to enjoy the banter which was present, particularly in the group warm up session at the start of the exercise class. Participants commented that they liked *"having a laugh".*

Participants were observed to have a genuine concern for one another. For example, when a participant returned after being absent for several weeks due to illness, the group greeted them in a warm, encouraging, enthusiastic manner. Participants appeared to care about the presence of one other in the group. In addition, the group was observed to be inclusive. This manifested itself when new participants joined the group and were quickly involved in conversations.

Environment

The outdoor exercise environment was observed as being a notable feature in supporting CBGEP adherence. This was evidenced in comments by participants about the sounds of the birds in the forest, the colours of the trees or plants, and clearly observed in the joy on the faces of participants as they engaged in pointing out various aspects of the environment to one another. This environment was expressed as being preferable to a gym-based programme that participants viewed as boring.

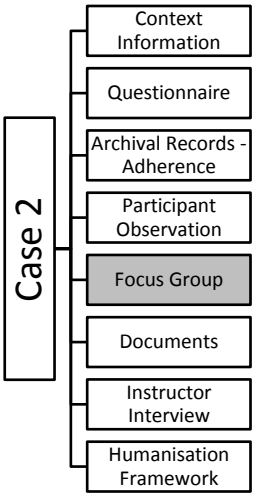
The changeable English weather did not seem to be a hindrance for participants. Several commented that they attend the CBGEP no matter what the weather, including occasions when it has snowed.

The features of the park were built into the exercise sessions, such as the park benches (for knee or sit-to-stand exercises), old tree stumps (for step ups) or trees themselves (for push-ups in standing or use of resisted exercise bands). This provided a different tactile element to the CBGEP with experiencing the feel of the trees.

> *"We all walked to the second clearing and did some upper limb resistance exercises with theraband. The instructor didn't have enough theraband for all so she got some to do push ups in standing against the tree and then rotated people round. It was fun to use the trees for exercises like push ups or step ups on old tree stumps."* (Field notes, Case 2)

This outdoor environment was observed to provide a genuine, real-life challenge to participants balance as they negotiated tree roots, inclines or potholes in the path.

4.2.5. Focus Group Findings Case 2



In Case 2, a single focus group lasting 23 minutes was conducted with six participants. The audio recording of the focus group was transcribed and generated 22 pages of double line spaced text in Word. The Word documents were imported into QSR International's NVivo 10 qualitative data analysis software where they underwent thematic analysis (see Section 3.9.1).

Thematic analysis led to the development of six themes and one sub-theme related to participant adherence to the CBGEP (Figure 4.10). These are described below.

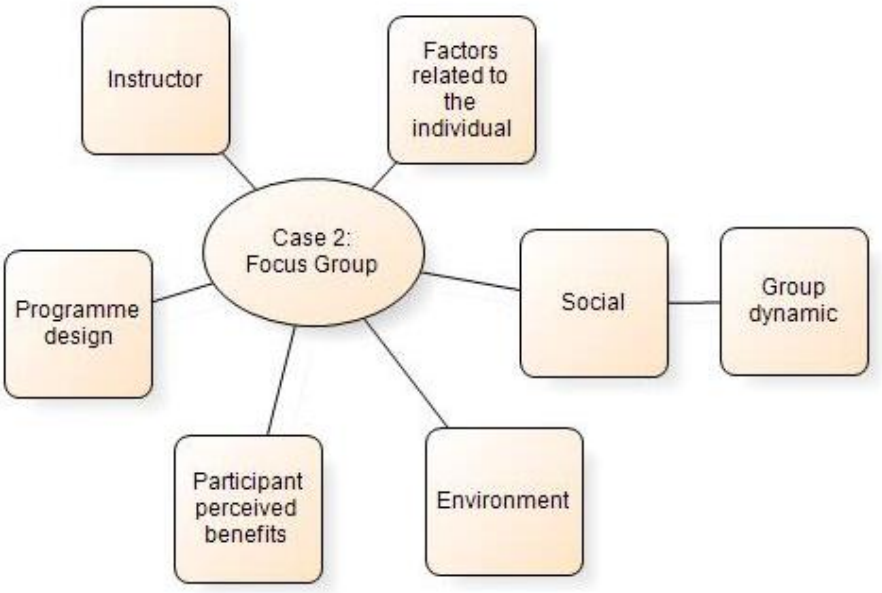


Figure 4.10 Case 2 Focus Group Themes Related to Adherence

Factors Related to the Individual

The factors related to the individual refer to the more personal, intrinsic motivations towards CBGEP adherence. There was an appreciation among participants that a personal level of discipline and motivation was needed to stay active. This became notably more difficult with increasing age since many of the forms of activity they had been involved with throughout their lives became harder. For example, there was an awareness that their reactions were more delayed with increasing age and therefore riding a bike carried a greater level of challenge. This was due to the fear of falling off and breaking a bone. Walking was also more of a challenge:

> *"It's only the last few years that I've found it* [walking] *quite difficult and now you know I find it hard work but I keep persevering because I know it's better than sitting around, you know, and being idle."* (Female, 73 years)

In addition, the programme itself served as a motivator since it provided a reason to *"…have something to get up for… to go out and do."* (Female, 67 years)

Participants expressed a range of physical activity levels across their lifespan. This varied from those who had regularly engaged with exercise in aerobics classes, gyms, line dancing or bike riding to the more inactive:

"I've never exercised in my whole life, apart from being at school when I used to do boxing, but since leaving school I've never exercised, never." (Male, 67 years)

Instructor

This theme is concerned with the role the instructor played in serving to sustain participant adherence to this CBGEP. The instructor was viewed by participants as being enthusiastic, inspirational, jolly, young, and lively. She was also seen as being someone who cared for them as participants and contacted them via a telephone call if they missed sessions to enquire as to their health. If participants struggled with the exercise, the instructor was said to support them.

"She knows we've all got different disabilities or problems, but you know she's always there to help us along…." (Female, 73 years)

"[Instructor's name] *really cares for her people, which is a great thing. She worries about people."* (Male, 67 years)

Programme Design

This theme describes the more practical elements of the programme that were seen by participants as being important in aiding adherence. This included aspects such as cost and location.

Participants viewed the cost as being reasonable and *"a small price to pay"* (Female, 72 years). However, participants would not have wanted the cost to be any higher. The location of the programme was noted to be helpful inasmuch as it was local. As such, participants did not have to travel far from their home and could easily come by car. Being local also afforded participants the opportunity to meet other people within the area thus expanding their network of friends: *"I probably know more people now through doing these walks, through doing the exercises"* (Female, 73 years).

Social

This theme summarises the views of participants in terms of the social aspects of the CBGEP which supported adherence as well as the role of the sub-theme of the group dynamic.

The sociable nature of the CBGEP was important in aiding adherence: *"I think it's because it's sociable, we like coming"* (Female, 67 years). Although it was noted that it took time to get to know people and build friendships but as the months went on they felt more at ease with one another. Participants viewed each other as nice people, which led to the development of new friendships which was seen as a meaningful benefit of attending.

> *"That's a big thing I think, getting to know different people. Not people who are just your neighbours sort of thing but people further afield."* (Female, 72 years)

The social aspects were also important in providing a distraction from the exercise intensity.

> *"You don't realise just what you've done because it shortens the length the time because you're talking to people, you're in a group. And it's over before you know."* (Female, 73 years)

Case 2 did not have many male participants in the CBGEP. However, this did not appear to be a hindrance or concern to the only regular male participant.

> *"…it doesn't worry me at all. As I say, they've been very good to me and everyone's so kind and jolly it boosts my spirits, if you know what I mean."* (Male, 67 years)

Group Dynamic

Group dynamic was noted as a sub-theme to the social aspects of Case 2. It is situated under social to include the way that the social interactions of participants were assisted by the group dynamic. Group dynamic describes the way participants interacted and developed as a group and how this impacted upon their adherence.

Participants expressed a preference for the group nature of the programme which was found to be encouraging and preferred to exercising alone or in a gym when *"nobody else talks to you."* (Female, 67 years)

> *"There is something about doing it in a group as opposed to doing it on your own. You've got the encouragement of the others. It's more sociable than walking out on your own."* (Female, 73 years)

Even within the context of the focus group participants were encouraging one of the group who had just returned to the CBGEP after being away for several sessions due to ill health. Participants reported that they missed one another if they were not present, *"We miss* [participant's name] *when he doesn't come"* (Female, 67 years).

There was an awareness of the varying levels of ability between participants due to their different health conditions. This appeared to add to a sense of belonging since none of them were *"the odd one out"* (Female, 67 years). This helped them understand their own health challenges in the context of others.

> *"And because people have got different things wrong with them, you know, you appreciate, you think well I'm quite lucky."* (Female, 67 years)

Participant Perceived Benefits

This theme refers to the participant perceived benefits which were noted to be important in contributing towards CBGEP adherence. These perceived benefits were related to physical and wellbeing gains. Participants commented upon physical improvements such as weight loss, improved fitness, and increased walking ability.

> *"…in the first 6 months I lost over a stone in weight and I got a lot healthier. In fact, I was keeping up with everybody in the front. From being at the back of the group I became at the front of the group."* (Male, 67 years)

Participants also expressed broader perceived benefits. For example, there was a sense of enjoyment and feeling good about themselves; feeling cheerful, happier, encouraged, improved wellbeing, and a degree of achievement:

> *"I think you feel you've achieved something when you've been here. Even if it's just walking you have achieved something which you wouldn't have done if you didn't come here, you know."* (Female, 72 years)

> *"The enjoyment I think more than anything else."* (Female, 73 years)

Environment

This theme refers to aspects of the environment which were seen as being important in maintaining adherence. Participants appreciated the space of the country park, being outside and the wildlife.

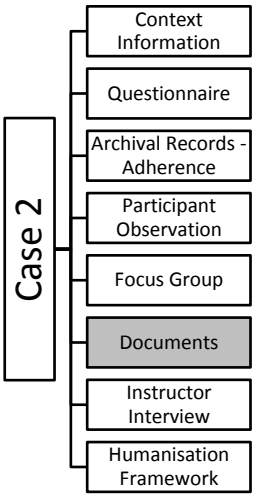
"There is something about being out in the fresh air. Especially here, we've got the open fields around the lake and we've got the trees and everything It's lovely, lovely." (Female 73 years)

This outdoor environment was preferable to a gym, which was seen as being boring and isolating.

"If you go to gym nobody else talks to you. They're all concentrating on the bike or what they're doing. Nobody says a word." (Female, 67 years)

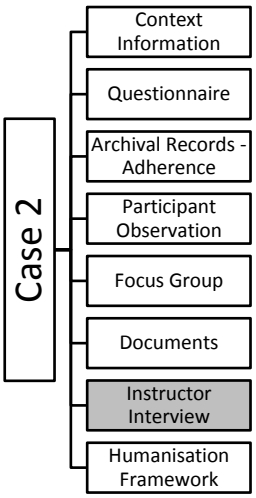
Being an outdoor programme that runs throughout the year may have meant that the weather could have acted as a deterrent. However, the weather did not seem to discourage these participants. They commented that on occasions they had been 'wet through' following heavy rainfall and even ventured out in the snow. However, the fact that they all drove to get to the CBGEP helped with this since *"it's not as though you're standing around waiting for a bus and you're soaking wet before you get here"* (Female, 72 years).

4.2.6. Documentation Findings Case 2



Documentation for Case 2 was limited to a DL size leaflet advertising the programme and a website summarising the referral. Similar information was duplicated across the leaflet and website which referred to the fact that it was a 'green' i.e. outdoor alternative to a leisure centre based referral scheme. Due to this limited data no documentary analysis was possible for Case 2.

4.2.7. Instructor Interview Findings Case 2



In order to explore some of the themes in more depth, from the perspective of the CBGEP instructor, a semi-structured interview was carried out with Case 2's instructor. The interview was audio recorded and was 24 minutes in length. When transcribed the interview generated 18 pages of double lined spaced text in Word. The Word document was imported into QSR International's NVivo 10 qualitative data analysis software where it underwent thematic analysis (Braun and Clark 2006). Background information on the instructor and the findings from the thematic analysis of the instructor interview are presented in this section.

The instructor was in her late 20s and had been leading exercise programmes for older people since 2008. She holds a Level 3 training qualification. Findings from the interview analysis highlighted three themes: programme design, the social features of the programme, and the role of the instructor (Figure 4.11). These are reported on below.

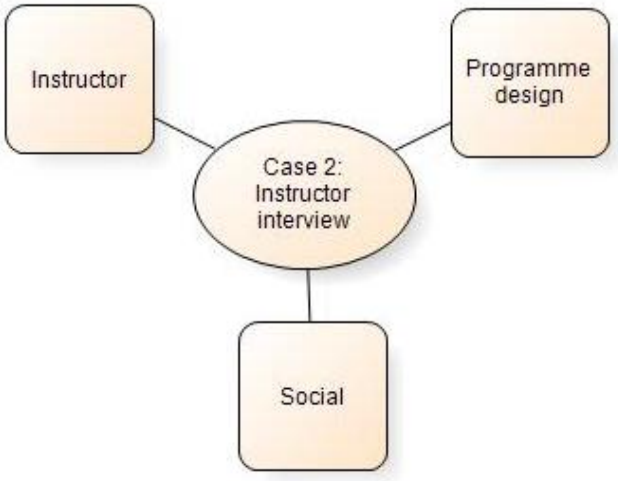


Figure 4.11 Case 2 Themes Related to Adherence from the Perspective of the Instructor

Instructor

This theme relates to the role of the instructor and the features of her personality, exercise knowledge, and motivation which may influence participant adherence in this CBGEP.

The instructor recognised that her friendly, caring, and approachable nature was one aspect which helped in supporting people to engage in exercise. The instructor felt this was particularly important for participants who lacked confidence with exercise or had low self-esteem. Her training, knowledge, and experience were also commented upon as being something which she felt participants found helpful. This was evidenced in the way participants would trust her enough to seek her advice about their health concerns. She felt that this trust that participants had in her as a professional helped them to keep exercising and achieve their goals.

> *"I always hope that I'm quite an open person and I'm quite approachable because I think it's really important with the referral that you're somebody that people can open up to and talk to. That you're an approachable, friendly person that cares."* (Instructor, Case 2)

One of the main motivations for the instructor to continue running the programme seemed to stem from the enjoyment the instructor found in the CBGEP. The instructor appreciated the sociable nature of the group and valued observing the improvements participants made week by week. She enjoyed the fact that each

week participants laugh, smile, talk about what they may have been doing in the week and tell their jokes.

Programme Design

This theme relates to the way the instructor structured and ran the CBGEP to account for a wide range of exercise abilities.

The instructor was mindful of the fact that exercise can be daunting for those who have not been regularly active. On occasions she has observed that this can make individuals quite anxious. She therefore helps participants pace themselves by planning the programme around bench locations to give them an opportunity to rest as needed. The instructor also plans the session around the park such that participants are never very far away from the main visitors centre in case people are not feeling well and unable to manage the whole session.

The instructor adapts the exercises to each participant's ability. Thus, those with a higher fitness level are more challenged and those who need lower intensity exercises are still supported and able to participate. The instructor recognised that offering individual exercise adaptations meant that the group was more accessible to a wider range of abilities which was felt to aid adherence.

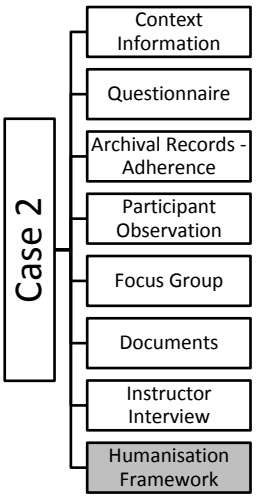
Social

This theme describes the social element of the CBGEP which was seen by the instructor as an important aspect of adherence.

> *"I think because they enjoy the social group I think that makes them come and attend and keep attending…."* (Instructor, Case 2)

As the number of participants in the group had grown the instructor had observed individuals achieving greater fitness outcomes because they have continued week after week. The instructor felt that the social aspect added to the enjoyment and *"If someone enjoys something they're more likely to achieve their goals"* (Instructor, Case 2).

4.2.8. Application of the Humanisation Framework Case 2



As with Case 1, elements of the humanising dimensions of the humanisation framework were similarly evident in the field notes, focus group, and instructor interview of Case 2. This section therefore reports on the results of this depth phase of analysis whereby the data from each of the qualitative methods was analysed in a deductive manner using the humanisation framework (Todres et al. 2009). Findings are reported under each of the eight humanising dimensions. A brief definition is repeated at the beginning of each dimension. See Chapter three, Table 3.3 for a table highlighting the dimensions.

Agency

The dimension of agency is closely linked to the dignity and freedom we have as humans to make decisions and be responsible for the outcomes of those decisions (Todres et al. 2009).

Agency was noted in Case 2 through the way that participants had chosen to act on the exercise referral they had received from their doctor advising them to be more active. There was a desire to take control of their lives, to get fitter, to improve their balance or walking, or lose weight. The enjoyment participants found in the CBGEP appeared to help them continue to choose to come. The enjoyment also made it easier to return to the CBGEP after a break or if they had missed sessions due to hospital appointments, holiday, or family visits. *"It's not difficult because we enjoy it so much. You want to get back"* (Female, 72 years).

The instructor was observed to communicate well and invited their input on decisions such as whether they wished to continue to meet whilst she was on

annual leave. Involving participants in these small decisions provided a greater sense of agency within the group.

The CBGEP thus supported participant agency through the enjoyment participants found in the group. This helped make the decision to return to the programme after breaks easier. The instructor's choice to include participants in simple decisions about the CBGEP also supported the humanising dimension of agency.

Embodiment

Embodiment relates to how we live within the fragile limits of being human; with the experiences of pain, excitement, hunger, vitality, fatigue, etc. When we are not overly concerned with these experiences, our embodiment supports us in moving out into the world (Todres et al. 2009).

Embodiment was evidenced in the way that the CBGEP was noted as being a reason for participants to engage in the world. It was seen as something "*to get up for…to go out and do"* (Female, 67 years). For those who had ceased to be active for various reasons, the CBGEP acted as an incentive to get fit and keep active, to continue engaging in the world beyond the normal boundaries of their lives.

Engaging with others also brought an added dimension of meaning, far more so than a gym environment, which was seen as being more isolating. As participants talked and connected with one another during the exercises, time passed more quickly and they accomplished more physically than they realised. Thus there was a sense of achievement from attending the CBGEP; participants felt better for engaging in the programme.

> *"Even if it's just walking you have achieved something which you wouldn't have done if you didn't come here you know."* (Female, 72 years)

Extending the parameters of participants' social boundaries in finding new friendships was important both for those who had lived in the area for many years and those who had moved to the locality more recently.

> *"That's a big thing I think, getting to know different people. Not people who are just your neighbours sort of thing, but people further afield."* (Female, 72 years)

Despite participants health challenges (which were the reason for their referral to the CBGEP), the instructor did not treat them like their diagnosis. Rather she was mindful of their challenges but supported them to enable ongoing engagement in the CBGEP.

The CBGEP demonstrated embodiment in the way that it added an opportunity for participants to engage bodily in meaningful ways in relation to the world and other participants. The CBGEP was an incentive to keep active and was more meaningful than a gym environment which was perceived as more reductionist in nature. New friendships added meaningful engagements with those outside of participants' usual social circles thus extending the boundaries of their lived world.

Insiderness

Insiderness refers to the understanding that as humans we carry a view of living life from the inside out and that we alone are the authors of that inward sense (Todres et al. 2009).

Participating in the CBGEP highlighted different insider experiences for participants. They reported feeling better for going out of the house; they felt encouraged, they felt good about themselves, felt happier and more cheerful. Some participants recognised that the insider experience of fear of falling meant that they found it more difficult to keep active as they aged. However, there was an inward determination present:

> *"It's only the last few years that I've found it* [walking] *quite difficult and now you know I find it hard work but I keep persevering because I know it's better than sitting around, you know, and being idle."* (Female, 73 years)

The way the instructor cared for the participants and sought to understand their insider experience was evident. The instructor was aware of participants' individual health problems and so managed the CBGEP in a way that all could be involved, no matter what their physical ability.

Insiderness as a humanising dimension was therefore evidenced in Case 2 through the participants' positive expressions of the way the CBGEP made them feel. The instructor understood that each participant had challenging insider experiences such

as fear of falling or pain yet was able to support participants through these experiences during the CBGEP.

Personal Journey

Being human involves being on a journey and any present moment needs to be understood in the context of before and next on a continuum (Todres et al. 2009).

Attendance at the CBGEP appeared to form part of participants' unique personal journeys. For some, being regularly active was historically part of their journey but on occasions other life events had taken over such as caring for family members. As such, exercise was moved lower down their priority list. Others had not had an active lifestyle: *"I literally had become a couch potato after I retired, I didn't do anything. Not a single thing"* (Male, 67 years). Therefore for some, being regularly active was new for their personal journey.

On occasion, the physical activity aspect of participants' journeys would be interrupted. This could have been because of ill health, holiday, visiting family, or occasionally particularly inclement weather. The CBGEP provided an opportunity for participants' journeys to intersect with others with the added benefit of forming new friendships. These friendships added to the enjoyment of the group and furthermore supported adherence as they became more familiar with the before and next of one another's journey.

Thus, personal journey was noted as a humanising dimension of the CBGEP. Whilst the role of physical activity had had varied levels of significance on the 'before' continuum of participants lives, it did seem to be an important feature of their current journey. In addition, the friendships formed through participants' ongoing adherence supported them on the next part of their journey.

Sense Making

As humans we care about meaning and have a desire to make sense of events and experiences. This involves bringing aspects of our lives together (Galvin and Todres 2013). Sense making looks for "*Gestalt* and patterns that connect" (Todres et al. 2009, p. 72).

Sense making was noted as a humanising dimension in Case 2. This was evidenced in the way that exercising together with peers who struggled with similar

health challenges seemed to help participants make sense of their own health problems.

> *"And because people have got different things wrong with them, you know, you appreciate, you think, well I'm quite lucky."* (Female, 67 years)

There were also new levels of meaning which appeared to be produced as participants lost weight or felt their physical health improve.

> *"I lost over a stone in weight and I got a lot healthier. In fact, I was keeping up with the everybody in the front…."* (Male, 67 years)

The way that the CBGEP helped participants make sense of their health challenges appeared to add further to a sense of being human. In addition, the health improvements they experienced supported them in the continued story being told in their lives.

Sense of Place

Sense of place refers to the way that as humans we come from a particular place which is more than just a physical environment; it is a place which generates the feeling of 'at-homeness', security, comfort and belonging (Todres et al. 2009).

Whilst a sense of place is generated from more than being in a particular physical environment, in this case the physical environment was seen by participants as being special. The outside space, the fresh air, wildlife, open fields, lake, trees, all added to their sense of place.

Additionally, over time, participants found their place within the group. This seemed to take two forms. Firstly, as participants level of fitness improved, some moved from being at the back of the group when walking to being nearer the front of the group, leading out and setting the pace. Secondly, there was a sense of place that needed to be established in terms of belonging within the group and trust in the instructor. Once participants had found their place within the group they seem to genuinely miss each other when they were absent. This took time to be established but once it was present the sense of place and belonging added to a sense of security. The fact that all the participants had various health challenges further supported this sense of belonging within the group.

> *"But it takes time to get to know people and over the months you get to know them better don't you. You feel more at ease and you can chat…."* (Female, 70 years)

The fact that participants all had individual health challenges added to a sense of belonging in that they were not alone in their health problems. There also seemed to be a level of trust in the instructor, which added to their sense of security within the group. Thus, a sense of place which was experienced by participants through this sense of security and belonging was evident in the CBGEP.

Togetherness

Togetherness relates to the understanding that as humans, an individual's uniqueness is only able to exist in relation to others, in belonging and community. It is togetherness which helps us experience empathy in which we can understand the challenges of the other (Todres et al. 2009).

Togetherness was evidence in Case 2 through the group nature of the CBGEP. This supported a social platform which appeared to add to participants' wellbeing and made them feel happier and more cheerful. The togetherness of that group also meant that participants were able to encourage one another.

> *"There is something about doing it in a group as opposed to doing it on your own. You've got the encouragement of the others, it's more sociable than walking out on your own."* (Female, 73 years)

Participants appeared to enjoy each other's company. They also understood that everyone had various health problems of their own. This meant they were better placed to understand the challenges faced by each other. This in turn seemed to add to their belonging. Although it took time for a sense of ease to be built among one another, as it was developed they began to care for one another. This also led to new social connections that meant their social circles expanded.

Therefore, the social aspects of the CBGEP were highly humanised and demonstrated a sense of togetherness. This togetherness supported their human connectedness and the sense that others cared for them.

Uniqueness

A person's individuality is unique in space and time and cannot be reduced to a descriptive, definitive list of their personality and character. A person will always be more than the sum of their parts and the words used to try and describe their parts (Todres et al. 2009).

Participants all attended the CBGEP for unique reasons but predominantly due to their unique health challenges. Be that poor balance, arthritis, degeneration of the spine, difficultly walking or a desire to lose weight. The instructor was aware of the uniqueness of each participant and their individual health challenges. She therefore adjusted the exercise programme so that participants were not being pushed beyond their physical capabilities yet were still included.

Uniqueness as a humanising dimension was therefore evidenced in Case 2 in the way that each participant was supported uniquely with their individual challenges. Their individual identity was appreciated and seen in the way they valued one another within the group and missed each other if someone was away for a time. This maintenance of their identity was highly humanising.

Summary of the Application of the Humanisation Framework

The humanisation framework was utilised in Case 2 to seek to understand the deeper meaning of the humanising perspective of physical activity adherence. Case 2 demonstrated evidence of humanising elements being present in the CBGEP. Participants in this case all chose to follow the advice of health professionals to become more active. There appeared to be a desire by participants to take control of their lives and improve their fitness. The instructor was mindful to include participants in some of the CBGEP decisions which seemed to provide a greater sense of agency. The instructor also sought to understand the insider experiences of participants (such as pain or lethargy) by adapting the content of the programme to each individual. The CBGEP was viewed as something to get up for, to go out and do. The engagement with other participants brought an added dimension of meaning on their personal journeys through new-found friendships. Understanding that each participant had their own unique health challenges helped them make sense of their personal health problems and added to the empathy they had towards one another. This also supported their sense of place and belonging within the group. The humanising dimensions evidenced in this case thus added to a humanised exercise environment making participants feel more like human beings.

Summary of Case 2 Findings

This section reported on the findings from Case 2. The background to the case was set with a description of the CBGEP and by using the contextual information from the questionnaire data. Analysis of the qualitative data highlighted similarities with the main themes reported in Case 2 (Table 4.11). The findings from this section will be returned to in Chapter five when the data were used as part of an explanation building process to further understand older people's adherence to CBGEP. The following section reports on the findings from Case 3.

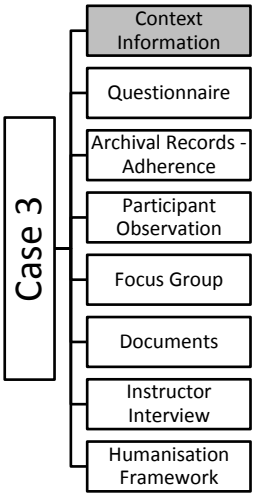
Method / Theme	Participant Observation	Focus Group	Instructor Interview
Factors Related to the Individual	✓	✓	
Instructor	✓	✓	✓
Programme Design	✓	✓	✓
Participant Perceived Benefits		✓	
Social	✓	✓	✓
Environment	✓	✓	

Table 4.11 Main Themes from Case 2 based on each Qualitative Metho

4.3. Research Findings Case 3

This section reports on the findings from Case 3, a privately run, non-profit community-based group exercise programme for older people. The structure of this section mirrors the first and second cases. The initial section sets the context of the case and the subsequent sections report on the themes generated from each data collection method, concluding with a depth phase of analysis that utilised the humanisation framework.

4.3.1. Context: Case 3



History and Community-based Group Exercise Programme Description

A summary of the programme history and description of the content of the exercise programme is presented here to set the context of the findings. This summary was generated from time spent in participant observation, programme documents, and the instructor interview.

This CBGEP is held in a seaside town in the South West England with a population of approximately 65,000 (ONS 2013). This particular CBGEP began in October 2010 as part of the Age UK 'Fit as a Fiddle' programme. This was a nationwide Big Lottery Funded programme that encouraged physical activity, healthy eating, and mental wellbeing for older people. The CBGEP was subsidised for the first 12 weeks with the expectation that there would be enough regular attendees to ensure a financially self-sustaining programme. Initial low participant numbers meant that this was not possible after 12 weeks. However, a second period of 12 week subsidies from Age UK was sufficient for the programme to become cost effective and self-sustaining.

The CBGEP was carried out in a community centre (see Figure 4.12 and Figure 4.13 for photographs to add visual understanding to the CBGEP context). The classes run in six-week blocks with a one week break in-between each block. The instructor changes the warm up and some circuits with each six-week block to add variety. The music is changed after every 12 weeks.

The exercise programme was 60 minutes in length and takes place on a Tuesday, 1pm-2pm. The exercises consist of a 15 minute choreographed group warm up, 15 minutes of circuits (12 stations where participants work in pairs alternating cardiovascular and resisted exercises), 15 minutes group peripheral strengthening, balance, and coordination exercises and finishes with 15 minutes core exercises and stretching. The CBGEP concludes with simple deep breathing exercises. Between 11 and 18 participants attended the programme during the period of participant observation data collection.

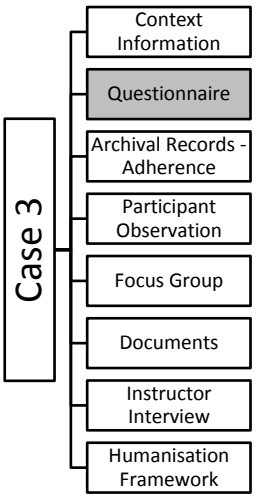
Figure 4.12 Photograph of the Inside of the Community Centre, Case 3

Figure 4.13 Photograph of the Outside of the Community Centre, Case 3

Cost of Attendance

Participants have two payment options. They can either pay for a block of six sessions at £30 (equivalent to £5 per session) or chose the pay as you go option (£5.50 per session). In January 2015 a new booking incentive scheme was introduced such that if 15 people booked then the instructor offered a cash back incentive of £1 per week. The instructor introduced this with the aim of encouraging more people to book block sessions to help with planning and costs. If participants miss a session they are able to attend any other venue free of charge subject to space availability.

4.3.2. Questionnaire: Participant Features Case 3



Demographic Features

The instructor had 23 participants registered for this CBGEP however they do not all attend each week. Out of those who have been attending regularly (≥1 year) eight agreed to participate in the study. Four participants completed the full set of questionnaires and four completed the demographics and social feature questionnaires only. The main demographic findings are displayed in Table 4.12.

The median age of participants who consented to being involved in the study was 68.5 years (IRQ 5 years). Study participants were predominantly female (77.5%).

