Understanding factors that influence uptake to exercise referral schemes: A qualitative study of participant experiences

Sarah Beth Birtwistle

A thesis submitted in partial fulfilment of the requirements of Liverpool John Moores University for the degree of Master of Philosophy

In collaboration with 'Inspiring healthy lifestyles'

July 2016

Abstract

Understanding factors that influence uptake to exercise referral schemes: A qualitative study of participant experiences

Background: Physical inactivity has been found to be the fourth leading cause of mortality worldwide. The health benefits of participating in regular physical activity (PA) are well documented. Exercise referral schemes (ERS) promote PA and have been shown to have a positive impact on chronically ill and sedentary individuals, although some individuals do not uptake ERS once referred by a health professional (HP). Understanding barriers and facilitators to these programmes is important if uptake is to be increased and for population health to be enhanced. Due to the minimal qualitative research available of the uptake of ERS, past studies have cited that future research should explore ERS using this type of methodology in order to understand participant experiences.

Purpose: To explore participant experiences of referral to an ERS in the Northwest of England to understand the factors that influence uptake, and to understand how Self-Determination Theory (SDT) can explain participants' decisions whether to uptake, and how these factors relate to the wider Socio-Ecological Model (SEM). Participant experiences will be looked at from the perspectives of 'uptakers' (those who go on to start the ERS programme) and 'DNAs' (those who do not uptake the ERS programme following their referral).

Methods: Individuals referred to the ERS between October and November 2015 were eligible for the study (n=533). A random sample of 140 uptakers and 220 DNAs were invited to take part (DNAs were over-represented to account for the anticipated lower response rate), with the aim of recruiting a sample of approximately 40 participants (20 uptakers, 20 DNAs) to participate in semi-structured interviews, in total 38 interviews were conducted. Interviews explored individuals' reasons for referral, conversation with their HP and ERS staff and thoughts on improving uptake to the ERS. An inductive thematic analysis was used to explore what factors affect uptake to an ERS, followed by a theoretical analysis, drawing on SDT to understand how this theory can explain participants' experiences of uptake.

Results: The results from this study indicated that factors influencing uptake occur on multiple levels of the SEM (individual, interpersonal and organizational). Participants believed that individual motivation was important to take up the scheme, as was encouragement from the family. Additionally, participants expressed how HP qualities such as empathy, offering choice, especially that within the participant's capability, coming from their perspective, being given the freedom to make their own decisions as well as actively listening were positive, and were perceived to influence uptake. Lack of control to make personal decisions to uptake as well as organisational barriers such as work commitments were found to be reasons for non-uptake.

Conclusion: These results indicate that factors influencing uptake occur across all levels of the SEM. On the individual and interpersonal levels the factors reported by participants were aligned with the tenants of SDT. Participant reports suggested HPs displayed positive autonomy-supportive (eg. coming from patients' perspective, choice), competence-supportive (eg. offering activities within patients' capabilities) and relatedness-supportive (eg. actively listening, showing care) behaviours. Whilst it is not known to what extent these interactions with HPs influenced uptake, participant reports suggested positive needs support from HPs facilitated positive decision making. Further quantitative research is needed to understand the relationship between needs support, needs satisfaction and uptake to ERS.

Acknowledgements

I would like to extend my greatest thanks and gratitude to the following people, who without your support and guidance this project would not have been possible.

Dr Paula Watson, my director of studies, your constant guidance and unlimited support throughout this research project has resulted in this completed thesis. Thank you for providing me with clarity and the confidence to continue at the times I've needed it most. Your help will never be forgotten and will always be appreciated.

My supervisory team, Dr Rebecca Murphy and Dr Ivan Gee for your continued support and help throughout this project. Your input and feedback is greatly valued and it's been a pleasure to work with you both.

To Gina Ashcroft for her assistance throughout this project, especially during the data collection period. I value the support you have provided but also the friendship we've formed through working together…team #birtcroft!

My parents, who although are glad I did not write this thesis at home, have been a constant source of support, and my siblings, for providing endless motivation from across international waters! Although you've not been with me during this process I know your support and encouragement has always been unwavering.

Carol, Ian and Robin, thank you for putting with me, I really appreciate your endless words of encouragement and supported. Robin, I know I've been like moaning Murtle during the write-up phase of this project and although I've been ready to quit on numerous occasions, your kind and supportive words have allowed me to see the light at the end of the tunnel, so thank you.