Variables	**Case 3 (n=8)**
Age, Years, Median (IQR)	68.5 (4.5)
Gender, n (%) Male Female	 1 (12.5) 7 (77.5)
BMI*, n (%) Normal Overweight Obese	 4 (50.0) 3 (37.5) 1 (12.5)
Current Relationship Status, n (%) Married Divorced Widowed Other: Lives with Partner	 5 (62.5) 1 (12.5) 1 (12.5) 1 (12.5)

*BMI Normal: 18.5-24.9kg/m^2, Overweight: 25-29.9kg/m^2, Obese: ≥30kg/m^2 (WHO 2015)

Table 4.12 Demographic Features of Case 3 Study Participants

Lifestyle Features

The lifestyle features of smoking, alcohol consumption, physical activity and diet were assessed using questionnaires. A summary of these lifestyle features of Case 3 study participants are displayed in Table 4.13.

Variables	Case 3 (n=8)
Current Smoker, n (%)	0
Smoking History, n (%)	5 (62.5)
Number of Alcoholic Drinks During an Average Week, n (%) 0 1 – 3 drinks 4 – 7 drinks 8 +	 2 (25) 5 (62.5) 1 (12.5) 0
Lifetime Physical Activity, n (%) Not Active Somewhat Active Active	** 1 (25) 1 (25) 2 (50)
Phone-FITT Physical Activity Score[a], Median (IQR)	**47.8 (21.4)
Diet, MEDAS[b], Median (IQR)	**9 (2)

[a] An older person specific questionnaire which considers frequency and duration of both household and recreation physical activities. Higher scores indicate higher activity levels (Gill et al. 2008).
[b] The Mediterranean Diet Adherence Screener (MEDAS) is scored out of 14. It was developed as a screening tool to assess adherence to a Mediterranean-type diet. The higher the score the better adherence (Schroder et al. 2011).
** n=4 for these measures

Table 4.13 Lifestyle Features of Case 3 Study Participants

Social and Socio-Economic Participant Features

Social network size and density was measured by the Lubben Social Network Scale (LSNS-6) and perceived support was measured using the Multiple Scale of Perceived Social Support (MSPSS). The scores from the Lubben Social Network Scale (LSNS-6) indicated that one individual would be at risk of social isolation (score $\leq$ 11). However, this participant was found to have moderate perceived support with a score of 4.8 on the MSPSS. See Table 4.14 for a summary of the social and socio-economic features.

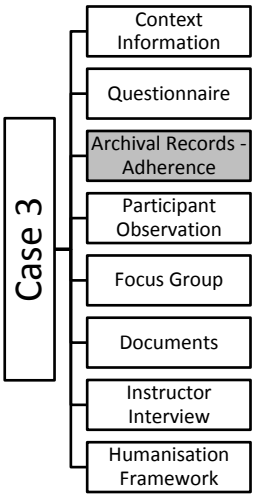
In terms of participants neighbourhood SES in Case 3, the median Index of Multiple Deprivation (IMD) was 11859 (IQR 7524) which indicated that participants were closer towards the more deprived English neighbourhoods. Individual SES found that all participants were currently retired and had completed secondary school, attained trade / technical / vocational, or university level qualifications.

Variables	Case 3 (n=8)
Social Network LSNS-6 [a], Median (IQR)	17.5 (8)
Socially Isolated Based on LSNS-6[a], n	1
Perceived Social Support, MSPSS[b], Median (IQR)	6.5 (1.6)
Neighbourhood Socio-Economic Status (IMD), Median (IQR)	11859 (7524)
Highest Education Level, n (%) Some Secondary School Completed Secondary School Trade / Technical / Vocational University	 0 3 (37.5) 3 (37.5) 2 (25)
Employment, n (%) Full-time Part-time Retired	 0 0 8 (100)

[a] Lubben Social Network Scale (LSNS-6) scores range from 0-30. Score ≤11 indicates risk of social isolation.
[b]Multiple Scale of Perceived Social Support (MSPSS) is a 12-item scale measuring perceived availability of support from family, friends and significant other. Low support: 1-2.9, moderate support: 3-5, high support: 5.1-7.

Table 4.14 Socio-Economic Features of Case 3 Study Participants

4.3.3. Archival Records: Adherence Rate Case 3



The archival records of attendance provided by the instructor were used to assess adherence for Case 1. Adherence data is reported as programme and individual participant adherence rates (see Section 4.1.3 for details on this was calculated).

Programme Adherence Rate Case 3

Case 3 had a programme adherence rate of 77.8%.

Individual Adherence Rate Case 3

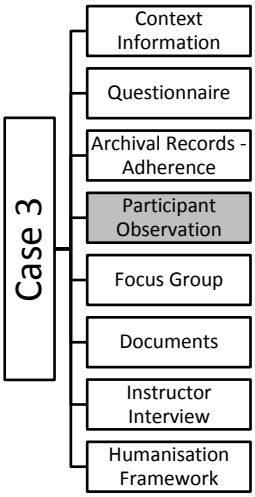
The individual participant adherence rates are displayed in Table 4.15. The median individual adherence rate for the participants who consented to be involved in this study was 73.5% (IQR 39.0).

Participant Identification Number	**Participant Gender and Age**	**Length of Attendance, Months[a]**	**Adherence Rate, %*[b]**
Case3-P1	Male, 71 years	54	91.2
Case3-P2	Female, 72 years	57	94.1
Case3-P3	Female, 68 years	54	32.3
Case3-P4	Female, 77 years	49	100
Case3-P5	Female, 66 years	57	52.9
Case3-P6	Female, 68 years	42	58.8
Case3-P7	Female, 69 years	42	64.7
Case3-P8	Female, 66 years	57	82.3
Median (IQR)		**54.0 (13.3)**	**73.5 (39.0)**

* Proportion of attended sessions relative to offered sessions. [a] As recorded up to 30 June 2015.
[b] Based on data available 1/1/14 – 1/1/15

Table 4.15 Participant Age, Length of Attendance, and Adherence Rate Case 3

4.3.4. Participant Observation Findings Case 3



The researcher spent 14 hours as a participant observer with Case 3. Field notes were made directly after each session of participant observation. This generated 24 pages of A5 handwritten field notes. Notes were made on the conversations and interactions the researcher had with the exercise group participants as well as general observations about the CBGEP. These field notes were typed into a Word document and expanded upon at the earliest available opportunity providing 17 pages of double line spaced text. The Word document was imported into QSR

International's NVivo 10 qualitative data analysis software and underwent thematic analysis (see Section 3.9.1).

The results of this thematic analysis led to the development of four themes and one sub-theme related to participant adherence to the CBGEP (Figure 4.14). These are discussed below.

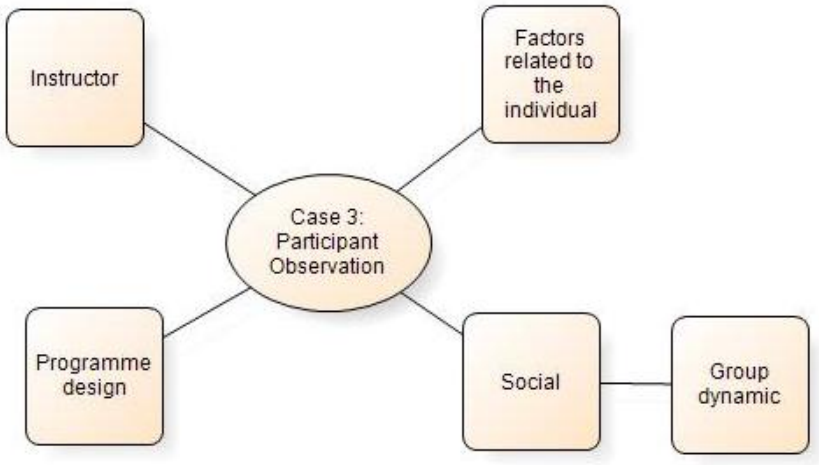


Figure 4.14 Case 3 Participant Observation Themes Related to Adherence

Factors Related to the Individual

This theme called 'factors related to the individual' refers to the many individual or personal reasons and experiences observed in relation to CBGEP adherence. For example, some participants self-reported leading physically active lives. As such, this CBGEP was only one of many things they were involved in. Others had not always been active so this type of CBGEP was new for them.

Participants commented on the various motivators which supported them in continuing to exercise. Participants expressed a desire to lose weight, stay active or to keep independent and healthy as they aged.

> *"During the circuit I teamed up with a lady who had been coming for 3 years. Normally comes with her neighbour but she couldn't make it this week. Said she comes because she saw her mother suffer terribly with arthritis and realised that if she didn't start doing something to stay active she could end up the same (already has a bit of arthritis in her toes). She has noticed a big improvement in herself over the years of coming here."* (Field notes, Case 1)

For participants who acted in the role of main carers for their partners, the CBGEP was seen as *"my little bit of me time"* (Field notes, Case 3) when they did not have to function in their caring role. Those who were carers also understood the importance of remaining fit and well so they could continue in those caring roles. Participants who lived alone commented on the simple fact that the CBGEP served as a reason for them to leave their homes which was an important motivator.

Instructor

This theme refers to the role of the instructor in CBGEP adherence. Participants expressed appreciation of the instructor's individual care and concern as well as her awareness of their current or ongoing health problems. This was perceived as being important since this knowledge about their individual needs meant that the instructor could personalise the exercises.

The instructor was observed to be enthusiastic, encouraging towards participants, and had a fun-loving personality. The choreographed warm up was observed to be regularly accompanied by an entertaining commentary whereby the instructor shared stories about her week. This frequently resulted in feedback and banter between participants and instructor which led to the whole group laughing.

> *"The instructor added more coordination exercises with warm up today which made it a bit harder (left, right, then double arm). This made lots of people laugh because they couldn't do it. She said if it's too hard don't worry but as a participant observer it was really fun to be a part of and watch the banter back and forth. No one seemed to be bothered or upset that they couldn't quite get it at first and no one seemed to judge each other. It didn't seem competitive at all."* (Field notes, Case 3)

The instructor was observed to be more concerned with participant safety and being inclusive with exercises rather than pushing participants beyond their comfort level. The instructor was seen to have a discrete manner when monitoring how participants were managing the exercises at the circuit stations. She easily adapted the exercises where necessary so that everyone could participate no matter what their ability. The instructor was mindful to finish the programme on time due to the restricted one hour parking limitations to avoid participants getting a parking ticket.

Programme Design

Programme design refers to the structured features of the CBGEP which were observed to be important in participant adherence. The circuit stations were observed to be structured in such a way that they were flexible enough to be personalised for each participant. This was seen to allow participants to work at their own pace and within their own physical limits. As such the CBGEP was noted to accommodate a wide range of abilities, from those who remained seated for the exercises to those who were more physically able and worked at a higher exercise intensity. This flexible approach was observed to provide an opportunity for those who wished to exercise but at a lower intensity. For example, during the circuit stations some participants were observed to stop when they had reached their personal level of preferred exertion, rather than what they were physically capable of achieving. Participants also expressed a preference for the fact that this CBGEP did not involve any floor-based exercises.

Health education, advice, and safety were observed to be a structured part of the programme. The instructor was mindful to give clear instructors for each exercise, warning participants to stop if an exercise caused pain. Easier variations of the exercises were offered if participants were struggling. The CBGEP was observed to finish each week with full stretches to minimise the risk of injury. In addition, the CBGEP was not structured in a competitive way. It was observed to be more important that participants were able to exercise in a safe, non-judgemental manner rather than be highly competitive with one another.

Participants were observed to wear informal exercise attire. Some participants chose to wear leggings or tracksuits while others opted for slacks or jeans. Footwear was equally informal with a range of trainers and slip on shoes. Several participants commented in informal conversations that they appreciated the location of the CBGEP. This was seen to be convenient in that it was either walking distance, on the bus route or a short drive.

Social

The social theme refers to the social element of the CBGEP which was observed to be important in aiding participant adherence. Group dynamic is noted as a sub-theme of the broader social aspects of the programme.

The circuit stations were noted to be the most social time of the CBGEP where participants would most often exercise in pairs. For some, the circuits appeared to be predominantly a social time with the exercise component being almost incidental. For others, particularly those who were more competitive, the circuit was an opportunity to work at a higher exercise intensity and challenge themselves either personally or with their exercise partner.

Whilst the group was observed to be inclusive in nature, with only a few occasions where participants had to carry out the circuit stations alone, it was also apparent that once people had found a pair, they tended to exercise with that same person every week. Several participants commented that new friendships had been formed as a result of attendance at the CBGEP. These new friendships often went beyond the boundaries of the CBGEP when participants would attend other activities outside the CBGEP together such as quiz nights at the community centre.

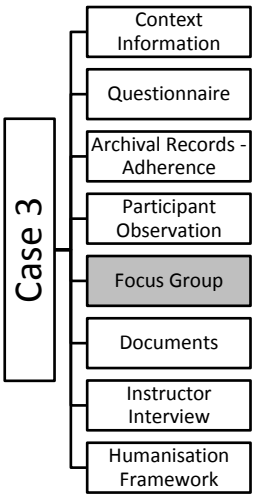
Group Dynamics

The group dynamic was noted as a sub-theme to the social aspects of Case 3. Group dynamic describes the way participants interacted and developed as a group. As with the previous cases, the group dynamic could also have been situated under programme design. However, it was included under social to reflect the complex interaction between the participants.

There was a clear preference expressed by participants for exercising together in a group rather than a gym exercise environment. This group environment was observed as being highly inclusive with evidence of a care and concern for one another. For example, on one occasion, a female participant had fallen in the high street and had facial bruising as a result. Other participants were observed to be genuinely concerned to understand the details of what had happened and offered support.

The group dynamic was also observed to lead to the fun, entertaining nature of the exercise environment. Almost weekly there was laughter and banter between the participants and instructor. This created a highly positive exercise atmosphere which seemed to add to participant and instructor enjoyment.

4.3.5. Focus Group Findings Case 3



In Case 3, a single focus group lasting 37 minutes was conducted with four participants. The audio recording of the focus group was transcribed and generated 28 pages of double line spaced text in Word. The Word documents were imported into QSR International's NVivo 10 qualitative data analysis software where they underwent thematic analysis (see Section 3.9.1).

Thematic analysis led to the development of five themes and two sub-themes related to participant adherence to the CBGEP (Figure 4.15). These are reported below.

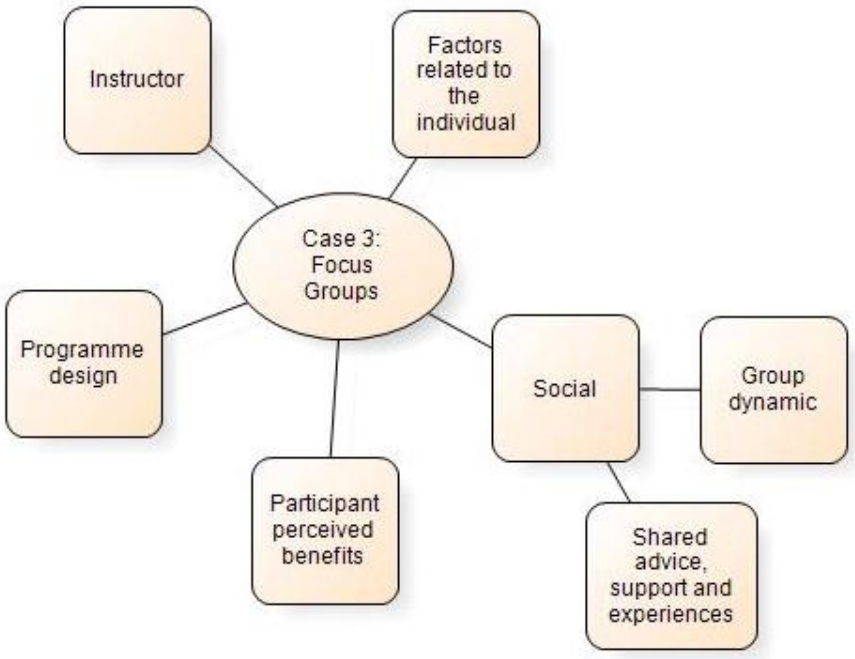


Figure 4.15 Case 3 Focus Group Themes Related to Adherence

Factors Related to the Individual

This theme is defined by aspects of adherence which appeared to be more related to the individual participants exercise history, physical ability, preferences, personality, and motivations.

Participants expressed having had a generally active lifestyle. This included attendance at various group exercise classes such as Tai chi, aerobics or water based exercise classes. However, one participant commented that these traditional classes were too difficult to manage physically due to chronic health problems. The CBGEP in Case 3 was a helpful alternative since the tailored nature of the programme took account of participants' individual health challenges and physical ability.

Participants expressed an individual preference for the friendly, social, group nature of this exercise programme over a gym environment. Gyms were viewed as *"intimidating"* (Female, 68 years) and from a physical point of view the equipment was difficult to manage due to health limitations. Participants also had a preference for the use of music as they exercised and appreciated the fact that it was changed regularly *"so you don't get bored with the same"* (Female, 77 years). A preference for establishing a personal exercise routine with the regular time of the CBGEP each week on a Tuesday was also helpful.

Individual personalities varied with regards to their personal level of competitiveness. The male participant expressed being more competitive than the females in this focus group. However, the design of the CBGEP was structured in such a way as to account for the varying levels of competitive personality (see programme design).

Participants expressed an appreciation for the importance of being able to make an autonomous choice about being physically active rather than having to follow the instructions of a doctor. Regular attendance was seen as *"a good thing to do"* (Male, 71 years).

Participants expressed personal motivations which appeared to drive their ongoing adherence. These motivations were predominantly rooted in a desire to maintain health, muscle strength, balance, mobility, and independence. In many ways maintaining independence was seen as vital because *"that's the whole game"* (Female, 72 years). There seemed to be a fear of losing independence, especially

for those who lived alone and was thus a key motivator. Participants recognised that the more active they were, the longer they would be able to maintain their independence in daily life.

The social versus exercise drivers were noted to serve as different motivations for individuals. For example:

> *"I think to be fair some people do exercise more than they chat and others chat more than they exercise. But then you're going to get that in a group aren't you, because everybody's there for different reasons, aren't they."* (Female, 77 years)

Instructor

This theme is defined as the role in which the instructor played in participant adherence. Participants noted that the instructor was vital in supporting adherence and was referred to as *"the lynchpin"* (Female, 72 years). The instructor was recognised as having a clear understanding of their individual physical limitations and so was able to adapt exercises accordingly. This personalised approach was highly valued and helped encourage participants to work to their own abilities.

> *"…the other thing we benefit from is her* [the instructor's] *empathy. And that's very evident all the time to me. She notices all kinds of things, that you may not think that she's picked up, but she does and it will come back to you."* (Female, 72 years)

The instructor was seen as having a high level of professional knowledge and expertise. Her ongoing learning was seen as something they all benefited from because she passed on her knowledge to participants. There was also some flexibility with the way the instructor managed the CBGEP such that if a participant missed their regular class they could attend one of her other classes at no extra cost.

Programme Design

This theme related to the more practical elements of the way in which the programme was designed and how this supported participant adherence. This included aspects of location, cost, music, safety standards, a varied routine, and the way the programme accounted for personality differences in competitiveness.

The location of the CBGEP was seen as being convenient and not far for participants to travel. Participants felt that the cost of the CBGEP was reasonable. The recently introduced money back incentive (whereby participants are given money back when they pay for the six week block if the instructor has met her financial needs) was appreciated. Alternatively, the pay as you go option was beneficial for those with more health challenges who are unable to attend every session.

The way the programme was designed to account for both competitive and non-competitive personality types was appreciated. For the less competitive there was a freedom to exercise in a non-judgemental way where they worked to their own ability. Those who were more competitive had the opportunity to push themselves in the circuit section, either with their own personal targets or with a similarly competitive partner. This was seen as being particularly important for the men who preferred a level of competition.

> *"I think it's nice that everybody is encouraged to work at their limit because I think that suits you* [her husband] *doesn't it* [agreement from husband]. *And will suit other men because I think men in general maybe are more competitive and if that element wasn't there I think you'd be bored* [agreement from husband]." (Female, 72 years)

Other helpful programme design features included the fact that the routine was changed regularly which kept it interesting, and the music was enjoyable. The way the CBGEP adhered to high safety standards with the instructor being mindful of minimising the risk of injury was also important.

Social

This theme refers to the social aspects of the CBGEP which appeared to support participant adherence. Two sub-themes were noted: shared advice, support and experiences, and group dynamic.

The sociability of the CBGEP was appreciated and appeared to support adherence in a variety of ways. The CBGEP was seen as being friendly and offered the opportunity to get to know a different group of people. This was especially important for those who lived alone.

> *"I come out every week and meet the people, you get to know a different group of people. It's enjoyable. It's another circle of friends you can say hello to when you're out."* (Female, 68 years)

Despite the friendly, social nature of the CBGEP participants did not necessarily know everyone in the group well. In fact participants commented that they did not know everyone's names. However, they knew one another by sight and enjoyed talking when they saw each other around town

> *"You can say hello to them when we're out and have a quick chat but go away thinking 'what was her name?'"* (Female, 68 years).

Shared Advice, Support and Experiences

Shared advice, support and experiences were noted as a sub-theme to the social aspects of Case 3. It was the sociability of the CBGEP which seemed to overflow into the shared advice, support, and experiences. This was evident even within the dynamics of the focus group. In this instance support was offered, and advice and experiences were shared regarding the difficulties of managing long-term health conditions or medications. The support aspect of the CBGEP was expressed as participants became more familiar with one another:

> *"It is sociable. And supportive. And I think the support is quite important as well. People begin to know who you are, they remember your little foibles, your particular troubles. If they see you're, you know, not taking part as much as usual, they're asking about you and finding out what's happened. And if you're away, "oh where have you been" and all the rest of it… You feel that these people know you and are involved in your life and you're involved in theirs."* (Female, 72 years)

Group Dynamic

Group dynamic was noted as a sub-theme to the social aspects of Case 3. Group dynamic describes the way participants interacted and developed as a group and how this impacted on their adherence.

Participants felt that exercising in a group was easier than exercising alone at home. This was partly due to being away from the distractions of home, establishing an exercise routine, and exerting themselves more when exercising in a group. The

notion of being together as a group also helped create a positive exercise environment:

> *"…I think the extra bit is being with a whole group of other people who are similarly being aided in some shape or form. It's a sort of group feel as well. Being together, yes, I think this is a different kind of feel better because you're in a group together enjoying it."* (Female, 72 years)

Interestingly, on the odd occasions when participants had attended one of the other classes held by the same instructor it was not as enjoyable. They commented that: *"Whether it was because I didn't know the people, I don't know, I just didn't feel as comfortable"* (Female, 77 years). Therefore the group dynamic and familiarity with their regular CBGEP appeared to impact on adherence.

Participant Perceived Benefits

This theme relates to the participant perceived benefits which were articulated by participants in supporting ongoing adherence. Participants noted benefits of improved sleep and more energy. The CBGEP also acted as a mood lifter:

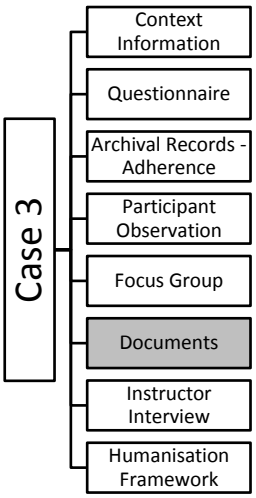
> *"Yes, I think invigorated is a good word. Both invigorated and enthusiastic towards the rest of the day. It lifts, if I'm in a low mood it lifts my mood definitely."* (Female, 77 years)

The enjoyment experienced by participants in the CBGEP was a further reason they adhered because it was fun and *"you have a laugh"* (Female, 77 years).

> *"But I think it must be enjoyable because we wouldn't come if it wasn't would we? We wouldn't come just to keep fit would we really?...And we do pay therefore you're not going to pay to be unhappy."* (Male, 71 years)

Participants also perceived benefits in terms of the exercise serving to help them maintain an independent lifestyle as they aged (see individual – motivation above for more on this aspect).

4.3.6. Documentation Findings Case 3



The principal source of data for documentary analysis was the programme's website. This contained information about the instructor's background, programmes dates, times and locations, frequently asked questions, participant comments, and booking information. Documentation was also drawn from the instructor compiled leaflets and blank feedback forms which she distributed at the CBGEP.

For the purposes of this analysis, text as it related to the CBGEP was copied and pasted into a Word document and imported into QSR International's NVivo 10 qualitative data analysis software where it underwent thematic analysis (Braun and Clark 2006).

Documentary analysis highlighted aspects of the instructor, programme design, and participant perceived benefits which support adherence to the CBGEP (Figure 4.16). These are presented below.

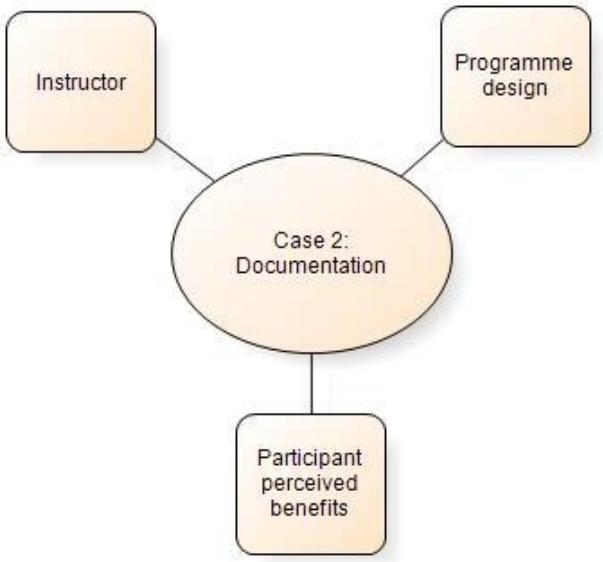


Figure 4.16 Case 3 Documentation Themes Related to Adherence

Instructor

This theme relates to aspects of the instructor which supported participant adherence. Most notable were the way that the documentation explicitly reported on the instructor's commitment to safety and the way she listened and responded to participant feedback. The instructor also specifically highlighted the way she offered adaptations of the exercises based on individual ability and the way she tried to keep the exercises fun to encourage ongoing engagement.

Programme design

This theme references aspects of the way in which the programme was designed to encourage participant adherence. This included the exercise adaptation based on ability, safety, participant feedback, education, and information sharing.

The fact that the programme was intentionally designed to accommodate a range of ages and abilities was highlighted as a key feature of the programme design. This explicitly emphasised the inclusion of men in the programme. Safety was clearly stated as a priority and those with medical conditions were encouraged to seek medical advice before attending. Opportunities for participants to feedback anonymously about their experience of the class were provided at the end of each term. This specifically enquired about the choice of music and exercise intensity. Changes would be made to the programme based on this participant feedback thus encouraging ongoing adherence.

Education and information sharing was a feature of programme design. This was evident in the leaflets provided at each session. The instructor would leave photocopies of articles which she thought might be helpful for participants. The articles varied widely from gentle home exercises to nutrition guidance. The programme website also contained a frequently asked questions information section. This provided details about the importance of exercise type, frequency, intensity, and duration as well as general advice about stretching. Thus, aspects of education and information sharing were used to help participants broaden their understanding of exercise and health.

Participant Perceived Benefits

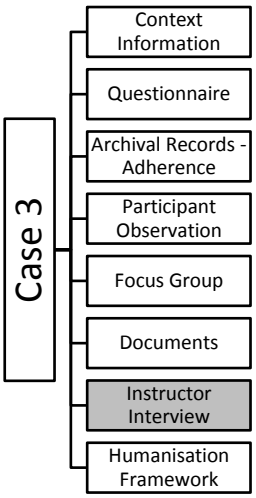
This theme refers to the references made on the website through included quotes by participants regarding their perceived benefits which were realised through ongoing adherence. These were predominantly physical improvements which overflowed into functional gains. For example, an increase in muscle strength which made it possible to mow the lawn, being able to climb the stairs without being short of breath and increased flexibility.

> *"I felt really puffed out coming up those stairs on the first week. After three weeks I can climb the stairs with no puffing!"* (Female, website reference, accessed 30 September 2015)

Some exercises were not viewed as enjoyable and participants did not always feel like exercising yet they still experienced perceived benefits:

> *"It's two years since I started the class with you – it's been excellent, don't always feel in the mood but very beneficial and worth every penny."* (Female, website reference, accessed 30 September 2015)

4.3.7. Instructor Interview Findings Case 3



A semi-structured interview was carried out with the programme instructor of Case 3 in order to ascertain her perspective on participant adherence. The interview was audio recorded and was 19 minutes in length. When transcribed the interview generated 10 pages of double lined spaced text in Word. The Word document was imported into QSR International's NVivo 10 qualitative data analysis software where it underwent thematic analysis (Braun and Clark 2006). Background information on the instructor and the findings from the thematic analysis of the instructor interview are presented in this section.

The instructor was in her early 50s and had been leading exercise programmes for older people since January 2008 and held Level 2 training qualifications.

Findings from the interview analysis provided further depth of understanding from the perspective of the instructor and highlighted three themes: divergence in participant motivations, programme design, and the role of the instructor (Figure 4.17). These are reported on below.

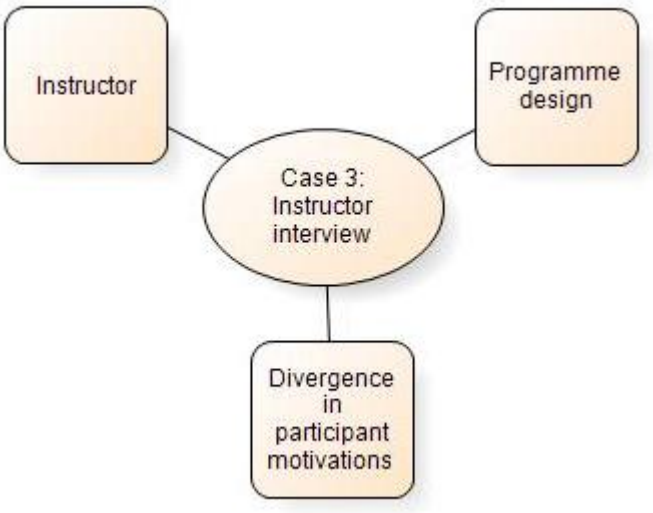


Figure 4.17 Case 3 Themes Related to Adherence from the Perspective of the Instructor

Instructor

This theme relates to the role of the instructor and the features of her attitude, personality and motivation which may influence participant adherence to this CBGEP.

The instructor reported a change in her attitude of how she perceived participants over the years of her career as an exercise instructor. The initial adrenaline thrill of performing a well-choreographed routine, and the early nerves have now been replaced by a more maternalistic view of wanting to see participants physically improve.

> *"I used to get quite an adrenaline buzz as well, and I mean that's kind of been overtaken now because I have a much more maternalistic view of my clientele now. I don't want to beast them to death. I want them to get stronger, better balance, so my emphasis on exercise now is much different..."* (Instructor, Case 3)

This change in attitude was in part attributed to the instructor's personal experience of her own ageing process. She had also improved her understanding of the need for specific strength and balance exercises. However, her love of the CBGEP was an ongoing key motivator.

The instructor felt her genuine interest in participants and her sense of humour in making CBGEP fun helped participants adhere. She also recognised the fact that she was older herself so could appreciate the challenges of an ageing body.

From the perspective of the instructor, the social aspect of the CBGEP was important for her personally. She expressed a love of people. She enjoyed hearing their life stories and finding out the details of their lives, such as when they have new grandchildren. This was not thought of as a 'sales pitch' but as a genuine love and concern for people.

Divergence in Participant Motivations

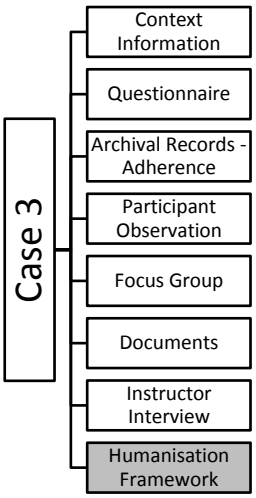
The instructor noted a divergence in programme objectives or motivators for why people initiate and then go on to adhere. The instructor felt this was divided into those who sought the exercise aspect as the priority or those who were more motivated by the social aspect.

> *"I think some people come initially because it's a social thing and then they realise actually this is doing me some good. Or there are the ones who are "I need to do this because I've got to stay fit and healthy" and then the social thing is kind of an add on. So I think it's either I've got to look after myself, or I want a social thing."* (Instructor, Case 3)

Programme Design

This theme refers to the way in which the instructor had designed the programme with a view to helping participants adhere. This is predominantly related to the incentive booking scheme which was introduced as a means to aid adherence. The instructor noticed that attendance numbers were beginning to decrease. She felt that encouraging participants to book for the block of sessions gave them a financial commitment which meant they were more likely to adhere. This in turn would hopefully help participants realise greater physical gains. The instructor has found that being able to give participants a small amount of money back each term once she had met her financial commitments was an encouragement for participants to keep booking. Additionally, the instructor offered some flexibility in that participants who book have the option of attending one of her exercise classes at an alternative venue if they are unable to attend their regular CBGEP.

4.3.8. Application of the Humanisation Framework Case 3



As with Case 1 and 2, Case 3 similarly had evidence of the humanising dimensions of the humanisation framework (Todres et al. 2009). This section therefore reports on the results of a depth phase of deductive analysis whereby the data from each of the qualitative methods was analysed using the humanisation framework. Findings are reported under each of the eight humanising dimensions. A brief definition is repeated at the beginning of each dimension. See Chapter 3, Table 3.3 for a table highlighting the dimensions.

Agency

The dimension of agency is closely linked to the dignity and freedom we have as humans to make decisions and be responsible for the outcomes of those decisions (Todres et al. 2009).

There was evidence of participant agency being present within Case 3. The role of choice was explicitly stated as being a highly valued asset for some participants. Making their own decision to stay active rather than being told to stay active by a healthcare practitioner was important. Participants had taken decisive action and chosen to attend this programme for their own individual reasons, be that hip pain, reduced mobility or a desire to stay fit after cardiac surgery. Importantly, the desire to maintain independence was a key motivator in adherence. For participants with more complex health problems, maintaining independence was something they felt they actively had to fight for and the CBGEP facilitated this.

> *"But it's something I'm used to* [effects of long-term medication and their side effects] *but it's something I've got to fight. This is why, one of the other reasons I come here, to keep moving."* (Female, 68 years)

The way the programme was designed added to participants freedom to choose: the option of going to another class run by the instructor if they were unable to attend their regular group; the choice in how participants paid for the CBGEP; the opportunity to give anonymous feedback; the way the CBGEP was tailored to their individual abilities; and the freedom to push themselves depending upon their ability within the circuits were all important. The instructor also sought to equip participants with the information they would need to make their own informed exercise choices. For example, how to exercise safely, advice about exercise type, intensity, stretching, or how to lose weight. Thus, the humanising dimension of agency appeared to play a role in supporting adherence.

Embodiment

Embodiment relates to how we live within the fragile limits of being human; with the experiences of pain, excitement, hunger, vitality, fatigue, etc. When we are not overly concerned with these experiences, our embodiment supports us in moving out into the world (Todres et al. 2009).

Embodiment was noted in Case 3 in that whilst some participants may have had individual health problems they were not treated like a disease or excluded from involvement because of these challenges. Rather they were able to engage in the CBGEP in their own particular way because the instructor adapted the exercises. Thus, participants could work within their personal limitations and not be hindered. In this way the whole person was considered. There was permission to be their embodied selves:

> *"You do what you can do and you don't really worry about what anybody else in the class is doing. You just do to your ability…."* (Female, 77 years)

The instructor was seen as someone who showed great empathy. She sought to understand participants as a whole person. Therefore, despite some of the physical challenges of living within an ageing body, the instructor supported participants to gain or maintain fitness so that they could continue engaging in the world.

The social acquaintances participants made with one another through the CBGEP appeared to add meaningful, embodied connections to their lives. Even if they did not know everyone's names they would often stop and talk when they saw each other in town and this was appreciated.

The inclusive, adaptive nature of the CBGEP allowed participants to be their embodied selves with the added social connections providing meaningful engagement with others. The instructor also supported the humanised dimension of embodiment through her empathy.

Insiderness

Insiderness refers to the understanding that as humans we carry a view of living life from the inside out and that we alone are the authors of that inward sense (Todres et al. 2009).

Insiderness was evident in Case 3 in the way that the instructor was empathetic and sought to understand participants on the inside, such as the challenges of reduced mobility, pain, or the fear of losing independence. The fact that the instructor was in her 50's meant she was personally aware of some of the challenges of an ageing body. She seemed to draw on that insider experience and this added to her empathy and sincerity.

The instructor knew participants well enough to be able to tell when they were not feeling their best and adapted the exercises accordingly. Thus, participants were not expected to fit into a rigid exercise system. Rather they were understood as being people who may have some insider challenges but still wish to keep active.

> "…*I've tried to join different groups and I was told, 'oh no, you've got to stand up, you've got to do it all the time'. And that was impossible for me. Whereas I do the majority of the exercises but they are adapted to my level and what I can do so, you know, I can still move which is brilliant."* (Female, 68 years)

There was an understanding that everyone is different on the inside with different personalities. This was especially evident in the aspect of personal competitiveness. For example, some participants were competitive either with themselves or with their exercise peers. There was room for these differences within the programme, especially during the circuit section when participants could self-select their level of competition.

Insiderness was an important humanising dimension of Case 3 in that the instructor demonstrated empathy with participants and sought to understand their insider

experiences. Participants also understood the varied insider responses and this supported a non-judgemental exercise environment.

Personal Journey

Being human involves being on a journey and any present moment needs to be understood in the context of before and next on a continuum (Todres et al. 2009).

For some participants keeping active had always been part of their personal journey. This CBGEP was therefore the continuation of that physical activity journey in their retirement years. For others, there was recognition that to continue on their personal journey in the way they wanted (such as maintaining independence) meant they had to make some changes. This included regular attendance at an exercise class. This CBGEP thus became part of the rhythm of their week and their continued journey.

Meeting new people through adherence to the CBGEP meant that others intersected on participants' life journey. Thus, their social world was expanded to include another circle of friends.

> *"Yes and I come out every week and meet the people you get to know a different group of people. It's enjoyable. It's another circle of friends you can say hello to when you're out."* (Female, 68 years)

> *"You feel that these people know you and are involved in your life and you're involved in theirs."* (Female, 72 years)

Personal journey as a humanising aspect of CBGEP adherence was important in Case 3. As participants and instructor got to know each other, they understood one another's lives in the context of the before and next. This meant they were not just a body in an exercise class but a human with a story which continued to be told. This life journey and story appeared to be richer for the new social connections made through the CBGEP.

Sense Making

As humans we care about meaning and have a desire to make sense of events and experiences. This involves bringing aspects of our lives together (Galvin and Todres

2013). Sense making looks for "*Gestalt* and patterns that connect" (Todres et al. 2009, p. 72).

Sense making was evident in Case 3 through the opportunities within the CBGEP for participants to share some of the frustrations of their health challenges with each other. This appeared to help them make sense of those challenges. This also served as an encouragement to keep pushing forwards with the challenges of life. The supportive environment helped participants make sense of their lives.

> *"And I think the support is quite important as well. People begin to know who you are, they remember your little foibles, your particular troubles. If they see you're, you know, not taking part as much as usual they're asking about you and finding out what's happened."* (Female, 72 years)

Thus, the humanising aspect of sense making helped participants better understand what was happening in their lives, particularly through the added dimension of understanding the challenges of others.

Sense of Place

Sense of place refers to the way that as humans we come from a particular place which is more than just a physical environment; it is a place which generates the feeling of 'at-homeness', security, comfort and belonging (Todres et al. 2009).

The way the exercise programme was adapted and tailored towards participants' individual needs appeared to help participants find their sense of place within the group. For example, one female participant was unable to stand for the exercises and instead did an adapted programme of exercise in a seated position. The other participants would stop and chat to her as they rotated around the circuits. Thus, despite her challenging physical circumstances her sense of place within the group was not lost.

> *"I suppose I'm lucky like that, that everyone stops and has a little chat with me as they're going by and doing the exercises. So I seem to chat to the majority of people."* (Female, 68 years)

Exercising together as a group appeared to add a sense of security since it generated a feeling of group belonging. This was expressed as being unique in this CBGEP since some participants had tried other exercise programmes yet had not

felt as comfortable or at home within the group.

A routine was observed within the CBGEP such that participants tended to exercise in the same circuit pairs each week. Some of these were natural friendships from old acquaintances; others were formed from new friendships within the CBGEP. These friendships appeared to support participants' sense of place within the group.

Thus, through the CBGEP, participants found a sense of place in the group. This was expressed in a sense of security and belongingness within the group; participants felt at home within the CBGEP.

Togetherness

Togetherness relates to the understanding that as humans, an individual's uniqueness is only able to exist in relation to others, in belonging and community. It is togetherness which helps us experience empathy in which we can understand the challenges of the other (Todres et al. 2009).

Togetherness was noted in Case 3 in the way that exercises were adapted thus making the programme highly inclusive for people with a range of physical abilities. This added to the togetherness of the group dynamic since all participants were included. Furthermore, exercising together in a group appeared to add to the sense of enjoyment and laughter participants experienced during the programme. It was this group togetherness that was commented upon as being part of the mood lifter.

> *"…arguably you could say any exercise or just walking would lift your mood but I think the extra bit is being with a whole group of other people who are similarly being aided in some shape or form. It's a sort of group feel as well. Being together, yes. Because I mean we often go walking, we walk a lot and we always have, and I mean that's good, and you know we usually walk either by the sea or down the woods so that's pleasant, and we feel better, but I think this is a different kind of feel better, because you're in a group together enjoying it."* (Female, 72 years)

Exercising with other people was seen by participants as being important. This added an incentive to exercise that was not present if they attempted to exercise alone at home when participants were more likely to succumb to household distractions. However, on occasions the social distraction sometimes hindered the

exercise as one wife chided her husband:

> *"Yeah, well, there was one session where you were supposed to be doing push-ups and neither of you did a single push-up!"* (Female, 72 years)

The humanising dimension of togetherness was an important aspect which appeared to support participant adherence. Being together as a group was a motivator and added a sense of enjoyment and fun which was not found if they exercised alone.

Uniqueness

A person's individuality is unique in space and time and cannot be reduced to a descriptive, definitive list of their personality and character. A person will always be more than the sum of their parts and the words used to try and describe their parts (Todres et al. 2009).

Participants were recognised as being unique. This was noted in the way exercises were adapted and tailored to participant ability and in the way that participants were noticed and supported by their peers and the instructor. There was a freedom for participants to exercise within their own unique limits and not feel pressured by others.

> *"…I've been to lots of keep fit groups and it is just, you just follow whatever they do and do it obviously to the best of your ability, but with* [instructor's name] *she watches and sees what you can do and she'll say 'oh, while we do this, you do something a bit different'."* (Female, 77 years)

The CBGEP was also able to accommodate the more competitive personalities who wished to exert themselves more physically, again recognising participant uniqueness.

The uniqueness of the individual participants was realised in this CBGEP. The exercises were personally adapted and they were able to exercise within their personal boundaries or competitive manner without judgement.

Summary of the Application of the Humanisation Framework

The humanisation framework was utilised in Case 3 to seek to understand the deeper meaning of the humanising perspective of physical activity adherence. Case 3 demonstrated evidence of humanising elements in the CBGEP. Several aspects of programme design added to participants' agency and the freedom of choice. For example, opportunities to give feedback to the instructor, the individually tailored exercises, and the range of payment options were all expressions of agency. Some participants were noted to experience personal health challenges. However, these insider challenges did not hinder their exercise involvement because of the way the instructor adapted the programme to support individuals. Thus, participants were able to engage in their own unique way. The opportunity to socialise and talk during the circuit stations helped participants share the frustrations of their health concerns which appeared to help them make sense of some of their personal challenges. Exercising together as a group appeared to help participants find their sense of place thus contributing to a sense of togetherness and belonging. These humanising dimensions appeared to work together to create a highly humanised exercise environment which supported participant adherence.

Summary of Case 3 Findings

This section reported on the findings from Case 3. A description of the CBGEP served to initially set the background of the case with the questionnaire data providing contextual information on the participants who adhered. Qualitative data analysis highlighted some similarities with the themes reported (Table 4.16). The findings from this section will be revisited in Chapter five as part of the explanation building process of understanding older people's adherence to CBGEP.

Method / Theme	Participant Observation	Focus Group	Documentation	Instructor Interview
Factors Related to the Individual	✓	✓		
Instructor	✓	✓	✓	✓
Programme Design	✓	✓	✓	✓
Participant Perceived Benefits		✓	✓	
Social	✓	✓		
Divergence in Participant Motivations				✓

Table 4.16 Main Themes from Case 3 based on each Qualitative Method

4.4. Summary

This chapter has presented the main themes and findings obtained for each data collection method employed in each of the three cases included in this study. The following chapter seeks to bring these findings together by using an explanation building technique in a triangulating fashion. This was carried out in a narrative format by considering each theoretical proposition (as derived from the literature review) in relation to the empirical evidence generated from this current study.

5. Explanation Building of Study Propositions

Introduction

This chapter reports on the findings from the analytic technique of explanation building. Drawing on the findings from the three cases, it seeks to build an explanation of the role each proposition played in adherence to community-based group exercise programmes (CBGEP). Explanation building is a pattern matching technique whose goal is to analyse the data through the process of building an explanation about the case (Yin 2013). Explanation building occurred in a narrative, iterative format. The findings from each case were compared to each theoretical proposition. The propositions were then revised based on the empirical evidence. See Section 3.4.1 for more detail on this analytic technique.

The explanation process in this chapter is presented in a step by step manner as illustrated in Figure 5.1. This was in an effort to stay close to the analytic technique and maintain transparency. This sought to assist the reader in judging for themselves the credibility of the movement from proposition to explanation.

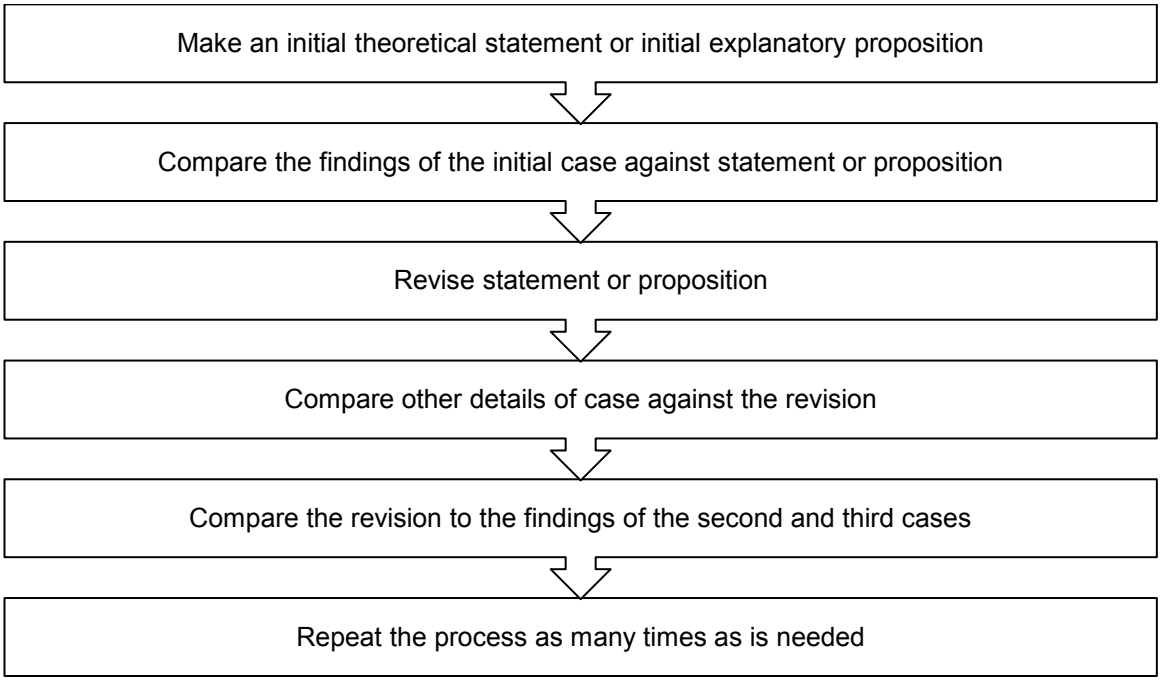


Figure 5.1 Iterative Nature of Explanation Building (Yin 2013)

The evidence for each case is based on the analysis of the data collected from participant observation, focus groups, documents, and instructor interviews. Therefore, the process of explanation building has at its core the principles of

methodological triangulation whereby the data collected from the various methods converged as each proposition was attended to (Yin 2013). See Figure 5.2 for an illustration of how the data converged in a triangulating fashion.

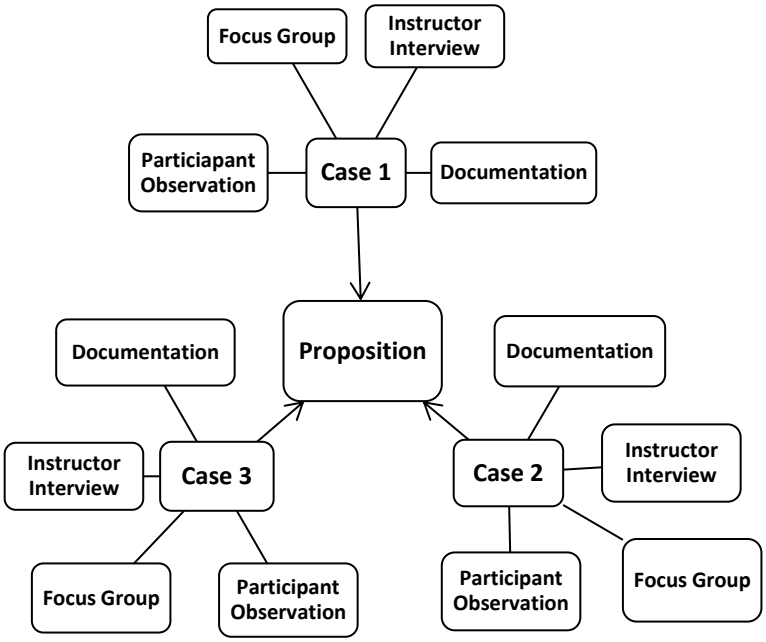


Figure 5.2 Illustration of How the Findings from Each Data Collection Method Converged in a Triangulating Fashion

Propositions Developed in this Current Study

In this current study the following propositions were developed from the literature as possible noteworthy influencers of the good adherence rates in the CBGEP.

1. *Individual behaviour* is noteworthy in influencing participant adherence to community-based group exercise programmes.
2. *Instructor behaviour* is noteworthy in influencing participant adherence to community-based group exercise programmes.
3. *Programme design* is noteworthy in influencing participant adherence to community-based group exercise programmes.
4. *Social connectedness* is noteworthy in supporting participant adherence to community-based group exercise programmes.
5. *Participant perceived benefits* are noteworthy in influencing participant adherence to community-based group exercise programmes.

6. *Energising and empowering effects* are noteworthy in influencing participant adherence to community-based group exercise programmes.

Rival Explanations

Alternative theories for the good adherence rates as based on the literature could have included:

1. Participants were from a high socio-economic status which is known to influence exercise levels and adherence (Cohen et al. 1999; Murray et al. 2012; Picroelli et al. 2014).
2. Participants had already formed exercise habits; therefore their adherence was a continuation of this habit (van Stralen et al. 2009).

The following sections considered each proposition and rival theory in relation to the evidence from this current study.

5.1. Study Proposition One: Individual Behaviour

Evidence from Case 1

Case 1 contained evidence of individual features being important in influencing participant adherence. These included aspects of personal motivation, appreciation of a weekly routine, discipline, non-competitiveness, and their past history of physical activity (PA).

For many participants in Case 1, their motivation appeared to stem from a desire to maintain health. The regular routine of the CBGEP helped them discipline themselves as it became a part of the rhythm of their week. There was a personal discipline for some to work exercises into their daily lives, particularly ones which helped in the self-management of long-term physical conditions such as back or neck pain (see Section 4.1.5).

There were threads of varying levels of intentional exercise or PA across participants' life course. Some had always been active, whereas for others life had been too busy. However, the transition into retirement meant they were afforded more time to allow exercise to feature in their week. Increasing age was noted to add challenges to the physically active life. For example, the challenge of riding a bike as balance deteriorated or having a garden that became progressively difficult to manage meant that these forms of PA had to be abandoned (see Section 4.1.5).

There was a general consensus from female participants that they were not competitive personalities and they enjoyed the fact that they could just switch off and copy the instructor. Male participants mentioned being competitive in the past but their preference for exercise at present was for a non-competitive environment (see Section 4.1.5).

Does the Proposition Need to be Revised Based on the Evidence of Case 1?

Based on Case 1 there was evidence to suggest that participant adherence was influenced by a variety of individual factors. Namely: personal motivation, appreciation of a weekly routine, discipline, non-competitiveness, and participant past history of PA.

Evidence from Case 2:

Case 2 contained evidence of the role of the individual in relation to participant adherence. This included aspects of personal motivators and discipline, particularly in the wake of increasing physical health challenges. The individual health concerns expressed by participants served as personal motivators to continue adhering so that they could remain active as they aged. Some participants had maintained a physically active lifestyle throughout their lives such as being involved in fitness classes. Whereas others were new to exercise and had not exercised since they left school (see Section 4.2.5).

Does the Proposition Need to be Revised Based on the Evidence of Case 2?

Case 2 offers further support for the role in which individual factors and motivators play in aiding adherence. It was noted that not all participants had been physically active across their life course. This will be discussed further under the rival theory of PA history (see Section 5.7.2).

Evidence from Case 3:

Case 3 contained evidence of the role of individual factors in influencing participant adherence. In this case, individual factors included features of participants' personal motivation, their autonomous choice to remain active, and personal circumstances.

Participants were noted to have an intrinsic level of motivation which was predominantly rooted in a desire to maintain health and most importantly maintain independence. There was a fear of losing independence, especially if they lived alone. Having the freedom to make an autonomous choice to stay active, rather

than being told to be active by a health professional was important. Their individual circumstances also served to motivate them, for example, being the main carer for their partner meant they felt they had to keep active so they could continue in that role and the exercise programme offered them some time away from that caring role when they could have time to themselves.

Further individual factors were noted in characteristics such as whether they saw themselves as being competitive or not, their motivation, their personal preference for a non-gym type programme, their personal enjoyment of the music, and their history of having generally had physically active lifestyles. There was also recognition that the social versus exercise drivers varied between individuals (see Sections 4.3.5 and 4.3.7).

Does the Proposition Need to be Revised Based on the Evidence of Case 3?

Case 3 contained evidence of the role of individual participant factors in supporting their ongoing adherence. The intrinsic motivation to maintain independence and the role of their personal circumstances such as being a carer were more explicit in this case. The other aspects of individual factors in relation to adherence such as varied levels of personal competitiveness, preference for a non-gym environment and history of physical activity were common to Case 1 and 2.

Summary of Proposition One: Individual Factors

This proposition is related to the role which individual behaviour played in adherence to CBGEP. However, it may be more appropriate to refer to this proposition as factors related to the individual. This would be a more encompassing term which would account for aspects of individual circumstances such as living alone or being the main carer for a spouse. Specifically, factors related to the individual included aspects of participant personal motivations, personality, preferences for a non-gym environment, present circumstances, and the role PA has played across their lives in contributing to adherence to CBGEP. Based on the evidence from Cases 1, 2 and 3, the proposition was revised to the following:

Revised proposition: *Factors relating to the individual such as aspects of a participants personality, current circumstances, preferences for a non-gym environment, personal motivators and history of physical activity engagement are noteworthy in influencing participant adherence to community-based group exercise programmes.*

The range of factors related to the individual can be seen in a more visual form in Figure 5.3.

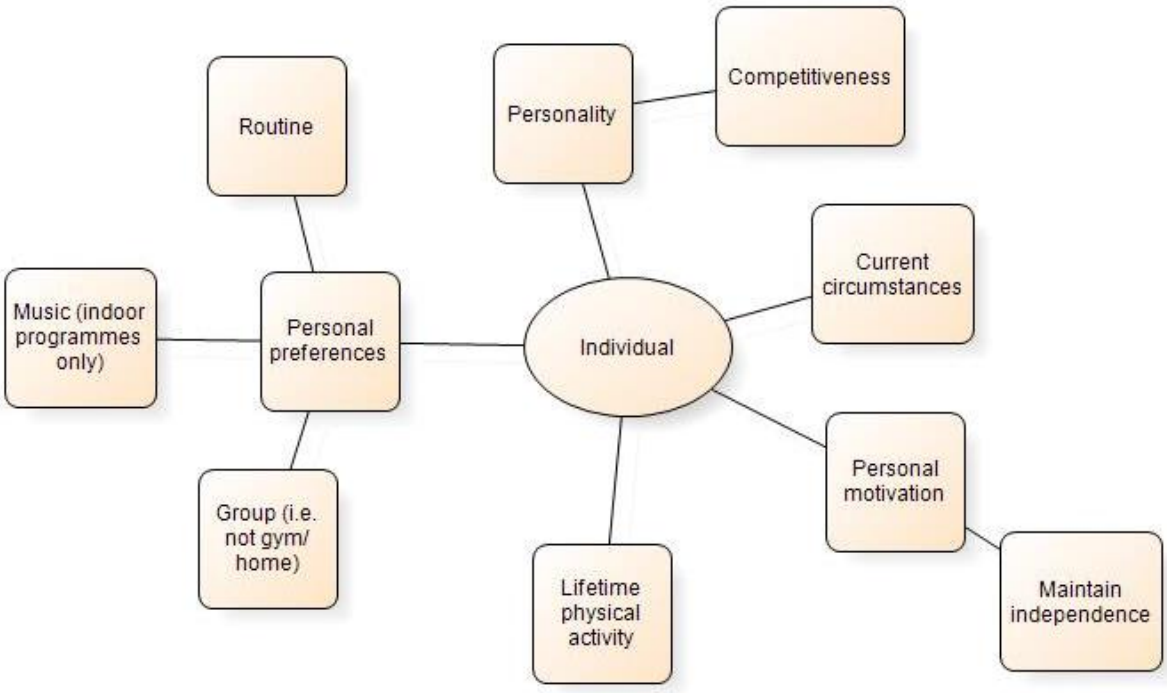


Figure 5.3 The Range of Factors Related to the Individual Noted in Influencing Adherence

5.2. Study Proposition Two: Instructor Behaviour

Evidence from Case 1

Case 1 contained evidence of the instructor being important in influencing participant adherence. This was noted in the trust participants had in the instructor in terms of being knowledgeable, experienced and professional. There was also an appreciation for the informal way the instructor led which made the programme more enjoyable (see Section 4.1.5).

The instructor had a level of rapport with participants such that she was said to provide a feeling of being at home within the group. Her high level of training and standards of instruction and safety were appreciated as were her level of care and concern for participants. Her non-judgemental style helped participants work at their own level and promoted participant self-selection of exercise exertion. Thus, exercise adaptations were suggested to support the varied physical abilities. The choice of music and sense of fun the instructor brought to the group appeared to add participant enjoyment.

Does the Proposition Need to be Revised Based on the Evidence of Case 1?

Case 1 shows support for the proposition of the role of the instructor in aiding participant adherence to CBGEP. This was noted in the instructor's knowledgeable, experienced and professional manner, her leadership, and personality.

Evidence from Case 2:

Participants in Case 2 appeared to find the role of the instructor to be a pivotal component of adherence. The instructor demonstrated a genuine concern in participants' health and wellbeing. This manifested itself in the way she followed up individuals each week regarding their health, and her caring manner. It was also noted in the way she adjusted exercises based on their individual health challenges or physical limitations so that everyone could be included in the programme. Participants viewed the instructor as enthusiastic and approachable. In addition, participants appeared to trust the instructor. This was evidenced in the way they would ask her advice about their various health problems (see Sections 4.2.4 and 4.2.7).

Does the Proposition Need to be Revised Based on the Evidence of Case 2?

Case 2 supports the role of instructors as being important in aiding participant adherence. In addition to the evidence from Case 1, the instructor's awareness, concern and support of participants in regards to their individual health problems was noted as relevant in promoting adherence to the CBGEP.

Evidence from Case 3:

The role of the instructor in Case 3 appeared to be key in participant adherence. Her understanding of their individual physical limitations and her willingness to help participants work within these limits meant that the exercises were adaptable to a wide range of abilities. The instructor empathised with participants and exhibited genuine concern and interest in their lives. Her knowledge and experience were valued, as was her enthusiasm and sense of humour. Her flexibility and fairness with the payment methods was appreciated (see Sections 4.3.5 and 4.3.7).

Does the Proposition Need to be Revised Based on the Evidence of Case 3?

Case 3 demonstrated evidence of the role of the instructor in supporting participant adherence. In addition to Case 1 and 2, participants in Case 3 highlighted their appreciation for the flexible payment methods.

Summary of Proposition Two: Instructor

Proposition two was related to the role of the exercise instructor in influencing adherence. There is clear evidence from all 3 cases that participants found the instructor to be an essential element in aiding their ongoing adherence. However, rather than instructor behaviour it would be more appropriate to simply refer to this proposition as instructor. This would reflect the comprehensive role the instructor played not just in their behaviour but also their ability to adapt exercises, personality, and concern for participant safety in contributing to exercise adherence. Thus, whilst the proposition was entitled 'instructor', it was expanded to be more explicit about the key aspects of the instructor which supported adherence.

Revised proposition: *The instructor's personality, professionalism and humanising approach is noteworthy in influencing participants' ongoing adherence to community-based group exercise programmes.*

The various aspects of the role of the instructor can be seen in Figure 5.4. The humanising approach which was included in the above revised proposition will be discussed further in Section 6.3.