Lastly, but by no means least, I'd like thank the Activity Referral Scheme staff for your continued support, and the participants of this study, because without you this project would not have been possible

Contents

List of tables

List of figures

Glossary and explanation of key terms

ARS = Activity Referral Scheme

DNA = 'Did not attend'

ERS = Exercise referral schemes

HP = Health professional

IHL = Inspiring healthy lifestyles

PA = Physical activity

SDT = Self-determination theory

SEM = Socio-ecological model

Uptaker =An 'Uptaker' in this study refers to an individual who following a referral from their health professional to the Activity Referral Scheme, goes on to book and attend a consolation with a ARS team member

DNA = A 'DNA' in this study refers to an individual who following their referral from a health professional to the Activity Referral Scheme does not book or attend a consultation in an ARS team member

Chapter 1

Introduction

1.1 Background

Globally, 1 in 4 adults are not deemed as sufficiently physically active (WHO, 2016), which increases the risk of developing a non-communicable disease, and therefore presents a major threat to public health. Exercise referral schemes (ERS) are seen as a method to increase physical activity (PA) amongst physically inactive individuals who have, or are at risk of developing a chronic medical condition (Fox et al, 1997) and are seen to be well placed to promote physically activity (Din et al, 2014).

The Activity Referral Scheme (ARS) operates as an ERS located in Wigan, in the Northwest of England, and is designed and run by the Inspiring Healthy Lifestyles (IHL), who offer a range of health initiatives to the local population. The ARS offers a 12 week programme of prescribed exercise classes to individuals who are physically inactive and who display risk factors towards developing, or already have a chronic medical condition. Individuals are referred to the programme through their health professional (eg. GP, Physiotherapist and Practice Nurse). Following their referral, individuals are required to book a consultation with an ARS staff member in order for an appropriate programme of exercise to be devised. Per annum, the scheme aims to see 3,500 new participants, and although a popular scheme with 70% of those referred taking up, 30% fail to either book or attend a consultation with an ARS member of staff.

The purpose of this research was to understand factors that influence uptake to the ARS in order to generate recommendations for the ARS, but may also be of interest to health practitioners and policy makers, to increase uptake to the scheme. This was achieved through exploring the participants' journey of referral, specifically looking at the interaction with their referring HP and consequent ARS staff. Self-Determination Theory was used to help explain an individual's decision whether to uptake the ARS, with this posited within the larger SEM.

1.2 Structure of the thesis

Chapter 2 begins with a literature review outlining current literature on the topics of PA and ERS, and also looks at these within the SDT and SEM theoretical framework. This chapter finishes with the rationale for using a qualitative design to answer the research question, and outlines the aims of this study and research questions. This leads to chapter 3, which discusses the methodological process used to obtain the data. Chapter 4 reports the research findings, following this, chapter 5 is a discussion relating to the findings of the study. This chapter finishes by outlining the recommendations for policy and practice, before finishing with a concluding remark about what has been learnt from this study.

Chapter 2

Literature Review

The aim of this study was to understand the factors that influenced uptake to the ARS, and understand how SDT can help explain participant experiences of uptake, situating these in the wider context of the SEM. In order to achieve this aim, the following research questions will be addressed

1. What factors influence uptake to the Activity Referral Scheme?
2. How does Self-Determination Theory help explain participants' decision whether to uptake to the Activity Referral Scheme?

The following review aims to present and discuss the current literature within the area of PA and health. It will detail the current research available regarding the uptake to ERS, and will discuss how SDT has been used to understand this relationship. The review will begin by looking into research regarding PA and health. It will then specifically look at the research available on exercise referral schemes, demonstrating how these can be used to improve population health. Quantitative research is discussed first, followed by qualitative research. The SEM will then be discussed, and how this helps us understand individuals' PA behaviour. Evidence will then be provided regarding the relationship between PA engagement and behaviour using a SDT framework. Finally, the rationale for using a qualitative methodology and aims of the research study will be outlined.