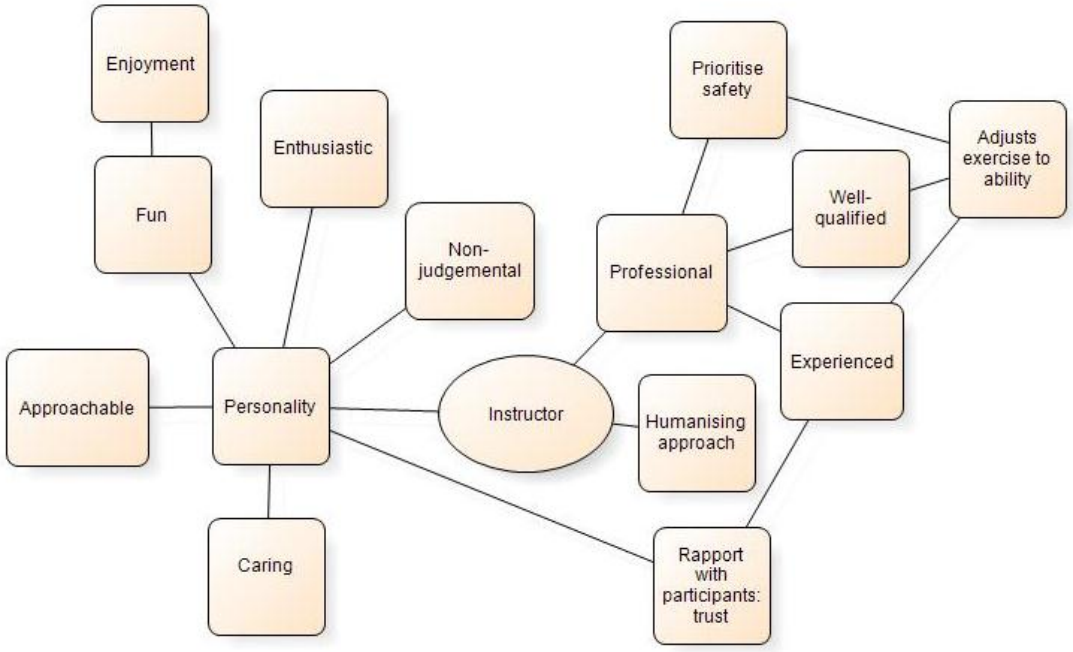


Figure 5.4 The Role of the Instructor in Participant Adherence

5.3. Study Proposition Three: Programme Design

Evidence from Case 1

Case 1 had evidence of aspects of programme design being critical in supporting participant adherence. Programme design refers to the practical, structural features of the programme. This included the time, location, cost, the high safety standards, the non-competitive format, the use of music, time to socialise and having holistic, adaptable exercises.

The CBGEP time being on a Monday morning was appreciated as a good way to start the week. The location was viewed as convenient since participants could easily walk, take the bus, drive or car share. The CBGEP was also viewed as being good value for money. The fact that the CBGEP was run to high safety standards, in a non-competitive way was seen as positive as was the use of music. The way that the exercises worked the whole body and were adapted to be suitable for individual abilities was helpful, as was the group nature of the programme rather than an individual, home-based design (see Sections 4.1.4, 4.1.5, 4.1.6 and 4.1.7).

Does the Proposition Need to be Revised Based on the Evidence of Case 1?

Case 1 showed evidence of the importance of the practical aspects of programme design in aiding adherence to the CBGEP. Namely, the time, location, cost, the high safety standards, the non-competitive format, the use of music, time to socialise, and having holistic, adaptable exercises.

Evidence from Case 2

Case 2 demonstrated the importance of several aspects of programme design which were noted as being helpful in assisting adherence. These included aspects of programme structure including the adaptability of the programme content, safety, cost, and location.

The programme did not have a rigid structure but the content was adaptable depending upon the individual abilities of those present. There was an emphasis on safety at an individual and group level in terms of content and awareness of being in a potentially hazardous forest environment with regards trip hazards (tree roots, pot holes, or ditches). However, this was never handled in a fearful sense but rather in a more cautionary manner (see Section 4.2.4).

The cost was seen as reasonable and the location was convenient in that it was not too far for participants to travel from their homes since they all had access to a car for transport. The social, group nature of the programme was valued. Being an outdoor programme was appreciated by participants but this also meant that weather could have acted as a deterrent. However, for these participants who attended regularly the weather did not appear to be a hindrance (see Section 4.2.5).

Does the Proposition Need to be Revised Based on the Evidence of Case 2?

Case 2 supports the importance of programme design in aiding participant adherence. However, in terms of the convenience of the location, participants were dependent on having access to a car since there was no bus to this site. This potentially excluded anyone who did not have access to a car.

Evidence from Case 3

Case 3 had evidence of the programme design supporting participant adherence to CBGEP. This incorporated the practical aspects of how the programme was structured and designed. The location was convenient and the cost was seen as reasonable. The incentive booking scheme whereby participants would receive money back if they booked in advance and the instructor had met her costs was helpful financially. The adaptation of exercises to meet individual participant ability was beneficial as was the way the circuit aspect of the programme allowed those who were more competitive to challenge themselves. Safety was a high priority to minimise the risk of injury and the routine was changed regularly with the aim of keeping the exercises interesting and challenging. The music played by the instructor was selected to be enjoyable and changed regularly (see Section 4.3.5).

Does the Proposition Need to be Revised Based on the Evidence of Case 3?

Case 3 showed evidence of programme design being important in aiding ongoing exercise adherence. In addition to Case 1 and 2, participants highlighted their appreciation for the way the routine was changed regularly to help maintain interest and challenge with the exercises.

Summary of Proposition Three: Programme Design

This proposition is related to the role which programme design played in adherence to CBGEP. There was evidence from all three cases that programme design was important in aiding ongoing adherence. Programme design was defined as the

practical and structured features of the CBGEP. This includes aspects of location, affordability, programme timing, adaptability of the exercises, safety, music, the group nature, and opportunities to socialise. The initial proposition was revised and expanded to be more explicit in the key features of programme design based on the evidence from this current study.

Revised proposition: *Several practical and structured features of programme design are important in supporting participant adherence to community-based group exercise programmes. These include aspects of location, affordability, programme timing, adaptability of the exercises, safety, music, the group nature, and opportunities to socialise.*

The aspects of programme design can be seen in a more visual form in Figure 5.5.

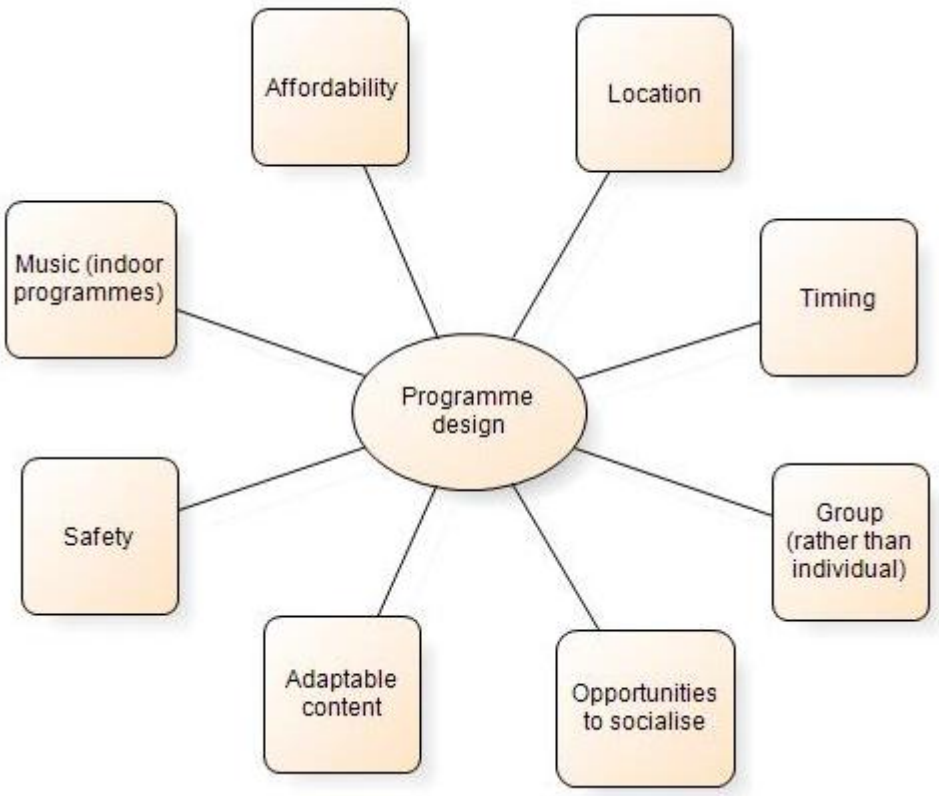


Figure 5.5 The Role of Programme Design in Participant Adherence

5.4. Study Proposition Four: Social

Evidence from Case 1:

The social aspect of the group appeared to be an important feature of adherence for both the Exercise to Music and Circuit Training Class. The CBGEP seemed to add to participant social connectedness and provided opportunities for sharing advice, support and experiences. Sharing advice and experiences was evident in terms of health tips, beneficial exercises, or talking about similar health challenges with other participants. Supporting one another was expressed in participants finding a place to chat, share frustrations, and enquire after one another's health or in visiting someone at home after an injurious fall.

Coming together as a group meant that participants felt they achieved more in the way of exercise than they would have had they tried to exercise at home since the home was seen as having more distractions. This positive group dynamic led to a fun, friendly atmosphere with a commitment to the group and staying active. In the case of the Circuit Training Class this overflowed into participants meeting during the summer break to go for a walk, thus continuing to exercise together. The social nature of the small, friendly group was helpful and this seemed to have more considerable meaning for those who lived alone. Male participants commented that it was important to be among other men since this produced a sense of camaraderie (see Section 4.1.5).

Does the Proposition Need to be Revised Based on the Evidence of Case 1?

The social features of the CBGEP from Case 1 had evidence of participants connecting and supporting one another, including a sense of camaraderie for the men. This led to a positive exercise atmosphere and exercise commitment thus supporting adherence. The social nature of the group appeared to be more important for those who lived alone. Therefore there is evidence of the social aspects of Case 1 supporting adherence.

Evidence from Case 2:

Case 2 had evidence of the social aspects of the CBGEP being important in aiding adherence. Exercising together in a group emerged as being a highly attractive feature of the programme. The group generated a sense of fun, laughter and banter, especially during the warm up and cool down sections of the programme. The walk to and from the visitor centre and between the group exercise stations provided

opportunities for conversations which meant they got to know one another better. The social, group nature led to the development of new friendships. For some, these new friendships overflowed into activities outside the CBGEP and so expanded their social circles. Getting to know new people was an important factor in attending. It was understood that these friendships took time to build but there was an awareness of greater ease of talking together as time went by. The fact that participants all had various health complaints provided a sense of belonging and helped them understand their health challenges in the context of others (see Section 4.2.5).

Does the Proposition Need to be Revised Based on the Evidence of Case 2?

There was evidence from Case 2 of the social aspect of the CBGEP being important in assisting adherence. In addition to Case 1, getting to know new people other than their immediate social circle was an important factor. Although there was an appreciation that it took time for new friendships to build.

Evidence from Case 3:

The social aspects of the CBGEP appeared to be important in aiding adherence in Case 3. The group nature of the programme appeared to produce a highly social environment. This generated a sense of togetherness and was noted as being an important aspect of adherence. Laughter, fun and banter between participants seemed to add to this togetherness making a highly inclusive group. New levels of social connectedness appeared to be formed as they got to know each other and formed new friendships. These friendships provided a level of support emotionally. Although they did not know everyone in the group by name, they appreciated seeing each other when out shopping and being able to stop and talk. Exercising as a group seemed to create a positive exercise environment and was seen as being easier than exercising at home. There was recognition that the social versus exercise drivers varied between individuals. For some participants the social driver was more important, for others the exercise driver was (see Sections 4.3.5 and 4.3.7).

Does the Proposition Need to be Revised Based on the Evidence of Case 3?

Case 3 had evidence of the social features of the group influencing participant adherence to the CBGEP. In addition to Cases 1 and 2, there were more explicit references to the importance of togetherness and its role in exercise adherence.

The differing social versus exercise drivers between participants also warrants special mention.

Summary of Proposition Four: Social

This proposition is related to the role which social aspects play in adherence to CBGEP. In the systematic review, which is where this theoretical proposition was derived from, it was originally called social connectedness. However, based on the evidence from these three cases this term is not broad enough to account for all the various features included in this concept. Therefore, the broader term 'social' is a more appropriate description and led to the revision of the initial theoretical proposition. Due to the complex interactions of the social aspects of the CBGEP the revised proposition was written in a broader sense rather than explicitly noting every nuanced aspect of what could be termed 'social'.

Revised proposition: *The social aspects of community-based group exercise programmes are noteworthy in supporting participant adherence.*

The aspects of the social nature of the programme which are important for participant adherence to CBGEP can be seen in Figure 5.6.

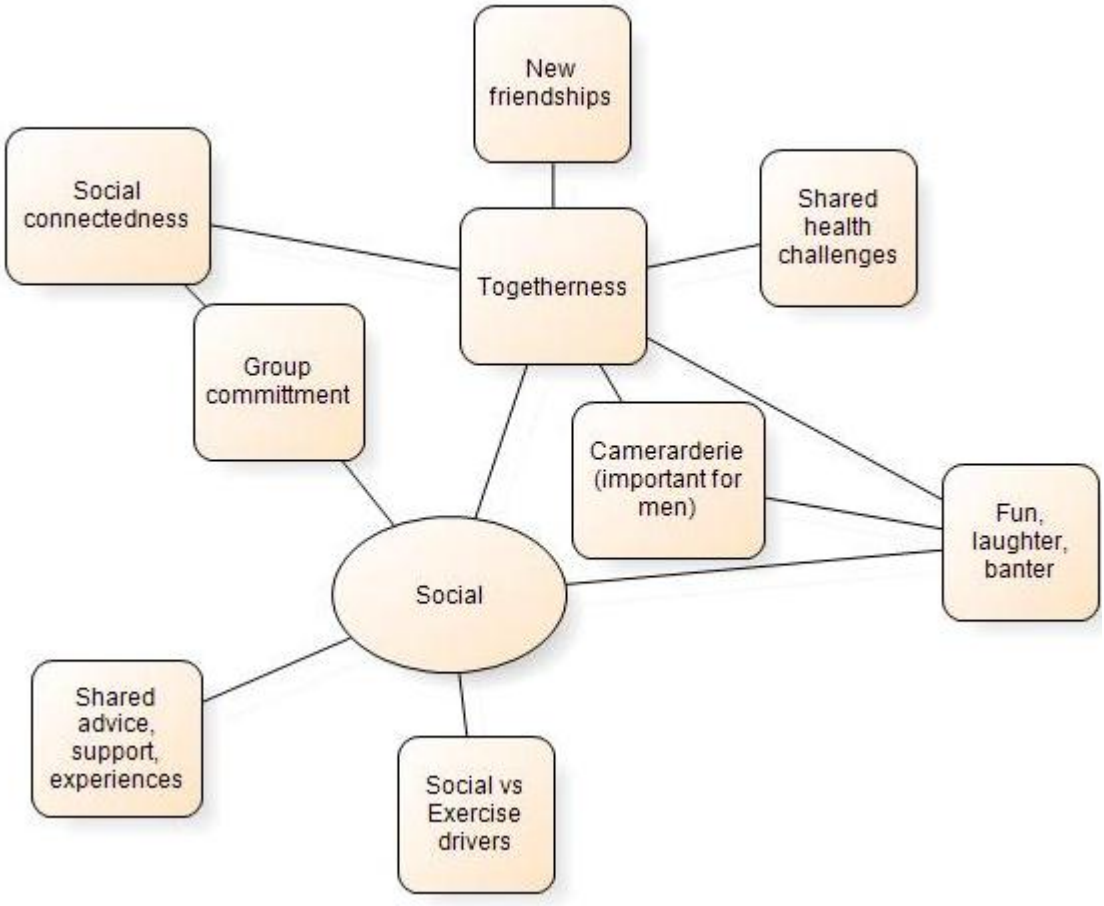


Figure 5.6 The Social Aspects of Participant Adherence

5.5. Study Proposition Five: Participant Perceived Benefits

Evidence from Case 1

From Case 1 there was evidence of participant perceived physical, emotional and mental / cognitive health benefits being important factors in ongoing CBGEP adherence. Participants perceived that the programme was physically beneficial. They recognised gains of improved balance, fitness, strength, and coordination. The exercises also helped participants manage some of their long-term conditions such as neck or back pain. Mentally / cognitively there was a sense that participants *"feel better"* after exercise in that they are less anxious or worried about day-to-day life. The social benefits were also perceived as meaningful, particularly for those who lived alone. The CBGEP was perceived to be fun and enjoyable as well as something that was beneficial for their health. These perceived benefits were therefore important in supporting adherence (see Section 4.1.5).

Does the Proposition Need to be Revised Based on the Evidence of Case 1?

Case 1 supports the proposition that participant perceived benefits are notable in aiding ongoing adherence. Namely, physical, emotional, and mental / cognitive health benefits were important.

Evidence from Case 2:

Case 2 noted several perceived benefits which participants noted as being important in aiding adherence. Perceived physical gains were noted such as weight loss, improved fitness and walking ability. Other perceived gains were more related to enjoyment, feeling good about themselves and their level of achievement after completing the CBGEP (see Section 4.2.5).

Does the Proposition Need to be Revised Based on the Evidence of Case 2?

Case 2 supported the proposition that participant perceived benefits are important in adherence to CBGEP. In addition to Case 1, further explicit physical gains were cited as well as a subjective sense of feeling good about themselves and their sense of achievement.

Evidence from Case 3:

Participants in Case 3 noted perceived physical benefits as a result of CBGEP adherence as well as emotional gains. Improved sleep, increased strength, stamina, and fitness were noted by participants which further led to improved independence. Participants expressed maintaining independence as being vital to their ageing journey. Programme adherence was also perceived as invigorating, energising, and lifted their mood. Other perceived emotional gains included participants' expression of the fun and enjoyment they noted in the CBGEP (see Section 4.3.5).

Does the Proposition Need to be Revised Based on the Evidence of Case 3?

Case 3 has shown evidence of physical and emotional perceived gains as being important in influencing participant adherence. In addition to Case 1 and 2, the perceived physical benefits were explicitly noted to underpin participant independence. This was important because participants viewed the maintenance of their physical health as being vital in enabling them to live independently in their own homes. The invigorating and energising effects of the programme were also noted to be beneficial.

Summary of Proposition Five: Participant Perceived Benefits

This proposition was related to the role participant perceived benefits play in influencing adherence. There was evidence of this proposition being present in all three cases. It was defined as the physical, social, emotional, mental, and cognitive benefits participants perceived from their ongoing adherence to the exercise programmes. For participants to continue adhering to a CBGEP it is suggested that they must experience perceived benefits. The initial proposition was revised based on the evidence from this current study to explicitly include the physical and psycho-social benefits noted by participants.

Revised proposition: *Participant perceived physical and psycho-social benefits are noteworthy in influencing adherence to community-based group exercise programmes.*

The range of participant perceived benefits can be seen in Figure 5.7.

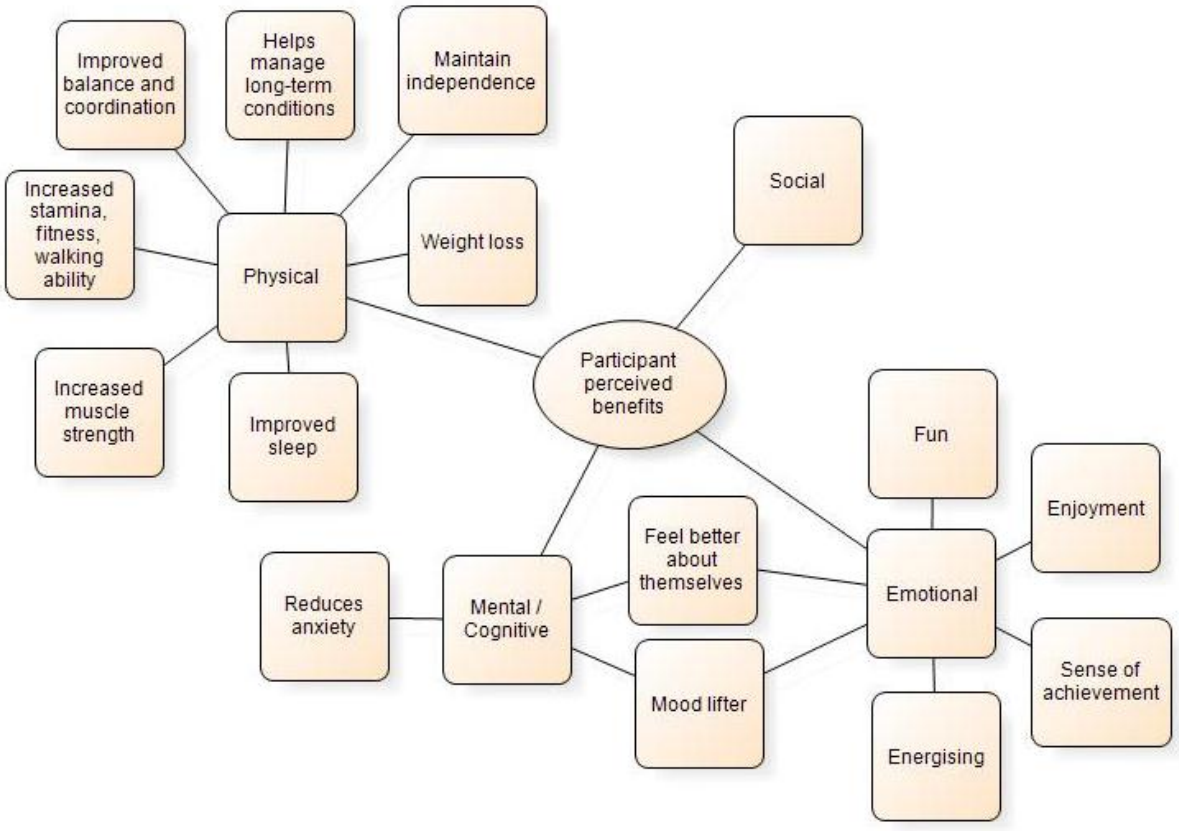


Figure 5.7 The Role of the Participant Perceived Benefits in Adherence

5.6. Study Proposition Six: Energising and Empowering Effects

Evidence from Case 1

There was some evidence from Case 1 to support the proposition that the CBGEP produced an energising effect which was noteworthy in influencing adherence. Some participants commented that they had more energy after attending the programme. Others commented on the positive, energising environment which was created when they all exercised together (see Section 4.1.5). However, this 'energising' notion was not a standalone theme. Rather, it was referenced as an individual motivator. There was also a lack of explicit comments regarding any empowering effects. Although again, the desire to maintain independence as expressed as a factor related to the individual contains elements of agency and empowerment.

Does the Proposition Need to be Revised Based on the Evidence of Case 1?

Based on the evidence of Case 1 there is some evidence to support the proposition that the energising effect of the CBGEP was important in influencing adherence. Empowerment was not explicitly expressed, although was indirectly referenced in relation to aspects of agency.

Evidence from Case 2:

Energising and empowering effects were not explicitly expressed in Case 2. However, an empowering effect was implied as participants commented on the sense of achievement they felt after having completed the programme (see Section 4.2.5).

Does the Proposition Need to be Revised Based on the Evidence of Case 2?

Case 2 offers limited support to the role of empowering effects in supporting participant adherence to CBGEP. The energising effect of adherence was not evident.

Evidence from Case 3:

Energising and empowering effects were not overtly evident in Case 3. However, some participants found that attendance at the programme did lead to an energising

effect as they felt invigorated after the CBGEP (see Section 4.3.5). This has been noted in relation to the theme of participant perceived benefits (see Section 5.5).

Does the Proposition Need to be Revised Based on the Evidence of Case 3?

There is limited evidence to support the role of energising and empowering effects in aiding adherence from Case 3. However, an energising effect was noted by some participants.

Summary of Proposition Six: Energising and Empowering Effects

This proposition is related to the role in which energising or empowering effects may have in influencing sustained participant adherence. Energising and empowering effects was not present as an explicit theme in any of the cases. However, this is not to say that there was no evidence of energising and empowering effects in the findings. The energising effects were mentioned as an individual motivator in Case 1 and as a perceived benefit of attending in Case 3. Empowerment was expressed in the sense of physical achievement in Case 2. However, as a key influencing proposition there is limited evidence in this study to support the role of energising and empowering effects in being noteworthy in supporting sustained participant adherence. The initial proposition was therefore revised based on the findings from this current study.

Revised proposition: *Energising and empowering effects are not clearly expressed in this current study in relation to participant adherence to community-based group exercise programmes.*

5.7. Rival Theories

A rival explanation says that an influence other than the intervention caused the phenomenon of adherence (Yin 2013). In this current study two possible rival theories were formulated based on participant socio-economic status and previously formed exercise habits. Data were therefore collected during the study to help address these rival explanations.

5.7.1. Rival Proposition One: Socio-Economic Status

In order to address this rival proposition, the neighbourhood socio-economic characteristics of those who adhered to the CBGEP were assessed using postcode data via the Index of Multiple Deprivations (IMD). Further individual socio-economic

features were determined by asking questions related to participant education and current employment (see 3.7.1).

Evidence from Case 1

The median IMD was calculated across both the Exercise to Music and Circuit Training Class in Case 1. This was used as a measure of neighbourhood socio-economic status (SES) for participants in Case 1 and was found to be 29,147 (IQR 11,226 – indicating a high neighbourhood SES). With regards education, two participants had some secondary education, six completed secondary school and six had trade / technical / vocational level training. Most participants in Case 1 had retired (n=13) and one reported working part-time.

Does the Proposition Need to be Revised Based on the Evidence of Case 1?

The use of the IMD as a description of the neighbourhood SES in Case 1 indicated that participants were from a high socio-economic area. This would therefore support the rival proposition that participant socio-economic status may have been an important factor in relation to their ongoing adherence to this CBGEP.

Evidence from Case 2

The median neighbourhood SES for participants in Case 2 was 26291 (IQR 10865.5 – indicating a high neighbourhood SES). With regards education three had completed secondary school and two have attained trade / technical / vocational level training. All participants questioned (n=5) were now retired.

Does the Proposition Need to be Revised Based on the Evidence of Case 2?

The use of the IMD as a description of the neighbourhood SES in Case 2 indicated that whilst participants were not from as high a socio-economic area as participants from Case 1 they were still generally from a high socio-economic area. This would therefore add further support to the rival proposition that participants SES may have been an important factor in relation to their adherence to this CBGEP.

Evidence from Case 3

The median neighbourhood SES for participants in Case 3 was 11,859 (IQR 7,524 – indicating a lower neighbourhood SES). With regards to education, three participants had completed secondary school, two had trade / technical / vocational

level training and two had completed university. All participants questioned (n=8) were now retired.

Does the Proposition Need to be Revised Based on the Evidence of Case 3?

The use of the IMD as a description of the SES in Case 3 indicates that participants in this case were from a lower socio-economic area. This implies that in the context of Case 3, there is a lack of support for the proposition that participant adherence was influenced by their socio-economic status.

Summary of Rival Proposition One: Socio-Economic Status

Each case fell at different points on the IMD ranging from low to high (11,859 to 29,147). Participants from Cases 1 and 2 were from a higher neighbourhood SES thus supporting the rival proposition that their high socio-economic background may have been important in explaining adherence. However, Case 3 was specifically chosen since it was known to be in a lower socio-economic area (as based on IMD). Therefore, the fact that participants adhered similarly despite their different socio-economic backgrounds would suggest that their adherence was not necessarily affected or determined by their SES. Thus, there is mixed evidence for the role of SES in explaining participant adherence in this current study.

5.7.2. Rival Proposition Two: Previous Exercise Habits

In order to address this rival proposition, participants were asked to subjectively report whether they had had a generally active, somewhat active, or inactive lifestyle.

Evidence from Case 1

In Case 1, 11 participants stated that they had had a generally active lifestyle, three reported a somewhat active lifestyle, and none reported an inactive lifestyle.

Does the Proposition Need to be Revised Based on the Evidence of Case 1?

Most participants in Case 1 reported having had an active lifestyle. This suggests support for the proposition that participant adherence may in part be explained by previously formed PA habits.

Evidence from Case 2

Five participants in Case 2 reported having had an active lifestyle and one reporting an inactive lifestyle.

Does the Proposition Need to be Revised Based on the Evidence of Case 2?

Most participants in Case 2 reported having had an active lifestyle. This suggests further support for the proposition that participant adherence may in part be explained by previously formed activity habits.

Evidence from Case 3

In Case 3, two participants stated that they had had a generally active lifestyle, one somewhat active, and one inactive.

Does the Proposition Need to be Revised Based on the Evidence of Case 3?

Participants past activity levels varied in Case 3. This suggests mixed support for the proposition that participant adherence may in part be explained by previously formed activity habits.

Summary of Rival Proposition Two: Previous Exercise Habits

Across the three cases 75.0% (18/24) of participants self-reported having had an active lifestyle in the past, 16.7% (4/24) somewhat active and 8.3% (2/24) classified themselves as inactive. Therefore, the majority of participants in this current study perceived themselves to have had an active past. This might indicate that their adherence to the exercise programme is as an extension of their lifelong activity habits.

5.8. Additional Themes

Based on the thematic analysis of the qualitative data one further theme was identified which was not included in the above propositions. This was the theme called ‘environment’ in Case 2. This specifically referred to the pleasure participants expressed in being able to exercise in an outdoor environment. This theme was unique to this case since it was the only CBGEP included in this current study which took place in an outdoor location. The outdoor exercise environment was commented upon by participants as being a notable feature of the CBGEP. This added pleasure in the form of enjoyment of the sounds of the birds in the forest, the colours of the trees or various plants, and was preferable to an indoor exercise environment. This additional theme and its role in adherence have been raised in the discussion in relation to the sensual pleasures of exercise and in the application of the humanisation framework (see Sections 6.2.5 and 6.3)

5.9. Summary

This chapter employed the analytic technique of explanation building (Yin 2013) by using the findings from each case to build an explanation of the role each proposition played in participant adherence to CBGEP. Based on this technique, it is suggested that this current study contains evidence of individual, instructor, programme design, social, and participant perceived benefits as being important in aiding adherence to CBGEP. The final proposition of an energising and empowering effect was not found to be essential in supporting adherence. In addition, there was mixed support for the two rival explanations of SES and previously formed PA habits. The following chapter discusses each of these propositions in relation to the literature.

6. Discussion

6.1. Introduction

The aim of this study was to understand older people's adherence to community-based group exercise programmes (CBGEP). This is important because it is only as a physically active lifestyle is sustained that health and wellbeing gains are realised (Chodzko-Zajko et al. 2009). The following overarching research question supported the aim of the study:

> How and why have older people (≥ 60 years) sustained adherence (≥ 69.1% for ≥ 1 year) to three community-based group exercise programmes in the South West of England?

This research question was operationalised by the following theoretical and rival propositions developed from the literature.

Theoretical Propositions:

1. *Individual behaviour* is noteworthy in influencing participant adherence to community-based group exercise programmes.
2. *Instructor behaviour* is noteworthy in influencing participant adherence to community-based group exercise programmes.
3. *Programme design* is noteworthy in influencing participant adherence to community-based group exercise programmes.
4. *Social connectedness* is noteworthy in supporting participant adherence to community-based group exercise programmes.
5. *Participant perceived benefits* are noteworthy in influencing participant adherence to community-based group exercise programmes.
6. *Energising and empowering effects* are noteworthy in influencing participant adherence to community-based group exercise programmes.

Rival Propositions:

1. Participants were from a high socio-economic status which is known to influence exercise levels and adherence (Cohen et al. 1999; Murray et al. 2012; Picroelli et al. 2014).

2. Participants had already formed exercise habits; therefore their adherence was a continuation of this habit (van Stralen et al. 2009).

To address the research question, combinations of quantitative and qualitative methods were employed within a multiple-case study research design. The quantitative findings added contextual understanding of the demographic, lifestyle, and socio-environmental characteristics of older people who adhere long-term to CBGEP. The qualitative findings (from participant observation, focus groups, documents, and interviews) assisted in understanding older people's adherence from multiple perspectives, thus supporting a multifaceted approach to studying CBGEP. In order to gain further depth of understanding of older people's adherence to CBGEP the humanisation framework (Todres et al. 2009) was utilised. This assisted in highlighting the deeper meaning of PA adherence from a humanised perspective.

This chapter focuses on the discussion related to the findings presented in chapters four and five. The discussion is structured around the above propositions and the depth phase of analysis based on the humanisation framework. To build on this discussion, this chapter then goes on to present a thematic schema which illustrates how the main findings from this current study interact conceptually in relation to older people's adherence to CBGEP. Finally, the strengths and limitations are discussed as well as some insights into the reflexive account of the researcher and the dissemination of findings.

6.2. Study Propositions

In order to address the research question, each of the theoretical propositions is discussed in relation to the findings of this current study and the relevant literature. This will highlight where this current study adds to the existing literature around older people's adherence to CBGEP.

6.2.1. Study Proposition One: Factors Relating to the Individual

Initial proposition*: Individual behaviour is noteworthy in influencing participant adherence to community-based group exercise programmes.*

Revised proposition*: Factors relating to the individual such as aspects of a participants personality, current circumstances, preferences for a non-gym environment, personal motivators, and history of physical activity engagement are*

noteworthy in influencing participant adherence to community-based group exercise programmes.

This proposition was concerned with factors related to the individual and the role this played in influencing participant adherence to CBGEP. Based on the findings from the three cases included in this current study, the initial proposition was revised and expanded to include aspects of participant personality, preferences, current circumstances, personal motivators, and the role PA had played across participants' lives. There was evidence of these factors contributing to this proposition serving to explain adherence in all three cases.

Several features mentioned above have previously been noted in the academic literature in regards to CBGEP. For example, personal participant characteristics of commitment, perseverance, preference for a routine or structure in their week, a desire to stay active in order to maintain independence, and being physically active in the past were reported by Chiang et al. (2008). However, the new knowledge generated from this current study with regards to factors related to the individual was the role in which a non-competitive environment played in supporting participant adherence. Whilst Chiang et al. (2008) noted that participants (mean age 76 years, 85% female) were competitive, this current study found that on the whole participants were not competitive and enjoyed the non-competitive exercise environment of the CBGEP. Although there were gender differences noted in this current study. For example, some male participants expressed being more competitive in the past but preferred non-competitive programmes at this time in their lives. The exception was Case 3, where it was noted that the men and some women were presently competitive. The CBGEP of Case 3 was structured in such a way that during the circuit portion of the programme participants could be competitive (either with themselves or with their exercise partner) or exercise in a non-competitive manner. Thus, the programme design was able to meet the preferences for the varied competitive personalities. Given the range in competitive preferences or personalities in this current study it is suggested that a highly competitive environment is not a key influencing factor in promoting programme adherence. However, designing a programme to allow for personal competition may support those with a more competitive lean to their personality.

In some situations, participant circumstances appeared to play a role in their ongoing adherence. For example, for participants who lived alone, the opportunity to leave the house and be with others was important. The occasion to socialise could

therefore be seen as a driver. The role of socialisation will be dealt with more thoroughly under proposition four (see Section 6.2.4) however, it is highlighted here as a factor related to the individual in relation to how participant circumstances may influence adherence. For others, the personal circumstances of being a carer for their spouse meant that the CBGEP served as an opportunity to have time to themselves. In this way there was a sense that the CBGEP acted as a mental escape. The CBGEP afforded participants the opportunity to have time away when they were not required to function in another role, for example in their caring role. Participants commented that it was a time when they could forget their day-to-day worries and switch off, perhaps escaping mentally. This concept of escapism has similarly been reported in relation to regular, long-term exercise adherence (Crossley 2006) and in relation to pleasure as a source of immersion through which the focus on the exercise facilitates an escape (Phoenix and Orr 2014). However, this notion of escape has not been noted as a factor in relation to older peoples CBGEP adherence, thus is considered new knowledge.

Personal preferences were evident in the decisions made by participants to select a group exercise programme over other forms of exercise. For example, there was a dislike of home exercise programmes or gym environments. Many individuals commented that they lacked the discipline to engage in exercises at home whilst gyms were seen as boring or isolating. Instead, participants preferred being together and exercising as a group. Additionally, there was a personal preference of appreciating the routine of the CBGEP and the structure this added to their week. Attending the programme at a regular time each week had become a part of their routine. Crossley (2006) suggest that routines are performed exactly because they are routine; they have become cemented habits performed without much thought and it is these habits which can provide structure and purpose to everyday life (Phoenix and Orr 2014). Thus, the routine of the programme supported ongoing adherence. Finally, in relation to personal preferences, participants in the indoor exercise programmes (Cases 1 and 2) felt the use of music was important in adding to the enjoyment of the group. The use of music has been noted to work as a motivator in the context of gym programmes (Hallett 2015) and adds to the pleasure of exercise (Phoenix and Orr 2014). In this current study the personal preference for music appeared to support sustained exercise adherence. The use of music is discussed further in relation to programme design (see Section 6.2.3).

Personal motivations to continue adhering stemmed from participants desires to maintain health and independence. For some this was so they could remain strong

and healthy enough to continue to provide practical support in their role of caring for their spouses or family. For others, the motivation was based on remaining well enough to continue to live independently in their own home. This motivation to remain independent has similarly been reported by Hartley and Yeowell (2015) in their study of what would potentially influence older people's adherence to CBGEP. This desire to keep healthy and maintain independence implied a view about caring for the future. This is a flourishing view of participants' long-term health and wellbeing which could be inferred as a eudaimonic understanding of wellbeing. There was also a sense that PA was something that their body needed and attending the programme was enjoyable and thus a pleasure. Therefore conceptually this could be suggested as a hedonic experience.

The concepts of eudaimonia and hedonia are important because they are central to the study of wellbeing (Huta and Waterman 2014). A eudaimonic approach to wellbeing focuses on "meaning and self-realisation and defines wellbeing in terms of the degree to which a person is fully functioning" (Ryan and Deci 2001, p. 141). Traditionally, eudaimonia has been translated as happiness although flourishing is more preferable as the focus is on activities which reflect excellence, virtue and reaching an individual's full potential (Huta and Waterman 2014). At its core, eudaimonia involves the coming together of a person's diamon or true self (internal) with their outward expressions and activities (external) allowing people to live an authentic, fully-engaged life (Ryan and Deci 2001; Lewis et al. 2014). In the context of PA, it has been suggested that eudaimonia is "a process for experiencing life that may be connected to the engagement in sustained healthy living activities" (Lewis et al. 2014, p. 645) which could include PA.

Hedonia focuses on happiness as pleasure, enjoyment, and the avoidance of pain (Ryan and Deci 2001; Huta and Waterman 2014). Pleasure has been referred to as a "forgotten dimension of physical activity in older age" (Phoenix and Orr 2014, p. 94). The dimension of enjoyment or pleasure will be discussed further in relation to participant perceived benefits (see Section 6.2.5).

The hedonic and eudaimonic in this current study seem to be expressions of personal motivation. It is not clear whether both elements need to be present to encourage ongoing adherence or whether individuals favour one expression of motivation and wellbeing over another. Understanding where these expressions of personal motivation come from would be important in supporting participant adherence to an exercise programme. Voluntary PA is suggested as being partly

regulated by environmental factors such as culture, safety, the built environment and peer support (Dunton et al. 2009). However, more recently, literature is expanding around the role of genetic influence on activity levels. This suggests that individuals may be born with a predisposition toward activity or inactivity (Lightfoot 2011). Furthermore, evidence is emerging suggesting potential genomic locations for those genetic activity factors with a view to increasing understanding about the mechanisms by which genetic factors regulate activity (Lightfoot 2011). Whilst this current study contains findings of hedonia and eudaimonia as expressions of personal motivation in exercise adherence, the source of those motivations is unclear. Although beyond the scope of this current study, the author would speculate that perhaps the hedonic and eudaimonic motivations are expressions of genetic predisposition towards PA. As such, those who are more predisposed to being active could experience less inertia than those who are less predisposed to activity.

Self-efficacy has been found to be a consistent motivational, psychological predictor of older peoples PA initiation and maintenance (Burton et al. 1999; Brassington et al. 2002; van Stralen et al. 2009; McAuley et al. 2011). In the context of exercise adherence, self-efficacy relates to an individual's perception of their confidence to adhere to an exercise programme over time and to continue exercising in the face of potential barriers (McAuley et al. 2011). It was therefore interesting to note that the findings of this current study do not contain evidence of participant self-efficacy as being important with regards to ongoing exercise adherence. However, this may have been explained by the fact that participants had been attending their respective CBGEP for over a year and had therefore established a level of exercise confidence.

Many participants in this current study mentioned past PA experiences as a factor which they felt had contributed to their current adherence to this CBGEP. This was similarly reported by Chiang et al. (2008). Past activities in this current study included walking, swimming, team sports, aerobic classes, bicycling, martial arts, tai chi or yoga. However, this was not the case for all participants and others had not exercised since school or reported being too busy with work for intentional exercise to feature regularly. To explore this notion of past PA experiences further the author will draw upon the Life Thread Model (Ellis-Hill et al. 2008).

The discourse around our past helping inform the decisions we make in the present displays elements of the Life Thread Model (Ellis-Hill et al. 2008). This discursive

model derived from psychology and sociological work uses the metaphor of threads which characterise the varieties of stories individuals create through life. They hold within their strands past memories, a sense of identity and future plans. If PA had been a thread on an individual's journey to date then within the Life Thread Model it is suggested that this thread will continue unless there is a significant reason for it to stop. The presence of this thread may ebb and flow in the centrality of a person's life but the fact that it is present means it is still part of the narrative or identity of that person's life. The Life Thread Model also considers the social aspects to the stories or networks which are created between people. These networks support people as they journey through their lives and add to a sense of belonging and shared understanding (Ellis-Hill et al. 2008). Thus, past activity habits may further be supported by the social aspects of participants' lives.

The Life Thread Model has most often been used in the context of people with an acquired, permanent physical disability, such as following a stroke (Ellis-Hill et al. 2008). Whilst this was not the context of this current study, the Life Thread Model and metaphor is still helpful since participants made reference to some specific life events which whilst not leading to a permanent physical disability, did have considerable impact upon their lives. For example, the transition into retirement, losing their spouse, having a heart attack, going into hospital for surgery, having a fall or the fear of falling, or losing independence. These significant life events have the potential to break some of the threads in their story yet in some way the exercise programmes and the subsequent support networks developed through attending allowed a shared understanding and belonging. Participants were with peers who had similar struggles, similar aches and pains, similar life challenges and this sharing of stories may have been impactful in helping individuals cope with significant life events. Therefore, it is suggested that part of participant adherence was not necessarily related to the exercise programme per se, but to a group of people who have a shared sense of understanding and belonging. This may be key in helping participants sustain ongoing adherence in the midst of life challenges, thus allowing the activity thread on their journey to remain intact as they continue to age. In addition, this shares some similarities with the humanising dimensions of personal journey and togetherness (see Section 6.3).

Summary of Proposition One: Factors Related to the Individual

This current study highlighted the importance of factors related to the individual which influenced participant adherence to the CBGEP. Namely: the role of aspects

of participant personality, current circumstances, preferences, personal motivators, and having had a physically active past. Some of these features have been reported in previous studies. However, the discussion also highlighted several new findings. Firstly, the general preference for a non-competitive exercise environment was important in supporting adherence. However, having a programme design which also facilitated a platform for more competitive personalities was helpful and in this way accounts for the uniqueness of individual participants.

Secondly, the notion of escapism was important. Whilst this has previously been reported in other studies, this may be particularly important for older people attending CBGEP who play a considerable role in caring for their spouse or other family members. This escape appeared to support their wellbeing in affording them time away from that caring role where they could focus on themselves. Thirdly, the role of hedonic and eudaimonic as a personal motivation appeared to be important in relation to participants long-term, ongoing adherence to the CBGEP. The eudaimonic expressions particularly served to underpin the desire to stay healthy and independent as participants aged. What is interesting in relation to these study participants is that the motivation to stay healthy was actually translated into practical adherence to a programme which supported their physical health.

Finally, the Life Thread Model adds understanding to the way in which a shared sense of belonging may help participants continue adhering in spite of personal challenges, thus maintaining the thread of PA on the continued life journey.

6.2.2. Study Proposition Two: Instructor

Initial proposition: *Instructor behaviour is noteworthy in influencing participant adherence to community-based group exercise programmes.*

Revised proposition: *The instructor's personality, professionalism and humanising approach is noteworthy in influencing participants' ongoing adherence to community-based group exercise programmes.*

This proposition is related to the role of the exercise instructor in influencing participant adherence to CBGEP. Specifically, the features of the instructor in relation to participant adherence included the instructors' personality, their professionalism and their humanised approach. There was evidence from all three cases that participants found the instructor to be key in aiding their ongoing adherence.

The positive influence of the instructor has been seen elsewhere in the literature around CBGEP for older people (Horne et al. 2010; Stathi et al. 2010; Hawley et al. 2012; Hawley-Hague et al. 2014). In some instances, the exercise instructor has been described as “the most important element of a successful community exercise programme” (Avers 2010, p. 280).

This current study adds further support to the role of the instructor in promoting exercise adherence. There was evidence of the instructors’ personality being important. Specifically, their enthusiastic, approachable, non-judgemental nature, their care and concern as well their sense of fun which added to the enjoyment of participants. This finding is similar to that of Stathi et al. (2010) in which the patient, sensitive approach of instructors helped participants learn and grow in their exercise competence and self-efficacy. The importance of caring, encouraging, approachable, pleasant instructor personalities has also been said to encourage adherence (Avers 2010; Horne et al. 2010; Biedenweg et al. 2014).

Instructor personality and exercise adherence has been explored in depth by Hawley-Hague et al. (2014). They reported that participant attendance and adherence was higher for instructors who were more conscientious, but poorer for those who were too extravert, agreeable, or came across as too intelligent (Hawley-Hague et al. 2014). It is not clear in the work of Hawley-Hague et al. (2014) why some particular personality traits were positive and others were negative. However, later work by the same authors highlighted the importance of instructors having a personal touch, such as personal encouragement or reassurance when promoting exercise (Hawley-Hague et al. 2016). This personal touch is supported based on the results of this current study and can be further understood by the suggestion that the more humanised personality traits (being approachable, non-judgemental and caring) support adherence. This humanised approach built rapport and trust between participant and instructor which is vital in sustaining adherence to the CBGEP.

A second source of rapport and trust in this current study came from the participant perception that the instructor was well trained, experienced, knowledgeable and professional, with high safety standards. This finding is consistent with Estabrooks et al. (2004) who noted that effective instructors were those who participants felt were properly qualified. Additionally, instructors experience with leading exercise programmes can almost double adherence (Seguin et al. 2010). Instructor qualification ranged in this current study from Level 2 to more advanced Level 4

qualifications as based on UK standards for exercise instructors (Register of Exercise Professionals 2015). The instructors in all three cases were relatively experienced and had each been leading exercise programme with older people for seven years or more. Therefore, in this current study, both instructor experience and qualifications were important in building rapport and trust and through this supported ongoing adherence to the CBGEP.

A further component of the way the instructors supported adherence was related to the adaptation of exercises so that they were tailored for the individual participants' ability. This was evident in all three cases and was related to instructor experience and training and reinforced the participant view of safety being a priority. Tailoring of exercises has been noted as an important feature of CBGEP design (King et al. 2000; Englund et al. 2005; Cyarto et al. 2006; Fox et al. 2007; Jancey et al. 2007; Chiang et al. 2008; Tak et al. 2012; Dunlop and Beauchamp 2013; Garmendia et al. 2013; Kirby and Kluge 2013; Hawley-Hague et al. 2016) and supports participant adherence to CBGEP (Farrance et al. 2016). The individual tailoring of exercises can also build trust between participant and instructor (Stathi et al. 2010).

In this current study, the way the instructors adapted the exercises helped participants self-select their exercise exertion and respond according to their physical health at that moment in time. This was empowering for participants and meant they could maintain agency. It is suggested that the skill level of the instructor in having the knowledge to adapt the exercises, combined with a flexible, willing personality helped participants achieve more. Moreover, adapting the exercise content meant that participants were treated in a unique humanised way which supported their agency. This allowed participants to exercise in a way that was inclusive and safe.

Based on the discussion above, it is suggested that if older people are to be empowered to adhere long-term to CBGEP then certain considerations need to be made when appointing instructors to lead CBGEP. In addition to considering the professional or technical qualifications, attention should be paid to whether the instructor is qualified in character and personality to lead the CBGEP. These deeper considerations must be attended to in order to support participant adherence. Just as humanising care in hospital settings should be a way of 'being' rather than just 'doing', (Scammell and Tait 2014) these same principles should be transferred to the setting of CBGEP. Whilst it may seem that the instructor is there to 'do' the job of leading the exercise programme, what this current study shows is that the way

this is carried out (the 'being' part of the instructor) appears to be vitally important in aiding ongoing adherence. What is not clear from this current study is whether these humanising traits of the instructors are intrinsic to personality or whether this is something which can be imparted through training.

Summary of Proposition Two: Instructor

In summary, there is evidence from this current study regarding the role of the instructor as an important construct for older people's adherence to CBGEP. This is supported by the existing exercise literature around older people's engagement in CBGEP where the instructor has been noted to play an important, but not isolated role (Hawley-Hague et al. 2016).

Based on the findings of this current study it is suggested that instructors need to be knowledgeable and competent yet approachable and human. It is this notion of the way participants were treated in a humanised manner which is unique knowledge generated from this current study. Instructors aided participants in maintaining agency by equipping them with information so they could self-select their exercise intensity depending upon their ability. This supported an environment whereby participants could exercise without criticism or judgement. Instructors were sensitive to the insider experiences and challenges faced by participants; they were not treated like an object. The instructors cared for and supported their participants. The fact that participants were treated in a humanised way suggests that this is a factor in the success of good programme adherence rates in these three cases.

6.2.3. Study Proposition Three: Programme Design

Initial proposition: *Programme design is noteworthy in influencing participant adherence to community-based group exercise programmes.*

Revised proposition: *Several practical and structured features of programme design are important in supporting participant adherence to community-based group exercise programmes. These include aspects of location, affordability, programme timing, adaptability of the exercises, safety, music, the group nature, and opportunities to socialise.*

This proposition is related to the role which programme design played in adherence to CBGEP. The theme of programme design was evidenced in all three cases. It is defined as the practical and structured features of the CBGEP. The initial proposition was revised based on the evidence from this current study to be more explicit in stating the various aspects of programme design which are important.

These include aspects of location, affordability, adaptability of the exercises, safety, music, and opportunities to socialise.

The importance of programme design has been noted in several others studies focused on CBGEP (Fox et al. 2007; Chiang et al. 2008; Dunlop and Beauchamp 2013; Garmendia et al. 2013; Kirby and Kluge 2013). In particular, the group nature of the programme has been seen to be a dominant reason for ongoing attendance due to the nature of the group dynamic as well as the social networks and ensuring support (McAuley et al. 2003; Chiang et al. 2008). Since the group aspect of programme design has such close links with the social nature of the programme this will be discussed under proposition four (see Section 6.2.4).

The preference for music whilst exercising was a common feature across the two indoor CBGEP (Cases 1 and 3). The effect of music in the context of exercise has been found to have psychophysical benefits such as improved mood, reduced perceived exertion, greater work output, enhanced skill acquisition, flow states, and disassociation from feelings of fatigue (Terry and Karageorghis 2006). With regards the role of music with older people there is some evidence that music serves to enhance the exercise experience by reducing the perception of difficulty and monotony of exercise (Schutzer and Graves 2004). Furthermore, older people who listen to music when carrying out exercise programmes may exhibit positive cumulative effects with improved exercise endurance (Clark et al. 2012). This is possibly due to higher participant adherence to programmes where music was used (Schutzer and Graves 2004; Clark et al. 2012). This supports the findings of this current study where music appeared to help participants sustain adherence to CBGEP.

The author would suggest that some of the features of programme design, for example location, affordability, timing, safety, and music, align with Herzberg's dual factor theory (1987). This theory has become acknowledged as one of the most widely used theories in understanding motivation and satisfaction (DeShields et al. 2005; Miner 2005). Although Herzberg's theory was developed several decades ago and in the context of the workplace it has since been used in a variety of settings. These include customer satisfaction (Naumann and Jackson 1999), education (DeShields et al. 2005), information technology (Hsieh 2015) and exercise behaviour (Hallett 2015).

Herzberg argued that employees' needs could be categorised as either relating to satisfaction (motivators), or to dissatisfaction (hygiene factors). Hygiene factors are

extrinsic and thought to contribute little to job satisfaction but if not present would lead to job dissatisfaction (Herzberg 1987). Satisfiers (or motivators), however, contribute little to dissatisfaction but much to satisfaction (Naumann and Jackson 1999). Satisfiers and hygiene factors are relevant because when satisfiers and hygiene factors are present then work outcomes are improved with a reduced rate of absenteeism (Herzberg 1987). Thus, there may be parallels to be found in hygiene factors and satisfiers relating to CBGEP adherence.

In the context of CBGEP, it is suggested that several extrinsic factors such as location, affordability, or having an individual and adaptable content may function as hygiene factors. This would mean that the extrinsic factors do not necessarily contribute to participant satisfaction, but if those extrinsic factors were not present, they may lead to participant dissatisfaction with the programme, and potentially non-adherence. Conversely, it is proposed that satisfiers or motivators such as social factors or humanising elements contribute little to participant dissatisfaction but much to satisfaction and thus ongoing adherence. Table 6.1 summarises the hygiene and satisfiers suggested based on the findings in this current study.

Hygiene Factors (Preventing Participant Dissatisfaction)	**Satisfiers (or Motivators) (Contributing to Participant Satisfaction)**
• Location • Affordability • Individually adaptable content • Music • Safety • Well qualified and experienced instructor • Perceived benefits	• Social factors • Humanising elements

Table 6.1 Hygiene Factors and Satisfiers as Related to Community-based Group Exercise Programmes

The application of Herzberg's dual factor theory as applied to customer satisfaction is further applicable in the context of this study. After all, participants could be seen as customers. In this instance, the hygiene factors would need to meet customers (participants) expectations. Furthermore, satisfiers (or motivators) would need to be delivered to a level that exceeded their expectations (Naumann and Jackson 1999). It is therefore suggested that CBGEP which are high on performance of hygiene and satisfier attributes would have well-managed participant satisfaction and thus have high participant adherence rates (see Figure 6.1). The three cases included in this study would seem to demonstrate high performance on hygiene factors and

satisfiers. This would further explain why these features of programme design have helped support participant adherence.

Performance on Hygiene Attributes			
High	**Basics Only** • Ignores satisfiers • May have to compete mainly on price	**Well-Managed Participant Satisfaction** • High participant adherence
Low	**Ignores Satisfaction** • High participant turnover	**Unmet Expectations** • Lack of attention to things participants expect • High participant turnover
	Low — *Performance on Satisfier Attributes* — High	

Figure 6.1 Participant Satisfaction Grid (Adapted from Naumann and Jackson 1999)

Summary of Proposition Three: Programme Design

In summary, this current study highlights the importance of considering several practical and structured features with regards programme design to support ongoing participant adherence to CBGEP. This includes aspects of location, affordability, programme timing, adaptability of the exercises, safety, music, the group nature and opportunities to socialise. Many of these aspects have previously been noted in the literature around older people's exercise adherence. However, what this current study adds is the suggestion that several features reported to be important in programme design may in fact be hygiene factors. What this would mean in practice is that whilst factors such as location, affordability, music, and an adaptable content need to be present, these factors are not necessarily key in promoting participant satisfaction. However, they need to be present to prevent participant dissatisfaction. Thus, for this reason these programme design features do have a role to play in supporting ongoing participant adherence. Other elements reported in this study may serve to work more explicitly as motivators for example social factors and humanising elements. Furthermore, it is suggested that programmes with high adherence rates may reflect high performance on hygiene and satisfier attributes.

6.2.4. Study Proposition Four: Social

Initial proposition: *Social connectedness is noteworthy in supporting participant adherence to community-based group exercise programmes.*

Revised proposition: *The social aspects of community-based group exercise programmes are noteworthy in supporting participant adherence.*

This proposition is related to the role in which social aspects play in adherence to CBGEP. This was evidenced in all three cases. This theme was initially difficult to define due to the nuanced aspects of what could be called 'social' within the findings. There was the level of 'chatting' that was displayed in each case; the programmes were friendly, displaying a sense of support, but there was also the group dynamic. This made it difficult to discern which came first. It was unclear whether the social aspect was evident purely because of the group dynamic or whether it was the group dynamic which led to the sociability of the programme. This challenge of understanding the social / group dynamic in reality reflects the complexity of the range of factors which interact in CBGEP.

The social aspects of group exercise programmes have been reported in several studies under various terms such as 'social support' (Allender et al. 2006; Baert et al. 2011; Bethancourt et al. 2014), 'connectedness and social support' (Fox et al. 2007), 'social environment' (Chiang et al. 2008), 'social connectedness' (Dunlop and Beauchamp 2013) or 'social interaction' (Bethancourt et al. 2014; Garmendia et al. 2013). All of the above terms are relevant and cover the various components of the role social features play in adherence. The term 'social' in this current study was selected as the broadest term possible to encompass all these nuanced aspects.

By their very nature group exercise classes involve a greater degree of social interaction than gym activities (Crossley 2006). Within the context of this current study, the importance of the social interactions from the group dynamic and subsequent social connectedness was noted as being a key component of participant adherence to the CBGEP. The instructors were aware of the importance of these social links with participant adherence. They therefore sought to foster those connections through the way they structured the programme, such as pairing up for circuit stations or having a water break when participants could talk. As such the instructors supported the social cohesion of the groups as has been previously reported in the literature around older people's adherence to CBGEP (Hawley-Hague et al. 2016).

To better understand the social context of participants in this current study, participants were asked about their objective social networks and their subjective perceived social support. Based on these measures each case contained participants who due to their limited social networks could be classed as socially

isolated (Lubben et al. 2006). However, of those at risk of social isolation, five participants reported having good perceived support and two participants indicated being at the high end of moderate support. This would indicate that despite objectively being classed as at higher risk of social isolation, these individuals nonetheless subjectively perceived being supported. The small number of participants limited meaningful conclusions from being drawn. Further information would be necessary to understand what role the CBGEP may have played in adding objectively to participant networks. However, the qualitative findings would suggest that as participants interacted and connected socially they were afforded the opportunity to add to their social networks or increased perceived support. The way the CBGEP added to older peoples social networks has similarly been reported in the literature around CBGEP (Hartley and Yeowell, 2015; Hawley-Hague et al. 2016).

Improving social networks is important because it can provide a buffer against the risk of poor health, particularly via the medium of social support which is critical to both physical and mental wellbeing (Marmot 2010). In several instances participants who lived alone commented on the role in which the CBGEP played in providing social support. As participants supported one another with shared advice, experiences, friendship, or even more practical support with visiting if someone had had a fall, it could be said they became assets for each other. This has been noted in other CBGEP where the connections and support between participants acted as a buffer against the risk of social isolation (Dunlop and Beauchamp 2013). The role of older people becoming assets to each other and to the wider community has been discussed in the context of an asset based approach to ageing well (Office for Public Management 2012). In this approach, older people are viewed as making valuable contributions to their communities. This was noted in this current study as individuals became resources of support for each other. This view of older people as assets to one another has some similarities with the concept of social capital.

Social capital has many definitions and multiple dimensions (Putnam 2001). However, the central idea of the concept of social capital is that “networks and the associated norms of reciprocity have value” (Putnam 2001, p. 1). Social capital has also been referred to as community spirit or neighbourliness and is important because it is strongly linked to subjective wellbeing (Helliwell and Putnam 2004; Hothi et al. 2008). Thus, it is suggested that the CBGEP in this current study became a source of social capital as participants interacted socially, made friends, and supported one another.

However, despite the clear evidence for the role of social factors in supporting adherence, the importance of the building of social networks and support versus the exercise drivers may vary depending upon a participant's current social networks and personal circumstances. For example, participants who lived alone appeared to place greater emphasis on the social aspects. Conversely, other participants were more explicit in communicating their priority in attending for the exercise engagement, with the social features taking a lesser role. This has also been recognised in a male only CBGEP where there was a divergence in programme objectives (Dunlop and Beauchamp 2013). Some participants viewed the programme as an opportunity to exercise, others as an opportunity to socialise, or a third stance that it was 50:50 exercise and social (Dunlop and Beauchamp 2013). Thus, whilst beyond the scope of this current study, it is suggested that participants may fall along an exercise versus social continuum depending upon their personal priorities and circumstances.

The social, group dynamic of the CBGEP appeared to foster a level of commitment to the group which consequently supported exercise adherence outside the boundaries of the programme. This was particularly evident in Case 1 whereby participants continued to meet and exercise together during the summer break. The social interactions and positive group dynamic also overflowed into fun, laughter and banter between participants and with the instructor. This was important in adding to the enjoyment of the exercise programme and supported adherence. The positive social interactions as a source of enjoyment and subsequent adherence has previously been noted in the literature around group exercise programmes for older people (Fox et al. 2007; Hartley and Yeowell 2015; Hawley-Hague et al. 2016).

This current study also highlighted that for some of the male participants it was important that they were able to exercise with other men. Being with other men added a sense of camaraderie and an appreciation for the opportunity to *"talk about rugby"* and have fun and banter with each other. The preference for all male CBGEP has similarly been reported by Dunlop and Beauchamp (2013). They noted that the male participants expressed being uncomfortable exercising in the company of women and being in an all-male programme increased their sense of camaraderie and security (Dunlop and Beauchamp 2013). With regards PA in gender-segregated contexts others have noted that female only environments also contribute to a participant's sense of ease and security (Lloyd and Little 2010). The CBGEP in this current study were predominantly made up of female participants.

However, there did not seem to be critical concerns or explicit preferences for gender-segregated programmes apart from some male participants appreciating having other males in the CBGEP. Thus the gender composition of the programme did not appear to influence participant adherence considerably.

In this current study, the social, group dynamic of the programme led to participants expressing a sense of togetherness and belonging. The notion of belonging as a conduit to adherence has only recently been reported in the literature around older people's engagement in CBGEP. Hartley and Yeowell (2015) noted that for older participants in their study of CBGEP, adherence was facilitated by a sense of belonging to the group. Other have also described the way that CBGEP instructors have understood that the exercise programme is more than just a social opportunity but it "provided something unique and helped participants to feel as though they were part of something bigger" (Hawley-Hague et al. 2016, p. 124).

The source of the togetherness in this current study in part stemmed from the fact that they were peers, with shared health challenges. This potentially added to a sense of camaraderie in that no one was *"the odd one out".* The togetherness also generated a unique sense of feel within the group; over time participants felt at ease with one another and at home within the group. The author would suggest that this sense of feel was of paramount importance in supporting participant adherence to the CBGEP. It was the insider, internal sense of feel, emotions or mood which appeared to filter how the group was experienced. This insider view of the way the world is experienced has its roots in the lifeworld. The concept of the 'lifeworld' was highlighted by Edmund Husserl as he tried to make:

> "the nature of human-world intimacy more explicit…the beginning place-flow from which we divide up our experiences into more abstract categories and names" (Todres et al. 2007, p. 55).

As such, the lifeworld is understood as "an experienced world of meaning" (Todres et al. 2007, p. 55). Thus, in this current study, the insider feelings of togetherness, belonging and 'at-homeness' expressed by participants were important in understanding their experienced world of meaning. The way the CBGEP made participants feel on the inside supported their adherence.

Summary of Proposition Four: Social

In summary, this current study indicated that there was strong support for the social features of CBGEP in aiding participant adherence. Many of these social

characteristics have previously been reported in the literature around older people's exercise adherence. For example, the social interactions have been noted to add to participants' networks and serve as a source of support, enjoyment and belonging (Hartley and Yeowell 2015; Farrance et al. 2016; Hawley-Hague et al. 2016). As such, CBGEP appear to offer a means for older people to maintain social connectivity over the latter part of their lives. The social, group dynamic of the programmes added to participants' wellbeing by providing social, supportive environments potentially adding social capital.

In particular, what this current study adds to the literature around the social aspects of CBGEP is further support for the importance of the sense of togetherness and belonging experienced by participants. This appeared to affect the way the participants felt about the group. Furthermore, it reveals the importance of the lifeworld as a viewpoint in understanding "an experienced world of meaning" (Todres et al. 2007, p. 55) with regards to CBGEP adherence. The notion of the lifeworld has been used as a philosophical foundation underpinning our perspectives for humanising healthcare (Todres et al. 2007). This current author would suggest that the lifeworld as an experienced world of meaning, can also support perspectives for humanising older people's adherence to CBGEP.

6.2.5. Study Proposition Five: Participant Perceived Benefits

Initial proposition: *Participant perceived benefits are noteworthy in influencing participant adherence to community-based group exercise programmes.*

Revised proposition: *Participant perceived physical and psycho-social benefits are noteworthy in influencing adherence to community-based group exercise programmes.*

This proposition is related to the role in which participant perceived benefits play in influencing adherence. The initial proposed proposition was expanded based on the findings of the three cases to be more explicit in stating the importance of the physical and psycho-social perceived benefits.

The physical benefits reported in this current study are similar to those reported in other studies involving CBGEP such as participant reported outcomes of reduced weight, increased stamina, fitness, strength, improved balance, coordination, sleep, and walking ability (Fox et al. 2007; Chiang et al. 2008; Stathi et al. 2010; Garmendia et al. 2013; Kirby and Kluge 2013; Hartley and Yeowell 2015). In this

current study, the perceived physical gains were reported to be important in helping participants maintain their daily independence.

Psychological benefits reported in this study, such as the way the CBGEP helped lift participants mood if they were feeling low, reduced anxiety, added enjoyment and a level of achievement are also noted in the literature around older people's adherence to CBGEP (Fox et al. 2007; Chiang et al. 2008; Stathi et al. 2010; Garmendia et al. 2013; Kirby and Kluge 2013; Hartley and Yeowell 2015). In addition the social benefits were also important drivers in this current study and have been reported on in more depth under proposition four (see Section 6.2.4).

What was noteworthy in this current study was that the CBGEP helped some participants self-manage their long-term physical health conditions such as neck or back pain. This is important because whilst exercise is recommended to help individuals manage painful long-term conditions, such as osteoarthritis (NICE 2014), it is also known that adherence to exercises for long-term conditions is low (Ben Salah Frih et al. 2014). Therefore, what this current study has shown is that these CBGEP have provided an avenue for individuals to be empowered to self-manage some of their long-term health conditions.

The maintenance of healthy behaviour, such as remaining physically active is thought to be dependent upon an individual's perceived satisfaction with the experienced and expected outcomes or gains (Rothman 2000). Thus, adherence will be maintained only if people are satisfied with their tangible outcomes. This was evidenced in this current study whereby participant perceived benefits appeared to be central to maintaining adherence to the CBGEP. Importantly, the expression of fun and enjoyment as a benefit of attending appeared to be key in all three cases. This is supported in the literature with older people reporting that enjoyment was an important factor for exercise participation (Kolt et al. 2004; Fox et al. 2007; Chiang et al. 2008; Garmendia et al. 2013; Kirby and Kluge 2013; Hartley and Yeowell 2015).

The words fun and enjoyment require further explanation. The term fun has been argued as being an experience of distraction; distraction in the sense that concerns and problems are no longer the focus and as such is thought to satisfy an important psychological need (Blythe and Hassenzahl 2004). This potentially explains the way that the CBGEP in this current study served as an avenue for participants to escape the worries of everyday life. The term enjoyment refers to "the good feelings people experience when they break through the limits of homeostasis – when they do

something that stretches them beyond what they were" (Seligman and Csikszentmihalyi 2000, p. 12). It is enjoyment which is thought to lead to personal growth and long-term happiness (Seligman and Csikszentmihalyi 2000). Thus, there are elements of focus and absorption in enjoyment (Blythe and Hassenzahl 2004). The role of enjoyment is important because the experience of enjoyment is central to maintaining a habit (Sassatelli 1999; Crossley 2006). This has been noted in the context of gyms where it is the regular exercisers who express enjoyment since their involvement in the gym becomes fun because it is seen as a form of play (Crossley 2006). It is this sense of fun which is linked to a capacity to maintain attendance (Sassatelli 1999). Thus, the concepts of fun and enjoyment are closely linked with regards exercise adherence.

Furthermore, pleasure is thought of as a deeper form of enjoyment (Blythe and Hassenzahl 2004). Whilst the term pleasure was not used explicitly by participants in this current study there is arguably evidence of various types of pleasure within the findings. To help in understanding the role of pleasure and PA in more depth the findings from this current study will be discussed in relation to four types of pleasure associated with older people's engagement with PA.

A typology of pleasures for PA in older age has recently been developed by Phoenix and Orr (2014). Four distinct types of pleasure are highlighted: sensual pleasure, the pleasure of habitual action, the pleasure of immersion, and documented pleasures (Phoenix and Orr 2014). Three of these elements were present in this current study. Firstly, elements of sensual pleasure were experienced. Sensual pleasure relates to the role of the senses and how they connected people to the pleasures they experienced whilst exercising (Phoenix and Orr 2014). Sensual pleasure was particularly evident for participants in Case 2 (the outdoor exercise programme). The pleasure of being outside in the fresh air, the sound of the birds and seeing the wildlife was a highly positive feature of that particular CBGEP. Secondly, there was evidence of pleasure in the habitual action of exercise in this current study. The pleasure of habitual action is defined as the need to adhere to habitual behaviours as demanded by regular involvement in PA (Phoenix and Orr 2014). This was noted in this current study in the way that attending the programme regularly provided a sense of routine to participants and served as a reason to leave the house. Thirdly, the pleasure of immersion was recognised. This is expressed in bringing together the body and mind (Phoenix and Orr 2014). In this current study it was noted in the way that the programme helped participants escape the stresses and anxieties of everyday life. The CBGEP afforded participants time to themselves

away from their caring roles when they could switch off and focus on something else. This notion of escapism has similarly been reported in participants who regularly attend gyms as a way to immerse themselves and take their mind off day-to-day concerns (Crossley 2006).

Documented pleasure, the process and outcome of documenting the activity was the only pleasure not identified in this current study. In reality it is understood that pleasure is a complex phenomenon which is not limited to a discrete set of categories. However, the aspects of pleasure noted above serve to illuminate the complicated, intricate nature of pleasure with regards to sustained PA.

The above has highlighted some of the pleasures experienced by older people in relation to PA. In addition, this current study found that being together as a group added a further perspective on the source of the enjoyment. The social elements of being together, the fun and laughter experienced, the appreciation of one another's company, the group feel were key sources of enjoyment. The togetherness and belonging appeared to add enjoyment beyond the actual physical activity. Understanding the source of the pleasure in its multiple dimensions is important if CBGEP are to be a successful means of PA promotion long-term. Thus, the findings of this study not only support the previous literature around the role of the social benefits of participating in group exercise (Hawley-Hague et al. 2016) but also in relation to the role in which a sense of belonging and togetherness can add to exercise enjoyment (Hartley and Yeowell 2015; Hawley-Hague et al. 2016). The notion of togetherness is particularly important as a humanising dimension. Togetherness relates to the understanding that as humans, an individual's uniqueness is only able to exist in relation to others, in belonging and community. The relevance of this humanising dimension in this current study will be discussed further in Section 6.3.

Summary of Proposition Five: Participant Perceived Benefits

The physical health benefits of sustained exercise are well documented (Chodzko-Zajko et al. 2009). However, whilst the perceived physical gains were recognised by participants in this current study as an important outcome, the psycho-social gains were also essential. Understanding these broader gains is important because emphasising the positive gains associated with PA engagement is key in optimising uptake (Brawley and Latimer 2007). Thus, if CBGEP are to be promoted the psycho-social gains as well as the physical need to be affirmed. Most notably, this

current study highlights the importance of the role of fun, enjoyment and the notion of togetherness in supporting adherence to CBGEP.

This current study has also provided evidence for the role of CBGEP in supporting participants' self-management of long-term health conditions such as back or neck pain. This is important because education and self-management are key priorities for the NHS (Naylor et al. 2015). Thus, CBGEP are of interest to those who commission services as an effective opportunity for supporting and empowering older people to manage their long-term health conditions.

6.2.6. Study Proposition Six: Energising and Empowering Effects

Initial proposition: *Energising and empowering effects are noteworthy in influencing participant adherence to community-based group exercise programmes.*

Revised proposition: *Energising and empowering effects are not clearly expressed in this current study in relation to participant adherence to community-based group exercise programmes.*

This proposition is related to the role in which energising or empowering effects may have had in influencing sustained participant adherence to CBGEP. Energising and empowering effects were not present as an explicit theme in any of the cases included in this current study. However, some energising and empowering effects were evident in the data. Case 1 and Case 3 referred to the energising effects which served as an individual motivator and perceived benefit. Case 2 noted the empowering effect of the sense of physical achievement at the end of the CBGEP. Following the explanation building technique (see Section 5.6) there was a lack of cumulative evidence to support the proposition of energising and empowering effects in contributing to participant adherence to CBGEP.

The lack of evidence to support this proposition is interesting given the role of energising and empowering effects as noted in the systematic review (see Section 2.4.3). Furthermore, the empowering nature of exercise has been seen in other studies involving older people. Olsen et al. (2015) noted that older people with mild to moderate dementia gained a sense of empowerment in their everyday lives as a result of taking part in a high-intensity exercise programme in a nursing home. Empowerment was similarly experienced by a group of 50-75 year olds involved in a cycling promotion programme (Zander et al. 2013). The energising effects of exercise training for adults (mean age 50 years, SD 14 years) have also been documented (Puetz et al. 2006).

The seeming lack of evidence of energising and empowering effects in this current study may have been related to how the data were coded during the inductive analysis rather than a total absence of energising and empowering effects. Within the systematic review (Chapter 2), the energising and empowering effects stemmed from the social atmosphere, fun and banter between the group members, or the incentive of leaving the house (Fox et al. 2007; Chiang et al. 2008; Dunlop and Beauchamp 2013; Garmendia et al. 2013; Kirby and Kluge 2013). This current study also had evidence of a social atmosphere, fun and banter as well as the fact that each CBGEP presented an opportunity for participants to leave their homes. Therefore, despite a lack of explicit reference by participants to the energising and empowering effects, the component parts may yet have been present. Furthermore, each case contained references to the role of agency in participant adherence. This was expressed in participants' free choice to continue to choose to exercise as well as their desire to take control of their future and actively seek to maintain independence through PA. Therefore, some discussion around empowerment in relation to agency would be beneficial in the light of the results of this current study.

Empowerment is a debated term with Ibrahim and Alkire (2007) listing 29 definitions in current use. Conceptually, empowerment is related to terms such as agency, autonomy, self-confidence, self-worth, and self-direction (Narayan 2005). What is most relevant in relation to this current study is the way that empowerment has been described as an expansion of agency (Ibrahim and Alkire 2007). This is important because the ability to choose and act freely is directly conducive to quality of life and wellbeing (Sen 1992). Choice and its subsequent freedoms were evident in the findings in this current study particularly in relation to agency as a dimension of humanisation (see Sections 4.1.8, 4.2.8 and 4.3.8).

Furthermore, empowerment can be framed in the sense of having power and "being able to exercise it and obtain the benefits thereof" (Uphoff 2005, p. 219). Rowlands (1997) suggests this power can take four different forms: power over (controlling power); power to (creating new possibilities); power with (acting in a group); and power from within (self-acceptance and self-respect). Ibrahim and Alkire (2007) build on Rowlands (1997) typology of power by proposing that the four aspects of *choice, control, change* and *communal belonging* could act as indicators of agency which could lead to empowerment. Despite the fact that the work of Ibrahim and Alkire (2007) was developed in the context of empowerment in low-economic countries, there are some parallels within this current study.

Participants in this current study exercised a *choice* to engage in the CBGEP. This free choice was explicitly expressed as being important by some participants. There was a sense that the CBGEP aided participants in taking *control* of their lives and their ageing process; participants used the CBGEP to help them maintain independence. Participants reported on the physical and psycho-social *changes* they perceived at an individual level through their engagement in the CBGEP. These were expressed in improved strength, balance, fitness, and energy, which in turn contributed to maintaining independence in daily life. Participant adherence to the CBGEP led to a feeling of *communal belonging*. This helped participants feel more at home and secure within the group. Thus, these CBGEP seem to represent a group of older people who are empowered through these various aspects of agency (choice, control, change, and communal belonging) described by Ibrahim and Alkire (2007).

Furthermore, work by The Young Foundation (Hothi et al. 2008) suggests that neighbourliness and empowerment adds to wellbeing. That is to say, wellbeing is higher amongst those who have regular contact with their neighbours, and this contact is empowering. This links to the importance of proposition four regarding the social role within CBGEP adherence. Those who are "well-connected are more likely to be hired, housed, healthy, and happy" (Woolcock 2001, p. 65). Therefore, the added connections made between participants through their adherence to CBGEP may add to their empowerment which could impact upon their wellbeing. This was supported by the findings of the systematic review within this current study whereby the source of the energising and empowering effects were seen to come from the social connections made between participants. Therefore, despite the lack of direct reference to empowerment within the cases, the social networks built within the CBGEP may yet have led to an empowering effect.

With regards to the energising effect of exercise, a quantitative synthesis of 70 studies (n= 6,807, mean age 50, SD 14 years) on the effect of exercise training on the feeling of energy and fatigue showed that exercise is associated with a feeling of increased energy and decreased fatigue (Puetz et al. 2006). Furthermore Fox et al. (2007) also reported on the energising effects of exercise via a CBGEP for older people ≥ 70 years. Participants in the study by Fox et al. (2007) identified how adherence to the CBGEP resulted in a greater energy and motivation in other aspects of their lives. Within this current study, participants in Case 1 commented upon the energising effects of the CBGEP which served as an individual motivator. In Case 3, the energising effect was noted as a perceived benefit of adherence to

the CBGEP. Thus, the energising effect of the CBGEP was referenced by some participants. However, the lack of consistent reference to energising effects may mean that it is not of paramount importance for participants as a function of ongoing adherence.

Summary of Proposition Six: Energising and Empowering Effects

There was a lack of evidence within the findings to support the proposition regarding the role of energising and empowering effects in helping participants sustain adherence to CBGEP. However, the above discussion proposes some suggestions regarding the role in which empowerment and agency may play in relation to remaining connected and belonging to a local community. The notion of social networks, wellbeing, empowerment, and agency are not new. However, the proposal of the role of CBGEP as a conduit to maintaining local connections and thus providing empowering effects is thought to be new.

6.2.7. Rival Theories

Socio-Economic status

Rival Proposition One: *What is the evidence to support the rival proposition that high socio-economic status was noteworthy in explaining participant adherence to the CBGEP?*

This rival proposition addressed through this current study related to the role in which socio-economic status (SES) may have played in participants' exercise adherence. The author recognises that a case study is not the optimal research design for establishing the influence of SES upon participant adherence. However, it was nonetheless necessary to collect data around SES given the importance of this rival proposition.

Literature states that individuals from a higher SES report higher levels of exercise and greater adherence (Cohen et al. 1999; Murray et al. 2012; Picroelli et al. 2014). This is attributed to the fact that those from a higher SES report fewer barriers to exercise (Murray et al. 2012). Additionally, those from a lower SES have fewer opportunities to exert personal control or influence events that can affect their lives, thus making it harder for them to participate in positive lifestyle behaviours such as exercise (Murray et al. 2012). This is important to address in relation to this current study since it may have been that participants' socio-economic backgrounds were responsible in explaining their adherence to the CBGEP.

In this current study participants from Case 1 and 2 were from higher socio-economic backgrounds and participants from Case 3 were from a lower socio-economic background (see Section 5.7.1). This suggests that adherence for participants from Case 1 and 2 may in part have been influenced by their high SES. However, participants in Case 3 were from a lower SES. This suggests that adherence for participants in Case 3 may not have been critically influenced by their SES. Therefore in relation to this rival proposition there was mixed evidence for the role of SES in explaining participant adherence in this current study. It is therefore not possible to conclude definitively whether SES was notable in explaining ongoing participant adherence. Nonetheless, it does raise the possibility of a further proposition. Perhaps if the other factors (such as instructor, programme design, social, participant perceived benefits, and a humanised exercise environment) are in existence within a CBGEP then adherence may he high regardless of SES.

Previously Formed Exercise Habits

Rival Proposition Two: *What is the evidence to support the rival proposition that previously formed exercise habits were noteworthy in explaining participant adherence to the CBGEP?*

As discussed in Section 6.2.1 (factors related to the individual) participants in this current study mentioned past PA experiences as a factor which may have contributed to their current adherence. This is important because having exercise habits can influence PA initiation and adherence (van Stralen et al. 2009). For this reason having previously formed PA habits was considered a potential rival theory at the outset of the study. Thus, it could have been that participants in this current study adhered not because of factors related to the CBGEP but because they have always exercised.

In order to consider this rival explanation of previously formed exercise habits, participants were questioned as to their subjective sense of whether they had had an active, somewhat active or inactive lifestyle. Across the three cases the majority of participants self-reported having had an active lifestyle in the past (74%).The small number of study participants limit meaningful conclusions being drawn. However, this might indicate that their initiation and adherence to the exercise programme for some participants was an extension of their lifelong activity habits. However, 26% of participants reported having a somewhat or inactive lifestyle. Therefore, for other participants, their adherence to the CBGEP may have been unrelated to any prior exercise habits. Given the above, it is not possible to confirm

or refute the proposition that participants in this current study adhered because this was a continuation of their already active lifestyle.

6.3. Application of the Humanisation Framework

The application of the humanisation framework (Todres et al. 2009) was important in this current study in gaining further depth of understanding of participant adherence to CBGEP from a more humanised perspective. This section discusses the findings from this humanised viewpoint. To be concerned with humanisation is "to uphold a particular view or value of what it means to be human, and furthermore to find ways to act on this concern" (Galvin and Todres, 2013 p. 10). The philosophical underpinnings and methodological use of the humanisation framework are explained in more detail in Section 3.9.2.

When the humanisation lens was applied to the qualitative findings, there was evidence of all eight humanising dimensions (agency, embodiment, insiderness, personal journey, sense making, sense of place, togetherness, uniqueness) being present in each case. The results of this analysis can be seen in Chapter four, Sections 4.1.8, 4.2.8, and 4.3.8.

To summarise the findings: *agency* was evidenced in the way participants had the freedom to make their own choice with self-selecting their level of exertion with exercises. There was freedom to be their *unique* selves and exercise within the limits of their *insider* challenges of an ageing body. Through this non-judgemental exercise environment there was an *embodied* understanding of who they were as people. Furthermore, the exercise programme became part of their *personal journey*. This journey helped inform their future by enabling them to keep active and maintain independence, allowing them to continue engaging in the world. The friendships they formed and the peer support which ensued helped them *make sense* and add meaning to their experiences and personal health challenges. As participants became familiar with one another there was a *togetherness* and belonging which grew. This led to a feeling of homeliness as they found a *sense of place* within the exercise group and exercise environment.

Thus, given the above, a highly humanised environment appeared to be present in each of the CBGEP. It is suggested that this in part stemmed from the way the instructors treated the participants. The instructors considered the insider experiences of participants. They treated each participant uniquely and worked with exercise participants at an individual level where necessary to adapt exercises so

that all could exercise their freedom to engage in the CBGEP. The instructors' demonstrated care and commitment to participants, for example by contacting them if they were absent or sending get well cards if they were unwell. Thus, the instructors in these cases appeared to have had a highly humanised approach which integrated the head, hand, and heart (Galvin and Todres 2013). That is to say, the instructors had the technical head knowledge necessary to lead exercise programmes, but this was combined with the practical ability to implement that knowledge with an empathic understanding.

The sense of being treated as a human is a crucial element of what needs to happen to be considered caring (Galvin and Todres 2013). Therefore, the humanising environment was a caring environment. This was evidenced not just with the instructors as discussed above, but also in the way participants treated one another. Participants were aware of each other's uniqueness; they empathised with their insider challenges and appreciated the togetherness. As such their care and consideration for each other appeared to add to the humanising environment.

Highlighting the humanising elements of these CBGEP emphasises the positive values embedded in these programmes. They underline the importance of the individual and the human spirit. This is something that has been said to be missing from previous waves of public health interventions. As Hanlon et al. (2011) suggest there is a need to rebalance our models from:

> "a mechanistic understanding of the world and of ourselves as mechanics who diagnose and fix what is wrong with individual human bodies or communities, to organic metaphors where we understand ourselves as gardeners, enabling the growth of what nourishes human life and spirit, and supporting life's own capacity for healing and health creation." (Hanlon et al. 2011, p. 35).

The humanising nature of these CBGEP supported the understanding of individuals as organic authors of their lives. Participants existed within the fragile limits of their human bodies yet continued to engage in the world. Their journey, sense of place and uniqueness was not expressed in isolation but in their togetherness; as they co-created with others. In this humanising environment, through their support, shared advice and experiences, they had the potential to add to the wellbeing of other programme participants.

Understanding the cases through the existential question of what it means to be human helps in accounting for the more humanised aspects of adherence to CBGEP. The author therefore suggests that the humanising dimensions of the CBGEP seen in this current study may lead to an implicit feeling which impacts upon participant adherence.

Oz (2011), through his peer-to-peer work on reducing childhood obesity, suggests that "people do not change their minds based on what they know; they change based on what they feel" (p. 432). In application to this current study this author would suggest that people do not adhere to a CBGEP purely based on what they know (although this has a role, e.g. participants commenting that they heard on the radio that people who exercise are less likely to get Alzheimer's). However, coupled with this, there is a further aspect which supports adherence based on how participants feel and their lived experience. This experience is broader than feelings in reference to the notion of pleasure. This 'feel' potentially stems from the humanising environment. It is to do with intangible aspects that link to companionship and a sense of belonging which occurs in a caring, humanised environment.

To explore the potential effect of the humanising environment further the author wishes to draw upon the work of Leder's (1990) notion of forming one-body. This term is used not in reference to the bounded individual self or physical body but "a form that is permeable to, and indeed inseparable from, the wider world" (Nettleton 2015, p. 128). Leder (1990) writes that:

> "this body's roots reach down into the soil of an organismic vitality where the conscious mind cannot follow…Through the lived body I open to the world" (Leder 1990, p. 173).

Leder (1990) discusses the porosity of bodies whereby the experience of absorption allows a form of one-body through an aesthetic opening to the world. For example, through the experience of walking in a forest, the environment can imbue our senses; we absorb the landscape, breaking down the distinction between the corporeal and incorporeal aspects of body and place. Perhaps this is some of what participants in Case 2 were alluding to when they expressed their appreciation of the outdoor exercise environment. More than this though, it is suggested that there is an experience of absorption which takes place because of the humanising environment. It may be that this humanising feel is the intangible sense of feel and ''at-homeness'' that some participants commented upon. Furthermore, this

suggestion of the permeating influence of the humanising environment allows us to consider the deep, inward human experience. It may be this human experience which has been missing from the external world of behaviour change. As such, the presence of a humanising exercise environment could be a vital key in helping older people sustain adherence to CBGEP.

Summary of the Application of the Humanisation Framework

The humanisation framework as applied in this current study has added new knowledge in terms of becoming more informed of the humanising dimensions of CBGEP adherence. The source of the humanising environment was multiple. It was created by the instructor, by the individual participants through their shared support and sociability, and by the programme design. It is therefore suggested that one of the antecedents to the long-term adoption of a sustained behaviour change in the form of PA could relate to the happening upon an exercise environment (a group of people, place, or community) where older people are treated in a humanised way. It was not just the exercise environment which appeared to be important but the humanising quality of that environment.

Furthermore, the application of the humanisation framework in this current study has highlighted the importance of the human spirit. The role of the individual and human spirit has been seen as relatively unimportant historically in public health interventions (Hanlon et al. 2011). However, models are now being called for which consider how to nourish the human life and spirit (Hanlon et al. 2011). The CBGEP in this current study, with their humanising environment appear to have been successful in nurturing the human spirit.

A further novel notion from this current study relates to the suggestion of the porosity of the body. Just as the body absorbs a beautiful landscape, so too may the body absorb this humanising environment. In doing so, an intangible sense of feel and ‘at-homeness’ could be said to be generated which makes participants feel more human and nourishes their spirits. This also provides a sense of belonging, companionship, and togetherness which supported ongoing adherence to the CBGEP.

6.4. Thematic Schema

Based on the main findings of this study as discussed above, the following aspects were found to be important in explaining older people’s adherence to CBGEP: factors related to the individual, the instructor, programme design, social, participant

perceived benefits, and a humanising environment. These factors have been used to develop the following thematic schema which illustrates the conceptual interactions in relation to older people's adherence to CBGEP (Figure 6.2).

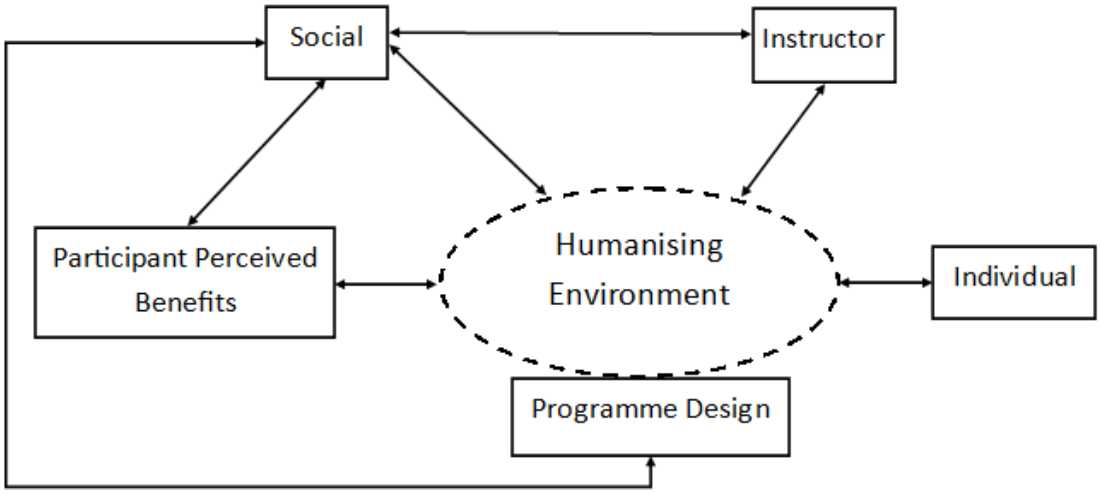


Figure 6.2 Thematic Schema Illustrating the Conceptual Interactions in Relation to Older People's Adherence to Community-based Group Exercise Programmes

The findings from this current study have added a new, important element to the initial thematic schema presented in Chapter two (see Figure 2.3). The systematic review (Farrance et al. 2016) suggested that social connectedness was at the heart of the programme. Whilst the social aspects continue to be of vital importance in supporting participant adherence to CBGEP, the application of the humanisation framework has added further depth. Based on the findings from the current study it is now suggested that the quality of the humanising environment is central to adherence.

In the above schema, the core element of the humanising environment is encircled by a dashed line indicating the porous nature of the environment where the other factors related to adherence permeate as they interact. The dual directions of the arrows assist in representing some of this complexity. Programme design is situated at the base of the humanising environment. This was done purposefully to emphasise the foundational nature of the aspects of location, affordability, programme timing, adaptability of the exercises, safety, music, and group nature of the programme in preventing participant dissatisfaction, thus supporting adherence. The presence of each individual has the potential to influence and be influenced by the humanising environment. Furthermore, the humanising environment appeared

to flow from the instructor, the individual participants, and their social interactions (as supported by the programme design). The perceived benefits, particularly the psycho-social benefits such as the enjoyment and sense of fun, belonging and 'at-homeness' experienced from being with peers emphasised the importance of the lifeworld associated with ongoing adherence to the CBGEP. The author suggests that it is the existence of the factors related to the individual, instructor, programme design, social, and perceived benefits as evidenced in each case which enabled participants to experience a humanising environment. Consequently, this experience of a highly humanising environment and the way this made participants feel appeared to support their adherence to the CBGEP.

Therefore, what the above schema adds is the perspective of having a humanising environment at the heart of CBGEP in order to promote long-term, sustained adherence. This humanising environment highlights the importance of the way that these programmes helped people feel more human and emphasises the importance of the individual and the role of the human spirit.

6.5. Strengths and Limitations of the Study

6.5.1. Strength of the Study

There were several strengths to this current study. The use of a mixed-methods systematic review to understand the area of older people's adherence to CBGEP was an asset. This added new knowledge in terms of synthesising the views of older people with regards their adherence to CBGEP as well as updating the literature base on long-term adherence rates to CBGEP. Furthermore, the systematic review highlighted the importance of programme design, particularly having an individual and adaptable content as being important across all interventional studies of CBGEP.

Whilst case study has been used in previous studies of older people's adherence to CBGEP, these were from constructivist paradigms (Dunlop and Beauchamp 2013; Kirby and Kluge 2013). Thus, this is the first time that the author is aware of where a post-positivist approach towards case study has been utilised in studying older people's adherence to CBGEP. This post-positivist perspective is important because it allowed theoretical propositions as derived from the literature to be utilised as a means of understanding older people's adherence to CBGEP. Case study was also of advantage since it afforded the opportunity to study the phenomenon of adherence in great depth. This was important because PA

behaviours are complex (Weinberg and Gould 2011). Thus, methodologies are required which allow for the complexity of these behaviours.

A major strength of this study was that data were obtained directly from older people. This afforded them the opportunity to describe their experience using their own words. This was seen to be positive on the part of study participants and they commented that: *"It's very good to have people who are interested in us and what we do"* (Female, 81 years, Case 1) and *"You don't feel quite so faceless"* (Female, 77 years, Case 1). This further supports the choice of methodological approach, the selected research design and data collection methods.

A further strength of the study was the fact that the researcher intentionally chose to study successful programmes (defined as adherence rates of ≥ 69.1% for ≥ 1 year), in a real-life context. To date, the researcher is aware of only one study (from Canada) that chose participants in a real-life context who had displayed long-term adherence for the explicit purpose of studying 'success' (Dunlop and Beauchamp 2013). Thus this current study is unique, being the first of its kind to study older people's adherence to CBGEP in a real-life, UK context, from a long-term (≥ 1 year) perspective. The real-life context of the study is an important asset since participants recruited for an interventional RCT are recruited differently to community exercisers, thus generalisability is limited between populations (Martin and Sinden 2001). Findings from this current study are thus highly relevant in terms of real-life CBGEP. In addition, the cases included in this current study have all demonstrated ongoing sustainability to their programmes. The financial sustainability is particularly important in this present economic climate where programmes which have demonstrated sustainability are highly valued.

The final strength of this current study is in the use of the humanisation framework (Todres et al. 2009). Work with the humanisation framework is in its infancy. To date it has been applied to the care of older people living with dementia (Cash et al. 2011; Borbasi et al. 2013), public health (Hemingway 2012), high performance sport (Kavanagh and Brady 2013), and undergraduate nurse education (Phillips et al. 2015). However, this is the first time the humanisation framework has been used to study older people's sustained exercise adherence and as such is unique.

6.5.2. Limitations of the Study

This current study was subject to several limitations. This study only considered individuals who had been attending the CBGEP. There are many people who do not have this opportunity and the issue of how we engage with others who would benefit from this type of group is not addressed. Participants were self-selecting and thus might represent a highly motivated group of older people introducing potential bias. This means there is limited application to older people who drop out of CBGEP or to those who may be less social but still choose to exercise. Another limitation was the lack of data collected on ethnicity due to an omission by the researcher.

Additionally, this study was limited to older people from one county in the South-West of England. Further cases should be selected from other counties using a similar study design to increase the applicability of the findings.

The concept of data saturation may be seen as a limitation within this study. Data saturation is concerned with the:

> "building of rich data within the process of inquiry, by attending to scope and replication, hence, in turn, building the theoretical aspects of inquiry" (Morse 2015, p. 587).

Saturation can be in achieved in terms of data saturation or theoretical saturation (Walker 2012). The former is concerned with the continual sampling of participants within a study until the data set reaches repetition with no new information being generated (Bowen 2008). The latter occurs when no new themes are identified within the data (Guest et al. 2006). The challenge in this current study with regards data saturation was that there were a limited number of participants in each case who consented to be involved in the study. This is recognised as a limitation. However, the use of three cases with the goal of producing replication logic served to support the concept of theoretical saturation.

A further limitation of this study comes from the weakness of participant observation as a method of data collection since there is a risk that the presence of the researcher may influence the findings (Hemingway and Jack 2013). This risk of bias was addressed by having participants check a summary of the study findings as well as discussing the findings with other researchers. Additionally, the use of methodological triangulation (observation, focus groups, documentation, and interviews) was employed to allow the phenomenon of adherence to be understood from many perspectives at different levels by revealing a layering of meanings.

6.6. Reflexivity

This section considers the influence I may have had as a researcher on the study as well as how the research has influenced me. Being explicit in this reflexive practice is suggested to be important in bridging the gap between "the abstract understanding of doing research and the actual practical details of a research process" (Renganathan 2009, p. 3).

In this current study my presence as a researcher, particularly during the time spent in participant observation may have influenced the research process. Although I attempted to adopt a mid-point position between outsider-insider the reality is probably more complex. For example, in Case 1 the instructor commented that in the early stages of participant observation she felt that participants behaved differently. She observed that they were more quiet than usual. However, after several weeks the instructor remarked that they were behaving in their usual manner again. This served to highlight to me that my presence in the CBGEP affected how participants behaved as well as the fact that I had moved from being more of an 'outsider' to an 'insider' position on the researcher continuum (see Figure 3.3).

The other way my presence may have complicated the data collection process was around the blurring of the researcher-physiotherapist divide. I was introduced to the participants as a physiotherapist carrying out a research project. However, in several instances one instructor asked for physiotherapeutic input for participants. I found this put me in a difficult position where I felt that some of my insider stance had been lost. With hindsight it would have been more prudent for me to have introduced myself at each CBGEP purely as a researcher. However, at the time of seeking out relevant CBGEP I felt my identity as a researcher-physiotherapist carried more credibility.

The process of carrying out this research had a profound impact on me and my thinking around physical activity. As a physiotherapist who came from practice with many years clinical experience this research journey has greatly challenged my thinking around the role of exercise. At the outset of the study, the point of greatest concern for me was how we help older people achieve the national guidelines of 150 minutes moderate intensity exercise per week to prevent the onset of NCD. This view stemmed from my biomedical training and subsequent biomedical

paradigm. However, reading the literature in greater depth highlighted the importance of breaking up sedentary behaviour and that even if an individual is able to attain the 150 minute exercise goal they are still at risk of NCD if they spend their remaining time sitting down. Coupled with this knowledge was the personal challenge to myself of remaining active and non-sedentary whilst carrying out a highly sedentary job. I did not want to be a hypocrite and espouse the importance of exercise and movement when sitting at a desk many hours a day. In addition to this I realised that I held an underlying, rather simplistic belief that if we provide people with information then they will change their behaviour, i.e. that information would lead to transformation. Personal experience has reminded me that this is not necessarily the case.

Therefore, whilst I still appreciate the importance of moderate intensity activity and breaking up sedentary behaviour, I now have a greater understanding of how this may be mediated. For example, having a moderate intensity programme in a social, humanised environment may bring health gains beyond those purely achieved from the exercise component of the CBGEP. This is not to say that the exercise is unimportant. However, my previously blinkered view of the priority of the physical gains alone over the broader psycho-social gains such as enjoyment, fun, and being together with peers (which were highly regarded by participants), should be of equal priority. In all three cases, the CBGEP were perceived to be fun. And why shouldn't exercise be fun? Who of us will truly adhere to a behaviour which is not fun?

6.7. Dissemination of Research Findings

Findings from this current study have been disseminated in several ways (Appendix 16). By using a wide variety of dissemination means it is hoped that study findings will be able to impact the academic community, practitioners, and the general public.

The results of the systematic review have been published in the journal Preventive Medicine (Farrance et al. 2016). The systematic review findings were presented at the World Confederation of Physical Therapy Congress in Singapore in May 2015 and Bournemouth University Postgraduate Conference (Bournemouth, January 2015 – 2nd prize poster presentation and 3rd prize oral presentation awarded). Preliminary findings from the main study were presented at the Occupational Science Europe International Conference (Bournemouth, September 2015), British Heart Foundation National Centre Conference (Loughborough, September 2015),

European Public Health Conference (Milan, October 2015) and Bournemouth University Postgraduate Conference (Bournemouth, March 2016 – 1st prize oral presentation awarded).

In order to gauge the impact of the findings on NHS practice, preliminary findings were presented to an integrated community rehabilitation team in the Dorset locality (November 2015). The results were also presented at a local Bournemouth Rotary Club meeting (April 2016).

To make the findings more widely available and relevant to a variety of age groups, several events will be held as part of the Bournemouth University Festival of Learning event in June 2016. This will include an 'Ageing Well Photo Exhibition', an intergenerational taster exercise class, and a 'hook a duck' game for children. Funding for the photographic exhibition was obtained from a small grant from the British Society of Gerontology (awarded December 2015).

6.8. Summary

This chapter has discussed the research findings in relation to the research question, study propositions, and the humanisation framework. A revised thematic schema was presented. This illustrated the way that the findings from this current study interacted conceptually in relation to older people's adherence to the CBGEP. In addition, the strengths and limitations of the study as well as a brief discussion of the researcher's reflexive account were presented. The chapter concluded with the ways in which the findings have been and will be disseminated. The final chapter of this thesis presents a synthesis of the empirical findings, theoretical, policy, and practice recommendations, before concluding with areas of further research which would be relevant in light of this current study.

7. Conclusion

The purpose of this study was to understand older people's adherence to community-based group exercise programmes (CBGEP). This is important because to realise the health and wellbeing gains associated with physical activity the behaviour must be sustained (Chodzko-Zajko et al. 2009).

A gap was identified in the literature regarding older people's long-term (≥ 1 year) adherence to real-life CBGEP in the UK. Previous studies in the field of older people's adherence to CBGEP were either not in the UK context or were under research trial conditions for a time limited period of up to one year. The current study therefore offers a unique insight into real-life programmes which have been successful in helping participants maintain adherence for a year or longer.

The current study found that older people's adherence to CBGEP was mediated through six factors. Firstly, there were factors related to the individual. Those who adhere to CBGEP long-term have hedonic and eudaimonic motivations which help sustain their adherence. This was noted in the pleasure and enjoyment participants experienced as well as their desire to maintain health and independence for the future. This is the first time this has been reported in relation to older people's adherence to CBGEP. Additionally, this study highlighted that, for some participants, the CBGEP acted as a mental escape where they could forget their day-to-day worries. This was especially important for those who play a considerable role in caring for their spouse or other family members, and is new knowledge in relation to the role of CBGEP. The application of the Life Thread Model added new understanding in regards to the way in which a shared sense of belonging may help participants continue adhering in spite of personal challenges, thus maintaining the thread of physical activity on the continued life journey.

Secondly, this study corroborated findings from previous studies with regards the importance of the competent, knowledgeable, approachable characteristics of the instructor in supporting adherence to the CBGEP. However, in addition this study advanced knowledge by the use of the humanisation framework by providing further understanding as to why the instructor was so important. It was the *way* in which the instructors treated participants which was pivotal. They treated each participant uniquely, understanding their insider challenges but supporting them in a way that helped them maintain agency and engage with the programme. This made participants feel cared for and helped them find their sense of place in the group.

Thus, the humanised way in which the instructors treated participants supported adherence and is new knowledge.

Thirdly, several aspects of programme design promoted adherence, namely location, affordability, the use of music, adaptable content, and the flexibility of the programme in accommodating both competitive and non-competitive personalities. What is novel in this current study is the way that these factors are suggested to work as 'hygiene' factors in that they did not necessarily add to participant satisfaction but had they not been present adherence rates may have been affected negatively.

Fourthly, the CBGEP facilitated a highly social environment, as reported in previous literature around CBGEP (Hartley and Yeowell 2015; Hawley-Hague et al. 2016). However, what this current study highlights is the way in which the social aspects of the CBGEP provided a means for older people to maintain social connectivity over the latter part of their lives. Furthermore, the social aspects of the CBGEP added to a feeling of belonging and togetherness. This meant that participants felt at home in the group. It is suggested that this insider, internal sense of feel, as experienced by participants was vital in supporting adherence to the CBGEP.

Fifthly, participants perceived physical and psycho-social benefits which supported their ongoing adherence. Specifically, the CBGEP was noted to empower participants to self-manage painful long-term health conditions, such as back or neck pain. This has not been reported before and is important not only in enabling individuals to maintain independence, but also in the context of financial challenges on the health service where self-management of long term conditions may reduce health care costs (Naylor et al. 2015). In addition, the psycho-social benefits, as well as the physical, need to be affirmed, particularly the way in which the CBGEP were experienced as being fun and enjoyable, promoting a sense of togetherness. Participants seemed unlikely to adhere to a programme long-term that did not meet these psycho-social needs. This again supports the understanding that the humanised way the CBGEP made people feel was important in supporting adherence.

Finally, and perhaps most importantly, the humanising environment evidenced in these CBGEP was noted as being pivotal in aiding ongoing participant adherence. The humanising quality of the exercise environment and the way it nurtured the human spirit led to an intangible sense of feel and 'at-homeness' within the CBGEP. This, together with the social nature of the group, provided a sense of belonging and

togetherness which promoted participant adherence. This is the first time the humanisation framework has been used in relation to older people's exercise adherence. It therefore adds new knowledge in terms of being more informed about the humanising dimensions of CBGEP adherence. The humanising qualities of these CBGEP must be considered if older people are to be supported in sustaining a physically active lifestyle as they age.

A further notable, original contribution from this current study stems from the author's interpretation of the notion of the porosity of the body as an experience of absorption as built upon the work of Leder (1990). Just as the body absorbs a beautiful landscape, so too may the body absorb this humanising environment. In doing so, an intangible sense of feel and 'at-homeness' could be said to be generated which made participants feel more human and nourished their spirits. This also provided a sense of belonging, companionship, and togetherness which supported ongoing adherence to the CBGEP.

The above findings are important because they add to the literature around understanding older people's adherence to CBGEP. As such, it is important to apply these findings in relation to theoretical, policy and practice recommendations.

This work contributes to the theoretical literature around what supports older people's adherence to CBGEP by highlighting the central importance of the presence of a humanising exercise environment. This is the first time this has been reported in the literature and is integral in supporting older people's sustained involvement in CBGEP as a form of PA.

As noted in the systematic review there is a lack of consensus on the definition of 'adherence'. As such, future studies investigating exercise adherence should carefully consider how adherence is defined as a measure of long-term attendance. The author would propose reporting on programme adherence and individual adherence rates separately as measures of overall programme retention and individual adherence respectively. Furthermore, this author would suggest a minimum of ≥ 1 year as a baseline from which adherence may be deemed to occur in order to account for the sustained aspect of exercise adherence.

In terms of policy recommendations, this study would be of interest to policy makers and commissioners. This would be helpful because an awareness of these findings would aid the development of services which would be effective in promoting

adherence to PA, thus seeking to reduce the risk of developing non-communicable diseases and supporting social connectivity. Specific recommendations based on the findings of this current study to promote exercise adherence to CBGEP in older people are detailed in Appendix 17.

The findings of this current study are relevant to practitioners. Firstly, evidence from the quantitative component of the systematic review demonstrated that CBGEP have adherence rates of almost 70%. As such, health care practitioners should consider directing older people to these types of programmes as a possible means of encouraging sustained PA. Secondly, evidence from the study suggests that CBGEP offer a means by which social connectivity and networks can be maintained by older people in the latter part of their lives. Maintaining these connections is important because there are increased health risks related to social isolation (Holt-Lunstad et al. 2010). Finally, this study would be of interest to those involved in running CBGEP. Holding workshops locally for CBGEP facilitators and instructors would be a helpful starting point in disseminating the research findings. This would ensure that those involved with running CBGEP are aware of the views of older people and their reasons for adherence and incorporate these views into the programme design to stimulate adherence.

As a result of this current study, further areas for research have been highlighted. Exploratory qualitative studies of the notion of escapism as a concept in supporting adherence to CBGEP for those who act as a main carer would be important. This would add further understanding to how carers can be supported to continue in their vital roles. Further research is required with regards the humanisation framework and adherence to CBGEP. This could be carried out by using the humanisation framework as a value base with which to examine practices in CBGEP with a range of adherence rates. In addition, phenomenological studies employing the experience of the lifeworld as a means of studying the ‘felt’ experiences of belonging and togetherness - as generated from the social impact of the group - would add to understanding around the more humanising perspectives of adherence to CBGEP.

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Appendices

Appendix 1: Protocol Published on PROSPERO

International Prospective Register of Systematic Reviews

UNIVERSITY of York
Centre for Reviews and Dissemination

NHS
National Institute for Health Research

PROSPERO International prospective register of systematic reviews

Review title and timescale

1 Review title
Give the working title of the review. This must be in English. Ideally it should state succinctly the interventions or exposures being reviewed and the associated health or social problem being addressed in the review.
Initiation and on-going adherence to community based group exercise interventions in older people: a mixed-methods systematic review.

2 Original language title
For reviews in languages other than English, this field should be used to enter the title in the language of the review. This will be displayed together with the English language title.

3 Anticipated or actual start date
Give the date when the systematic review commenced, or is expected to commence.
17/03/2014

4 Anticipated completion date
Give the date by which the review is expected to be completed.
01/10/2014

5 Stage of review at time of this submission
Indicate the stage of progress of the review by ticking the relevant boxes. Reviews that have progressed beyond the point of completing data extraction at the time of initial registration are not eligible for inclusion in PROSPERO. This field should be updated when any amendments are made to a published record.

The review has not yet started ×

Review stage	Started	Completed
Preliminary searches	No	Yes
Piloting of the study selection process	No	Yes
Formal screening of search results against eligibility criteria	Yes	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

Provide any other relevant information about the stage of the review here.

Review team details

6 Named contact
The named contact acts as the guarantor for the accuracy of the information presented in the register record.
Clare Farrance

7 Named contact email
Enter the electronic mail address of the named contact.
clare.farrance@bournemouth.ac.uk

8 Named contact address
Enter the full postal address for the named contact.
Bournemouth House 17-19 Christchurch Road Bournemouth BH1 3LH

9 Named contact phone number
Enter the telephone number for the named contact, including international dialing code.
01202 963024

10 Organisational affiliation of the review
Full title of the organisational affiliations for this review, and website address if available. This field may be completed as 'None' if the review is not affiliated to any organisation.

Appendix 2: Systematic Review, Published in Preventive Medicine

Preventive Medicine 87 (2016) 155–166

Contents lists available at ScienceDirect

Preventive Medicine

journal homepage: www.elsevier.com/locate/ypmed

Review Article

Adherence to community based group exercise interventions for older people: A mixed-methods systematic review

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ABSTRACT

Objective. Lifelong physical activity provides some of the best prospects for ageing well. Nevertheless, people tend to become less physically active as they age. This systematic review assessed the views and adherence of participants attending community based exercise programmes of ≥6 month's duration.

Method. Searches were carried out in eight online scientific databases (January 1995–May 2014) to identify relevant primary studies. Studies were assessed for quality and data extracted. Results were synthesised thematically and narratively. Qualitative findings were compared against quantitative studies.

Results. A total of 2958 studies were identified and screened against the inclusion/exclusion criteria. Ten studies met the inclusion criteria (five quantitative, three qualitative and two mixed-methods study designs). None were excluded on the basis of quality. Six key themes were identified from the qualitative studies as important for adherence to group exercise programmes: social connectedness, participant perceived benefits, programme design, empowering/energising effects, instructor and individual behaviour. The mean adherence rate of studies with comparable measures was (69.1% SD 14.6). When the views of participants from the qualitative synthesis were juxtaposed against the quantitative studies, programme design was a common feature across all studies.

Conclusion. Evidence surrounding these programmes is limited both in terms of long-term adherence measures and the views of participants. However, based on limited findings there is some indication that community based group exercise programmes have long-term adherence rates of almost 70%. Incorporating the views of older people into programme designs may provide guidance for innovative interventions leading to sustained adherence.

Contents

Abbreviations: NDCs, Non-communicable diseases; CBGEP, Community based group exercise programmes; PA, Physical activity.

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0091-7435/

Appendix 3: Case Study Protocol

A. Overview of the Case Study

1. Purpose of this Study

To understand the factors which contribute to older people's long-term adherence to community-based group exercise programmes.

2. Case Study Questions and Propositions

a) Case study question: How and why have older people sustained adherence to three community-based group exercise programmes in the South West of England?
b) Case study propositions:

- *Individual behaviour* is noteworthy in influencing participant adherence to community-based group exercise programmes.
- *Instructor behaviour* is noteworthy in influencing participant adherence to community-based group exercise programmes.
- *Programme design* is noteworthy in influencing participant adherence to community-based group exercise programmes.
- *Social connectedness* is noteworthy in supporting participant adherence to community-based group exercise programmes.
- *Participant perceived benefits* are noteworthy in influencing participant adherence to community-based group exercise programmes.
- *Energising and empowering effects* are noteworthy in influencing participant adherence to community-based group exercise programmes.

3. Theoretical Framework

a) Determinants of health (Dahlgren and Whitehead 1991) used as the theoretical basis for the development of the questionnaire data collection
b) Humanisation framework – as a possible means to examine data in depth

4. Role of Protocol

a) To clarify and guide field procedures

b) To standardise field procedures across cases

B. Data Collection Procedures

1. Name of Persons Doing the Field Work

a) Lead researcher: Clare Farrance
b) Supervisory team to assist with data collection as their schedule allows: Dr Carol Clark, Dr Fotini Tsofliou
c) Access to case study sites: Researcher approached the programme instructors and they agreed to allow the lead researcher to attend the programmes and invite participants to participate in the study

2. Human Subjects Protection

a) Researcher gained ethical approval from Bournemouth University Research Ethics Committee
b) Sample participant information sheet and consent form

3. Sources of Data

a) Questionnaires relating to participant demographics, lifestyle features (smoking, alcohol, physical activity, diet), social (networks and perceived support), socioeconomic features
b) Archival data – participant attendance records
c) Participant observation (field notes)
d) Focus groups
e) Documents – including information contained on programme websites and leaflets or policy documents
f) Case study protocol updated to include instructor interviews as a further source of data

4. Resources Required

In order to complete the case study successfully the following resources will be required:

a) Computer access and location for writing: Provided by Bournemouth University (BU)
b) Digital recorders: To be sourced through BU. To avoid any data loss two recorders will be used for all data collection in case there is a fault with one.
c) A colleague to assist with observations notes during focus groups: Project supervisors have agreed to make themselves available for assisting in this role.
d) Regular supervisory input will be sought on a monthly basis to assist and guide the lead project researcher.

C. Data Collection Questions

a) The key questions the case study seeks to answer are in an explanation building manner in relation to the theoretical propositions set out at the start of the study.

- What is the evidence to support the proposition that individual behaviour is noteworthy in influencing the high adherence rate?
- What is the evidence to support the proposition that instructor's behaviour is noteworthy in influencing the high adherence rate?
- What is the evidence to support the proposition that the programme design is noteworthy in influencing the high adherence rate?
- What is the evidence to support the proposition that the social aspect of the group is noteworthy in influencing the high adherence rate?
- What is the evidence to support the proposition that participant perceived benefits were noteworthy in influencing the high adherence rate?
- What is the evidence to support the proposition that the energising and empowering effects were noteworthy in influencing the high adherence rate?

b) What rival explanations have been identified and may warrant further exploration?

- High adherence rates were due to participants bring from a high socioeconomic demographic
- High adherence rates were due to the fact they participants have always been exercisers throughout their lifespan

D. Guide for the Case Study Report

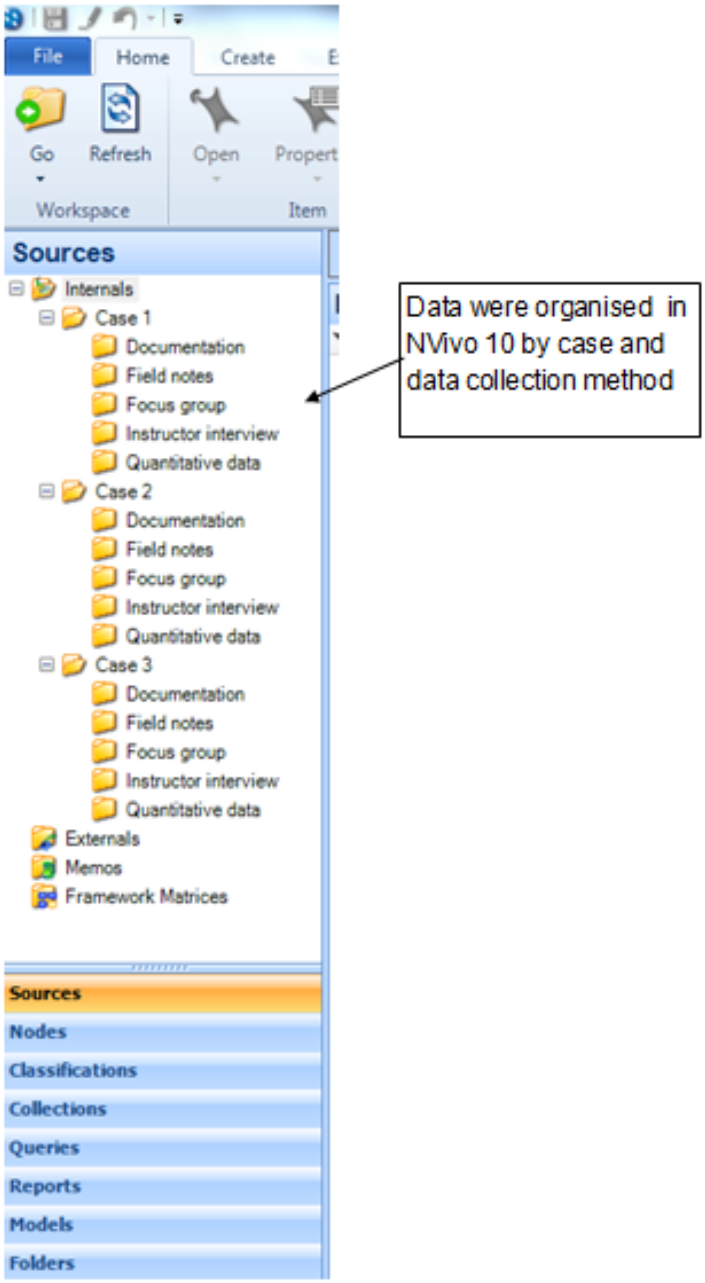
a) The intended readers of this case study are the thesis examiners and as such the final document was presented with this audience in mind

b) Report outline:

- Description of the case (important to frame the context of the case)
- Presentation of demographic details of participants
- Presentation of quantitative data (important in relation to the context of the study)
- Presentation of archival data (reflection of adherence rate)
- Findings of qualitative data analysis (participant observation, focus groups)
- Explanation building process
- Discussion of findings in relation to literature base
- Conclusions
- Recommendations

Appendix 4: Case Study Database

Illustration of how NVivo 10 was used as a case study database to store electronic data by case and method



Appendix 5: Record of Supervision

Table of Research Meetings October 2013 – April 2016

Date	Topic	Supervisors Present
2 October 2013	Introduction to the research project by the researcher to the supervisors. Initial title: Tackling the invisible burden of physical inactivity in the elderly	CC, FT, JM
8 November 2013	Researcher began scoping exercise to locate local CBGEP. Feedback from supervisors on initial background writing by the researcher.	CC, FT
22 November 2013	Discussed current literature base around current exercise guidelines for older people. Researcher fed back on initial meetings with potential CBGEP for the current study. Requirement to increase depth of understanding around research philosophy and methodology. Researcher attended NVivo training at BU.	CC, FT
12 December 2013	Reading and critiquing around mixed-methods research.	CC, FT
21 January 2014	Further discussion of the methodology and refining of research question and study title. Proposed title: Factors influencing initial attendance and ongoing adherence of older persons in community-based physical activity programmes.	CC, FT
17 February 2014	In-depth discussion around the humanisation framework and how this informed the study. Bournemouth University Health and Safety risks re data collection discussed. Initial review submitted. Researcher attended systematic review masterclass at Bournemouth University.	CC, FT
17 March 2014	Initial draft of systematic review protocol written by researcher. Initial title of systematic review: Initiation and adherence to community-based exercise interventions in older people: A systematic review. Initial review completed.	CC, FT
23 April 2014	Use of validated questionnaires discussed. Systematic review now a mixed-methods review. Protocol for systematic review written and published on PROSPERO. Gantt chart reviewed and on track to date.	CC, FT
22 May 2014	Case study selected as most appropriate methodology for the study. Systematic search completed for systematic review and cross checked by FT.	CC, FT
24 June 2014	Systematic review papers selected and cross checked by FT.	CC, FT
28 July 2014	Quality appraisal and data extraction of included systematic review papers carried out and cross checked by CC and FT. Qualitative themes discussed in supervision and additional meetings with CC and FT. CBGEP for Case 1 and Case 2 selected.	CC, FT

5 Sept 2014	Ethics completed included health and safety forms and participant information and consent forms. First, second and third syntheses from systematic review completed.	CC, FT
16 October 2014	Ethical approval granted. Data collection with first case commenced. Publication and conference presentation of systematic review discussed. Research question revised: How and why had this group of older adults' initiated and maintained adherence to community-based group exercise programmes? Researcher felt a third case was necessary to understand adherence to CBGEP from lower socio-economic areas.	CC, FT
11 November 2014	Data collection Case 1 continued. First draft of systematic review for publication prepared. CBGEP for Case 3 selected and additional ethical approval gained.	CC, FT
9 December 2014	Data collection Case 1 continued. First draft of transfer document prepared. Focus group guide prepared. Systematic review edited for publication in Preventive Medicine.	CC, FT
19 January 2015	Transfer document edited. Further work on systematic review for publication. Systematic review findings presented at BU Postgraduate Conference. Discussed use of humanisation framework in a priori manner.	CC, FT
17 February 2015	Data analysis Case 1. Field notes and focus group initial findings from Case 1 discussed. Application of humanisation framework in a priori manner carried out.	CC, FT
17 March 2015	Transfer document submitted. Data analysis Case 1 continued. Data collection Case 2 commenced. Abstract submitted to Occupational Science Europe International Conference	CC, FT
14 May 2015	Systematic review presented at WCPT conference in Singapore. Transfer viva completed. Research question evolved to focus on adherence aspect of CBGEP: How and why have older people sustained adherence to three community-based group exercise programmes in the South West of England? Qualitative data discussed with supervisors. Abstract submitted to European Public Health Conference.	CC, FT
15 June 2015	Initial data analysis Case 1 completed and first draft of case report written. Further discussion of qualitative data Case 1 and 2. Data collection Case 2 completed. Data analysis Case 3 commenced. Data collection Case 3 underway.	CC, FT
22 July 2015	Qualitative data discussed Case 1, 2 and 3. Initial case report Case 2 drafted. Data collection Case 3 completed. Abstract submitted for the British Heart Foundation National Centre Conference, Loughborough.	CC, FT

16 September 2015	Additional meetings with supervisors to cross check data from cases. First draft of findings chapter written. Research presented at Occupational Science Europe International Conference and British Heart Foundation National Centre Conference.	CC, FT
27 October 2015	Research presented at European Public Health Conference, Milan. Explanation building chapter drafted.	CC, FT
24 November 2015	Revisions to systematic review manuscript discussed. Discussion chapter writing underway.	CC, FT
22 December 2015	Systematic review manuscript re-submitted to Preventive Medicine. Initial draft of discussion chapter completed. Development of new knowledge and uniqueness of study discussed.	CC, FT, JM
26 January 2016	Input on Chapters 4-6 (findings, explanation building and discussion). Systematic review accepted for publication.	CC, FT
7 March 2016	Input on Chapters 2 and 3 (literature review and methodology). Thesis merged into one document. Systematic review published in Preventive Medicine.	CC, FT
4 April 2016	Initial feedback on thesis as a complete document including need to revisit the introduction and emphasise novel findings explicitly.	CC, FT, JM
26 April 2016	Feedback on the thesis as a whole with particular reference to the discussion and conclusions.	CC, FT, JM

Appendix 6: Bournemouth University Research Ethics Committee Study Approval

Research Ethics Checklist

Reference Id	5103
Status	Approved
Date Approved	13/10/2014

Researcher Details

Name	Clare Farrance
School	Health and Social Care
Status	Postgraduate Research (PhD, MPhil, DProf, DEng)
Course	Postgraduate Research
Have you received external funding to support this research project?	No

Project Details

Title	Factors influencing initial attendance and on-going adherence of older persons in community based physical activity programmes.
Proposed Start Date	13/10/2014
Proposed End Date	03/10/2016
Supervisor	Fotini Tsofliou

Summary (including detail on background methodology, sample, outcomes, etc.)
see attachment

Appendix 7: Participant Information Sheet

Bournemouth University

Participant Information Sheet

Invitation to participate in the study:
You are invited to participate in a research study carried out by a researcher from Bournemouth University. Before you decide, it is important that you understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. If there is anything you do not understand, or if you have any questions, please feel free to contact Clare Farrance. You will find contact details at the end of this information sheet. Thank you for reading this.

Title of this study:
Factors influencing adherence of older persons in community-based physical activity programmes.

What is the purpose of this study?
For a long time it has been known that by having a physically active lifestyle people can stay healthier for longer. However, many people do not stay as active as they grow older. This aim of this research is therefore to find out why the exercise class you attend seems to have been so successful in helping people stay active on a long-term basis.

Why have I been chosen?
You have been chosen to take part in this study because you have been attending this exercise class.

Do I have to take part?
It is up to you to decide whether or not to take part. If you decide to take part, please keep this information sheet. You will be asked to sign a consent form before you start the research. If you decide to take part you are free to withdraw at any time without giving a reason. Your decision not to participate or to withdraw will not affect any aspect of your participation in the exercise classes. If you do decide to withdraw, you may request that any or all of the information already collected be destroyed or withheld.

What will happen if I decide to take part?
Clare Farrance, a researcher from Bournemouth University is hoping to come and take part in your exercise class for a number of weeks. In this way Clare will be able to observe the interactions, day-to-day running of the class and if you agree, to chat to some of you informally about the exercise class.

She may ask you to fill in a questionnaire which should take no longer than 10 minutes to complete. The questionnaire will ask various questions about your age, your education, where you live, how often you see family and friends and how supported you feel etc. One of the research team will then ask you some questions face-to-face about your diet, physical activity levels and how much time you spend sitting down in a typical week. This should take no more than 20 minutes to complete. All this information will be kept confidential.

If you would like to, Clare may ask you to be part of a focus group (essentially a discussion group) or an individual interview. In the focus group there will be between 5 – 8 people from your exercise class taking part in the discussion which will be guided by Clare. There will also be someone else there from the university to help with taking notes. The group should last no longer than one hour and will be recorded on audio devices for analysis purposes. The recording is confidential and only the research team at Bournemouth University will have access to it.

To start with you will be asked to introduce yourself by saying your name so that your voice can be identified on the audio recording. The group will then be asked several open-ended questions about your experience of attending the exercise programme.

This information is important because it will help explore which factors influence attendance and longer term adherence to community-based physical activity programmes. Understanding this will help us know how to run these programmes in a way which will help more people stay active.

What are the benefits of taking part?
You will not receive any direct benefits from taking part in this study. However, it is hoped that the findings of this research will help us understand how we can help more people to be involved in an active lifestyle.

Are there any disadvantages to taking part?
Taking part in the study will take up your valuable time. Other than this there are no disadvantages.

Will the information I provide be kept confidential?
All the information that we collect about you during the course of the research will be kept strictly confidential. You will not be able to be identified in any reports or publications.

What will happen to the results of the research study?
The study findings will be written up as part of a PhD thesis as well as for publication in scientific journals.

Who is funding the research?
This research is funded by Bournemouth University.

Who is supervising the researcher?
This PhD research is supervised by Dr Carol Clark, Dr Fotini Tsofliou and Dr Jane Murphy.

Contact for further information:
If you have any further questions, concerns or complaints please contact the principle investigator, Clare Farrance on 01202 962534, by email at cfarrance@bournemouth.ac.uk or write to:

Clare Farrance, School of Health and Social Care, Bournemouth University
Royal London House (R313), Christchurch Road, Bournemouth, Dorset, BH1 3LT

Thank you for reading this information sheet.

Appendix 8: Participant Consent Form

Bournemouth University

Consent Form

Title of this study: Factors influencing adherence of older persons in community-based physical activity programmes.

Contact details of the researcher: Clare Farrance, PhD student, Bournemouth University. Tel: 01202 962534, Email: cfarrance@bournemouth.ac.uk

Contact details of project supervisor: Dr Carol Clark, Senior Lecturer Bournemouth University, Tel: 01202 963022, Email: cclark@bournemouth.ac.uk

Please initial here

I confirm that I have read and understood the participant information sheet for the above research project and have had the opportunity to ask questions.	
I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason and without there being any negative consequences. In addition, should I not wish to answer any particular question(s), I am free to decline.	
I give permission for members of the research team to have access to my anonymous responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research.	
I agree to take part in this study.	

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Name of participant	Date	Signature
---	---	---
Name of researcher	Date	Signature

Appendix 9: Health and Safety – General Risk Assessment Form

Bournemouth University General Risk Assessment Form

Before completing this form, please read the associated guidance which can be found via the Health & Safety Intranet pages. This form should be used for all risks except from hazardous substances, manual handling & Display Screen Equipment (specific forms are available for these). If the risk is deemed to be 'trivial' there is no need to formally risk assess or record.

All completed forms must give details of the person completing the assessment and be dated. Risk assess the activity with its present controls (if any), then re-assess if action is to be taken and after further controls are put in place.

The completed form should be kept locally within the School/Professional Service.

Clare Farrance (PGR) HSC **Date: 8/9/14**

1. Describe the Activity being Risk Assessed: Fieldwork – carrying out participant observation, focus groups and interviews with community dwelling adults over 60 who attend community-based exercise programmes. Participants will be asked to attend at a location known to them. The researcher will ensure there is adequate seating available and that participants are aware of where the fire exits are.
2. Location(s) Location to be negotiated prior to data collection with relevant risk assessments to be completed for each location.
3. Persons at potential Risk (e.g. consider specific types of individuals) PhD student: Clare Farrance Supervisors who may assist with data collection: Dr Carol Clark, Dr Fotini Tsofliou Programme leads of the exercise classes Participants of the exercises classes who have agreed via informed consent to attend the focus groups.
4. Potential Hazards (e.g. list hazards without considering any existing controls): No potential hazards are identified at this stage.
5. Any Control Measures Already In Place: The researcher will follow the current health and safety protocols that are currently in place in the selected locations.
6. Standards to be Achieved: (ACOPs, Qualifications, Regulations, Industry Guides, Suppliers instructions etc) N/A
7. Estimating the Residual Risk (e.g. remaining risk once existing control measures are taken into account) Choose a category that best describes the degree of harm which could result from the hazard and then choose a category indicating what the likelihood is that a person(s) could be harmed.

	Slightly Harmful (e.g. minor injuries)	Harmful (e.g. serious but short-term injuries)	Extremely Harmful (e.g. fatality, long-term injury or incurable disease)
Highly Unlikely	Trivial Risk x☐	Tolerable Risk ☐	Moderate Risk ☐
Unlikely	Tolerable Risk ☐	Moderate Risk ☐	Substantial Risk ☐
Likely	Moderate Risk ☐	Substantial Risk ☐	Intolerable Risk ☐

8. Note the advice below on suggested actions and timescales:	
Risk (from No.7)	**Action/Timescale**
Trivial Risk ☐	No action is required and no records need to be kept.
Tolerable Risk ☐	No additional controls are required, although consideration may be given to an improvement that imposes no additional cost/s. Monitoring is required to ensure that the controls are maintained.
Moderate Risk ☐	Efforts should be made to reduce the risk, but the costs of prevention should be carefully measured and limited. Any new measures should be implemented within a defined period. Where the moderate risk is associated with extremely harmful consequences, further assessment may be necessary to establish more precisely the likelihood of harm as a basis for determining the need for improved control measures.
Substantial Risk ☐	Work should NOT commence until the risk has been reduced. Considerable resources may have to be allocated to reduce the risk. Where the risk involves work in progress, urgent action MUST be taken.
Intolerable Risk ☐	Work should not be started or continued until the risk has been reduced. If it is not possible to reduce the risk even with unlimited resources, work MUST remain prohibited.

9. If 'Moderate' 'Substantial' or 'Intolerable': What New Control Measures are to be Considered to reduce risk?	**10. Referred to:**	**11. Date:**

12. Ensure those affected are informed of the Risks & Controls
(Confirm how you have done this e.g. written instructions):

Via liaison with the programme leads who will be responsible for selecting the appropriate location for the focus groups.

13. Person who did Assessment:	Clare Farrance	**14. Date:**	8/9/14	**15. Review Date:**	
16. Checked or Assisted By:		**17. Date:**		**18. Review Date:**	

Appendix 10: Health and Safety – Hazard and Activity Trawl Form

Bournemouth University Risk Assessment 'Hazard & Activity Trawl' Form

This form is designed as 'rough assessment' and checklist - to eliminate from consideration those risks on which no further action is required, and to indicate areas where a fuller 'risk assessment' should be carried out. Tick the boxes if relevant; cross them out if not.

This list is not exhaustive and does not cover every potential hazard, therefore be prepared to use the 'Other' boxes and expand as and where necessary.

Person(s) completing Trawl: Clare Farrance (PGR) Date: 8/9/14
School/Professional Service (or Section): HSC

Activities:

~~a) Biological Agents; use of *~~		q) Personal safety e.g. handling money/lone working/work where there is potential for violence	✓
~~b) Chemicals/fuels/high energy substances/ processes generating hazardous materials, dusts or fumes*~~		~~r) Placement of students on work experience~~	
c) Computers; staff use of*	✓	~~s) Practical course work by students~~	
~~d) Confined spaces, work in~~		~~t) Work with pressure vessels/ lines/compressed gases~~	
~~e) Construction and refurbishment~~		~~u) Food preparation/distribution~~	
~~f) Equipment; use, handling, storage of~~		~~v) Use of radioactive sources/radiation generators *~~	
~~g) Events; organising and running of~~		~~w) Repair/maintenance/servicing incl. work on electrical systems~~	
h) Fieldwork*	✓	~~x) School pupils on work placements~~	
i) General office work	✓	~~y) Sharps: use, handling, storage or disposal~~	
~~j) Home working~~		z) Societies: organising/ running	✓
~~k) Hot or cold surfaces, materials or liquids; work near or with~~		aa) Sports & exercise activities	✓
~~l) Practical work by final year or new postgraduate students~~		~~bb) Temporary Staff and visiting lecturers~~	
~~m) Lecturing~~		cc) Business Travel: UK/Overseas	✓
~~n) Letting of premises/housing~~		~~dd) Waste: handling or disposal of~~	
~~o) Lifting, moving and handling*~~		~~ee) Welding~~	
~~p) Use/ maintenance of machinery~~		~~ff) Work at night~~	
~~Others:~~		~~Others:~~	

* Separate assessment forms & procedures are available for these activities (see H&S Intramap)

Potential Hazard(s):

1. Falls from height		14. Ejection of fluid or objects	
2. Falling objects		15. Slips/trips	
3. Movement of Vehicles		16. Confined spaces	
4. Noise or Vibration		17. Lighting hazards	
5. Electrical hazards		18. High/Low Temperatures	
6. Fire or explosion		19. Weather factors	
7. Access/Egress from the workplace		20. Radiation	
8. Crushing		21. Dust/fumes	
9. Friction or abrasion		22. Water/Drowning	
10. Trapping or Shearing		23. Manual handling*	
11. Entanglement		24. Harmful Substances*	
12. Puncture/Stabbing		25. Postural hazards (e.g. from DSE)*	
13. Severing or Cutting		26. Violence	
Others:		Others:	

For those subjects ticked above, you now need to either:

- If deemed 'trivial risk', note as such (no further assessment or recording required).
- Arrange to remove the risk altogether.
- Refer to an existing procedure that already minimises the risk, or;
- Carry out a full risk assessment using the University's standard form (see I: Health and Safety/Public/Risk Assessment or H&S Intramap)

Please indicate here what actions are needed (continue on separate sheets if necessary):

Item	Details	Action Needed
c)	Use of computer, sitting at desk	Trivial risk, no further assessment needed
h)	Fieldwork	See separate risk assessment
i)	General office work	Trivial risk, no further assessment needed
q)	Lone working	Ensure colleagues know contact details, time and location of meetings. Researcher to contact colleague once meetings are completed.
z)	Societies running sports and exercise activities and business travel	Questionnaires and interviews only – trivial risk, no further assessment needed

Appendix 11: Questionnaires

Demographic and Socio-Environmental Questionnaire

Participant Identification Number for this Study: _____

Questionnaire

Thank you for taking time to complete this questionnaire. All your information will remain anonymous and confidential.

Section 1: First we would like to ask a few questions about you.

1. How old are you? _____

2. What is your gender?

☐ Female ☐ Male

3. What is your postcode? _____

4. What is the highest level of education you have completed? (Please tick)

☐ Some secondary school

☐ Completed secondary school

☐ Trade/ technical/ vocational training

☐ University graduate

☐ Postgraduate degree

☐ Other (please specify) _____

5. Are you presently employed? (Please tick all that apply)

☐ Full time

☐ Part time

☐ Not employed

☐ Retired

☐ Volunteer work

☐ Other (please specify) _____

6. Including yourself, how many people live within your household? _____

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7. What is your relationship status? (Please tick)

☐ Single/ never been married

☐ Married

☐ Separated

☐ Divorced

☐ Widowed

☐ Other (please specify) _____

8a. Do you smoke?

☐ Yes

☐ No

b. If no, have you ever smoked?

☐ Yes

☐ No

9. In a typical week, how much alcohol (beer, wine or spirits) do you drink?

☐ 0

☐ 1 – 3 drinks

☐ 4 – 7 drinks

☐ 8 or more drinks

10. How tall are you? (In feet and inches or cm) _____

11. How much do you weigh? (In stone or kg) _____

12. This question is about how you feel about your health. Please circle the number which you feel best describes how dissatisfied or satisfied you are with your health at present.

1	2	3	4	5	6	7
Not satisfied at all						Completely satisfied

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Section 2: Next we would like to ask some questions about your family and friends.

PART A: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement by ticking the relevant box. See the example below.

	1 Very strongly disagree	2 Strongly disagree	3 Mildly disagree	4 Neutral	5 Mildly agree	6 Strongly agree	7 Very strongly agree
Example: There is a special person who is around when I am in need					✔		
1.There is a special person who is around when I am in need							
2.There is a special person with whom I can share my joys & sorrows							
3.My family really tries to help me							
4.I get the emotional help and support I need from my family							
5.I have a special person who is a real source of comfort to me							
6.My friends really try to help me							
7.I can count on my friends when things go wrong							
8.I can talk about my problems with my family							
9.I have friends with whom I can share my joys and sorrows							
10.There is a special person in my life who cares about my feelings							
11.My family is willing to help me make decisions							
12.I can talk about my problems with my friends							

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PART B: See the example below. Please tick the most appropriate answer for you.

	0	1	2	3 – 4	5 – 8	9 or more
FAMILY: Considering the people to whom you are related either by birth or marriage.						
Example: How many relatives do you see or hear from at least once a month?			✔			
1.How many relatives do you see or hear from at least once a month?						
2.How many relatives do you feel at ease with that you can talk about private matters?						
3.How many relatives do you feel close to such that you could call on them for help?						
FRIENDSHIPS: Considering all of your friends including those who live in your neighbourhood.						
4.How many of your friends do you see or hear from at least once a month?						
5.How many friends do you feel at ease with that you can talk about private matters?						
6.How many friends do you feel close to such that you could call on them for help?						

Thank you for completing this questionnaire.

Physical Activity Questionnaire

Participant Identification Number for this Study: _____

Physical activity questions

Past physical activity levels

Would you say that in the past you have had a generally active, somewhat active or inactive lifestyle?

☐Active lifestyle

☐Somewhat active lifestyle

☐Inactive lifestyle

The Phone-FITT (Gill et al. 2008)

Now I'd like to ask you about some physical activities and find out how often you do them, for how long, and how out of breath you feel.

Household Activities

First, I'd like you to think about activities you did **around your home**, in a **typical week** in the **last month.**

[Interviewer: Ask about each activity listed in the following 2 charts. If respondent answers yes to engaging in activity (Q1), ask Q 2–4 for that activity; otherwise, skip to the next activity. Record answers in charts.]

1. In a **typical week** in the **last month**, did you engage in _____?

2. How many times/week did you do this?

3. About how much **time** did you spend on each occasion? [read categories]

4. On average when doing this activity, how did you feel? Were you . . . [read categories]

Activity	**(Q1) Participated?**	**(Q2) Frequency (x/week)**	**(Q3) Duration [Mark once only]**	**(Q4) Intensity [Mark one only]**
A. Light housework such as tidying, dusting, laundry, or ironing	☐Yes ☐No		☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation
B. Making meals, setting and clearing the table, and washing dishes	☐Yes ☐No		☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation
C. Shopping (for groceries or clothes, for	☐Yes ☐No		☐1-15 min ☐16-30 min	☐Breathing *normally* and able to carry on a conversation

example)			☐31-60 min ☐1 hour +	☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation
D. Heavy housework such as vacuuming, scrubbing floors, mopping, washing windows, or carrying rubbish bags	☐Yes ☐No		☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation
E. Home maintenance such as painting, raking leaves	☐Yes ☐No		☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation
F. Caring for another person (such as pushing a wheelchair or helping person in/out of a chair/ bed)	☐Yes ☐No		☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation

Recreational and Conditioning Activities

Next, I'd like you to think about activities you did for **recreation or conditioning** in a **typical week** in the **last month.**

Activity	**(Q1) Participated?**	**(Q2) Frequency (x/week)**	**(Q3) Duration [Mark once only]**	**(Q4) Intensity [Mark one only]**
G. Lifting weights to strengthen your legs	☐Yes ☐No		☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation
H. Other exercises designed to strengthen your legs (such as standing up/ sitting down several times in a chair or climbing stairs)	☐Yes ☐No		☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation
I. Lifting weights to strengthen your arms or other exercises to strengthen your arms (such as wall push-ups)	☐Yes ☐No		☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation
J. Other home exercises not already mentioned such as stretching or balance exercises	☐Yes ☐No		☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation
K. Walking for exercise	☐Yes ☐No		☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation
L. Dancing	☐Yes ☐No		☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation

M. Swimming	☐Yes ☐No		☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation
N. Bicycling	☐Yes ☐No		☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation

Seasonal Recreational Activities

Now I would like to ask you about two specific activities that are seasonal and about any other activities that you do.

[Interviewer: Ask about each activity listed in the following chart. If the respondent answers yes to engaging in activity (Q5), ask Q 6–8 for that activity; otherwise skip to the next activity. Record answers in chart.]

5. Do you _____?

6. (a) When you do this activity, how many times in a typical week do you do it?

(b) How many months in this past year did you do this activity?

7. About how much time did you spend on each occasion? [read categories]

8. On average when doing this activity, how did you feel? Were you . . . [read categories]

Activity	**(Q5) Participated?**	**(Q6) Frequency**	**(Q7) Duration [Read categories, mark one only]**	**(Q8) Intensity [Read categories, mark one only]**
O. Golf Mark: ☐use cart ☐do not use cart	☐Yes ☐No	A._____ ___ (x/week) B._____ ___ (number months/ year)	☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation
P. Garden	☐Yes ☐No	A._____ ___ (x/week) B._____ ____ (number months/ year)	☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation

Other Physical Activities

9. Do you participate in any other regular physical activities that we haven't asked you about?

☐Yes

☐No [Go to closing remarks]

[Interviewer: If respondent answers yes to Q 9, ask what the activity is, followed by Q 6–8 (as listed previously). Repeat this process for up to three "other" activities. Record answers in chart.]

Activity	**(Q6) Frequency**	**(Q7) Duration [Read categories, mark one only]**	**(Q8) Intensity [Read categories, mark one only]**
Q. Other # 1: _____	A._____ (x/week) B._____ (number months/ year)	☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation
R. Other # 2: _____	A._____ (x/week) B._____ (number months/ year)	☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation
S. Other # 3: _____	A._____ (x/week) B._____ (number months/ year)	☐1-15 min ☐16-30 min ☐31-60 min ☐1 hour +	☐Breathing *normally* and able to carry on a conversation ☐*Slightly* out of breath *but* still able to carry on a conversation ☐*Too* out of breath to carry on a conversation

Thank you very much for taking the time to complete this interview.

Mediterranean Diet Adherence Screen (MEDAS)

Participant Identification Number for this Study: _____

Mediterranean Diet Adherence Screener (MEDAS) (Schroder et al. 2011)

Questions	Criteria for 1 point (otherwise 0 recorded)	Participant response
1. Do you use olive oil as the principal source of fat for cooking?	Yes	
2. How much olive oil do you consume per day (including that used in frying, salads, meals eaten away from home, etc.)?	≥4 Tablespoons (1 tablespoon=13.5g)	
3. How many servings of vegetables do you consume per day? Count garnish and side servings as 1/2 point; a full serving is 200 g.	≥2	
4. How many pieces of fruit (including fresh-squeezed juice) do you consume per day?	≥3	
5. How many servings of red meat, hamburger, or sausages do you consume per day? A full serving is 100–150 g.	<1	
6. How many servings (12 g) of butter, margarine, or cream do you consume per day?	<1	
7. How many carbonated and/or sugar-sweetened beverages do you consume per day?	<1	
8. Do you drink wine? How much do you consume per week?	≥7 cups (1 cup = 100ml)	
9. How many servings (150 g) of pulses do you consume per week?	≥3	
10. How many servings of fish/seafood do you consume per week? (100–150 g of fish, 4–5 pieces or 200 g of seafood)	≥3	
11. How many times do you consume commercial (not homemade) pastry such as cookies or cake per week?	<2	
12. How many times do you consume nuts per week? (1 serving = 30 g)	≥3	
13. Do you prefer to eat chicken, turkey or rabbit instead of beef, pork, hamburgers, or sausages?	Yes	
14. How many times per week do you consume boiled vegetables, pasta, rice, or other dishes with a sauce of tomato, garlic, onion, or leeks sautéed in olive oil?	≥2	
		Total:

Thank you very much for taking the time to complete this interview.

Appendix 12: Focus Group Guide

Introduction of Participants: Could we begin by each of you telling us your first name and how long you have been coming to the exercise class for?

Question	**Probe**
How did you find out about the programme?	Word of mouth (reputation), family, friends, spouse, church, health care provider, benefits of exercise, location, like to exercise, beliefs, spiritual beliefs.
What made you start coming to the programme?	
What keeps you coming back to the programme?	Physical health (muscle strength, balance), mental health (mood), friends, location, class time, personality, feel good, beliefs, spiritual beliefs.
If you missed any classes, what were the reasons?	Transportation (getting here – friend gives you a ride), time conflict, location, not motivated. Vignette: If it was a cold, rainy day what would make you get out the door? If you'd been ill for a few weeks so hadn't been able to attend, what would motivate you to come back again?
What do you think may stop you coming eventually?	Cost, transport, health.
Is there anything about your personality which keeps you coming?	Independent, competitive, confidence
Is there anything about the class which keeps you coming back?	Location, cost, leadership
How does participating in the class make you feel?	Physical health (muscle strength, balance), mental health (mood), friends.
Is there anything about the way the class is led which keeps you coming?	
How does the social aspect of the class influence you coming?	Positive, does it not matter
What do you feel like after the class?	Energy, tired, motivated, empowered
[Have you participated in other exercise classes in the past? What's the difference between this programme and your other past experiences?	Transportation, location, class time, joined a gym.
Anything else anyone would like to add?	

Anything the note taker wishes to add?

Thank you for your time.

Appendix 13: Instructor Interview Guide

Instructor interview guide

- Tell me about your professional background and how you came to start this group (What was your motivation?)
- How long have you been running these classes for?
- Do you advertise the groups to recruit people?
- Can GPs refer people to you?
- What training have you had in running exercise classes?
- What motivates you to keep running the group?
- Can you tell me about the cost of the class for participants and what that includes?
- What do you think are the reasons for the group's success in having regular attendees?
- Do you plan your classes in any intentional way with the view of ensuring people do keep coming? (For example, do you ask the group for feedback?)
- If anyone has dropped out, do you know the reasons?
- Do you think there is anything about your personality which helps you with running the classes?
- Is there anything else you'd like to add?

Appendix 14: Case Study Data Sources and Storage

Data Source	**Data Type**	**Evidence Collected**	**Evidence Database Storage**
Questionnaires	Written questionnaires	Questionnaires from the CBGEP participants	Database A
Questionnaires	Excel spreadsheets	Excel data files containing questionnaire data	Database B
Archival records	Attendance records	Sessions attended by participants	Database B
Participant observation	Field notes	Field notes hard copy	Database A
Participant observation	Field notes	Electronic copy of field notes typed and expanded	Database B
Focus groups	Focus group recordings	Focus group data from the CBGEP participants	Database B
Focus groups	Focus group transcripts	Focus group data from the CBGEP participants	Database B
Documentation	Website information	Electronic copy of anonymised data collected from the CBGEP websites	Database B
Documentation	Programme leaflets	Hard copy of leaflets collected from CBGEP	Database A
Instructor interviews	Interview recordings	Interview data from the CBGEP instructors	Database B
Instructor interviews	Interview transcripts	Interview data from the CBGEP instructors	Database B

Database A: Locked filing cabinet.

Database B: Stored on a password protected computer.

Appendix 15: Example of Phase Two – Phase Five Thematic Analysis Based on Case 3 (Focus Group)

Phase 2: Generating initial codes	**Phase 3: Searching for themes**	**Phase 4: Reviewing themes**	**Phase 5: Defining and naming themes**
• Always been active with exercise • Attendance 4-5 years • Been to other classes • Challenges • Choice • Competitiveness • Cost • Could do more exercise • Desire to maintain health • Desire to stay independent • Doing me good • Don't like gyms • Enjoyable • Friendliness • Group feel • Harder to exercise at home - easier in a group • Heard about it from advertising • Helped organise the group initially (U3A) • Importance of other people • Individually adaptable content - work to own level • Initiation • Instructor • Keeps me going - keeps me mobile • Lack of men • Local class • Missed sessions • Mood lifter • More energy after class • Motivation different for people • Music enjoyable • Need to keep fit • Physical changes as you age • Physical environment • Routine changed regularly • Safety standards high • Sleeps better after class • Sociable • Somewhere to come once a week - routine • Support • Tired after class • Transition into retirement • Wife already attending • Word of mouth	• Attendance length • Benefits of attending • Individual - personal • Initiation • Instructor • Missed sessions • Motivation • Physical environment • Programme • Social - group dynamic	• Benefits of attending • Individual • Instructor • Programme • Social - group dynamic, support	• Factors related to the individual • Instructor • Participant perceived benefits • Programme design • Social – group dynamic, shared advice, support, experiences

Appendix 16: Research Outputs 2013 - 2016

Papers

Farrance, C., Tsofliou, F., and Clark, C., 2016. Adherence to community-based group exercise interventions for older people: A mixed-methods systematic review. *Preventive Medicine*, 87, 155-166.

Conference proceedings

Farrance, C., Tsofliou, F., and Clark, C., 2015. Adherence to community-based group exercise interventions in older people: A systematic review. *In: World Confederation of Physical Therapy Congress, 2 May 2015, Singapore*

Farrance, C., Tsofliou, F., and Clark, C., 2015. Evaluating the Views of Participants and Adherence Rates of Community-based Group Exercise Interventions: A Mixed Methods Systematic Review. *In: World Confederation of Physical Therapy Congress, 3 May 2015, Singapore*

Farrance, C., Tsofliou, F., and Clark, C., 2015. Understanding the Views of Older People in Adhering to Community-based Group Exercise Interventions: A Qualitative Systematic Review. *In: World Confederation of Physical Therapy Congress, 4 May 2015, Singapore*

Farrance, C., Tsofliou, F., and Clark, C., 2015. Understanding the views of older people in adhering to community-based group exercise interventions: A qualitative systematic review, *In: Bournemouth University Postgraduate Conference, 20 January 2015, Bournemouth*

Farrance, C., Tsofliou, F., and Clark, C., 2015. Older People's Adherence to Community-based Exercise Programmes: A Humanising Perspective, *In: Occupational Science Europe International Conference, 3 September 2015, Bournemouth*

Farrance, C., Tsofliou, F., and Clark, C., 2015. Community-based Group Exercise Programmes: Personalising the Approach to Physical Activity, *In: Just Good Medicine: The role of physical activity in the prevention and management of long term conditions,* 22 September 2015, Loughborough

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Appendix 17: Recommended Strategies to Promote Older People's Adherence to CBGEP

Categories	**Recommended strategies to promote older people's adherence to CBGEP**
Factors related to the individual	• Encourage older people to use their personality traits to help them exercise, for example, if an individual is competitive then pair them up with a similarly competitive person for some components of the programme. • Encourage individual, peer led exercise promotion by encouraging those who already attend to be advocates for the CBGEP. For example, instigating a 'refer a friend' scheme whereby those who invite someone new may receive an incentive such as one free session. Whilst this does not reach those who are harder to reach it does draw on people's natural networks thus still has value. • Promote CBGEP as an opportunity to add to health and strength for those who are in an active caring role for their spouse or family member.
Instructor	• Select CBGEP instructors based not only on their knowledge and competence but also on their flexibility in adapting exercises to suit individual needs as well as their caring, empathetic nature. • Have the instructor encourage informal meet ups and other social gatherings outside the exercise programme.
Programme design	• Where possible hold CBGEP in locations which are easily accessible, e.g. with adequate parking facilities, on a main bus route or in residential areas with high concentrations of older people. • Have flexible payment options with incentives where possible so that participants can self-select booking a whole block of session or on a pay-as-you go basis for those with poorer health who may struggle to attend regularly. • Have an individually adaptable programme content to allow participants to self-select their exercise level in an inclusive manner. • Design the programme to account for competitive and non-competitive personalities alike.
Social	• Ensure that the social aspects of the programme are promoted. • Encourage social interaction by providing opportunities to stay for a drink after the CBGEP.
Participant perceived benefits	• Promote CBGEP as a means of maintaining an independent lifestyle • Promote CBGEP as a means of self-managing long-term health conditions • Promote the fun, enjoyable aspects of CBGEP • Promote CBGEP as a means to increase social networks and social opportunities. • Use evaluation forms to have participants reflect on their personal physical improvements and other gains.

Humanising environment	• Agency: Provide participants with the freedom to self-select exercise intensity. • Embodiment: CBGEP need to foster a non-judgemental exercise environment whereby participants can exercise in such a way as they are not treated as a disease or object. • Insiderness: Have instructors who can empathise with the unique insider challenges faced by participants and adapt exercise content accordingly. • Personal journey: Have instructors take a lifelong approach towards participants in understanding that this CBGEP forms part of their personal journey and that the CBGEP enables participants to continue on their journey by assisting in maintaining independence. • Sense making: Provide opportunities for participants to socialise both within the CBGEP and outside the group to encourage peer support. • Sense of place: Foster an environment where through social interactions participants are able to find their place and sense of belonging within the CBGEP. • Togetherness: Provide opportunities within the CBGEP for participants to socialise and get to know one another in an effort to support a group sense of being together. • Uniqueness: Have instructors recognise the uniqueness of each participant so that they do not have to conform to the same exercise regimen.