2.1 Physical activity & health

Physical inactivity was recently defined as the fourth leading cause of mortality worldwide (WHO, 2010), which is not only a concern for individuals, but for population health, due to the increased risk of developing non-communicable diseases. The health benefits of participating in regular and sustained PA are well documented (BNF National Centre, 2011, Department of Health, 2011). It has also shown to act as a preventative strategy against developing, as well as a mechanism in managing health conditions such as cardiovascular disease (Lee et al, 2012), diabetes, obesity and musculoskeletal disorders (Department of Health, 2011). Aside from the physical benefits, exercise

participation has shown to have a positive effect on an individual's mental wellbeing (Scully et al, 1998, Williams et al, 2007 & Johansson et al, 2011), especially if used as an intervention for those with pre-existing psychological conditions (Rosenbaum et al, 2014). The NHS guidelines recommend that adults participate in PA on a daily basis (NHS, 2015). Inclusive of this, it has been recommended that they should be participating in either 150 minutes of moderate PA (e.g. cycling, fast walking) or 75 minutes of vigorous activity (e.g. running), coupled with strengthening exercises twice a week (Department of Health, 2011) to maintain good health. However, a recent study conducted by the British Heart Foundation (2015), found that only 30% of adults over the age of 75 participated in regular PA, in comparison with 83% of young adults (16-24), showing the decline as age increases. In terms of gender, more men were meeting the PA guidelines in comparison to women, and geographically it was found that the North West of England was the most physically inactive region of the country for both men and women, 31% and 26% respectively. However, when looking at the UK as a whole, the average level of PA amongst the population rests at 21% (Public Health England, 2013). The Health Impact of Physical Activity (HIPI) tool, enables users to view the amount of premature deaths that could be avoided, in a local authority, if the population aged between 40 -79 engaged in the recommended levels of PA (Public Health England, 2013). The HIPI tool showed that by engaging in PA specific medical conditions could be avoided, including diabetes and coronary heart disease (Public Health England, 2013). Although hypothetical, this data demonstrates the impact that physical inactivity is currently having on the population. It also provides evidence to encourage behaviour change amongst the population by portraying the mass health benefits gained by engaging in PA and following the recommended guidelines. Morgan et al (2016) stated that by engaging in PA 36,815 premature deaths could be avoided, thus the need to support and promote PA amongst the population is paramount if a healthier society is to be achieved.

Although individuals do have a role and responsibility for making healthy life choices and maintaining good health (Department of Health, 2004), evidence suggests this is a joint responsibility, highlighting the important role community level services play in health promotion. This was brought to light in Buck & Gregory's (2013) health report, whereby methods to increase population health

were outlined, but highlighting the important role of local authorities in delivering interventions to the community, in order for the prevention of chronic medical conditions.

2.2 Exercise referral schemes

Since moving from a service that works to look after the ill, to incorporating health promotion values in to its belief system, the NHS now has a responsibility to encourage healthy behaviours (Boyce et al, 2008) amongst all its patients. Boyce et al (2008) stated that, every interaction between patient and HP provides an opportunity to promote health behaviour change or refer individuals to an appropriate support service (Boyce et al, 2008). Primary care has been highlighted specifically as an appropriate location to drive health promotion (Boyce et al, 2008). Exercise referral schemes (ERS) were first established in the1990s (Hanson et al, 2013) and have gained considerable force over the last 30 years, with many now operating across the UK (British Heart Foundation, 2010). They are typically 12 weeks of prescribed exercise, recommended to those individuals who have or are at risk of developing chronic medical conditions (Fox et al, 1997). The traditional pathway of referral involves a health practitioner (GP, Physiotherapist or Practice Nurse) assessing an individual to see if they are suitable to attend the scheme. This is then followed by a consultation with an exercise professional, where an appropriate programme of exercise is prescribed (NICE, 2014), and is then monitored by exercise staff (Pavey et al, 2011). Exercise referral schemes, are well placed to promote a healthy lifestyle amongst physically inactive and chronically ill individuals (Din et al, 2014). Although there is evidence to support the potential of ERS to improve PA (Morgan, 2005, NICE, 2006, Williams et al, 2007, Pavey et al, 2011), the effectiveness of these schemes relies on recruiting participants to taken them up (Shaw et al, 2012), as reported uptake to ERS has currently shown to be varied (30-98%) (Gidlow et al, 2015, Morgan et al, 2005, & British Heart Foundation, 2010).

For the purpose of this study, uptake (and "Uptakers") refers to an individual, who following a referral from their HP goes on to book and attend a consultation with an ARS staff member. An individual who following a referral by their HP to the ARS but does not attend a consultation with an ARS staff member is referred to as a DNA (did not attend).

Quantitative studies have examined predictors of uptake, to understand which members of the population are most likely to engage and disengage from ERS, and have looked at personal demographic characteristics to understand this. Pavey et al (2012) found that socio-economic status, age and gender all influenced uptake, with uptake more probable amongst older adults and females, although the latter were less likely to adhere to the exercise scheme in comparison with their male counterparts (James et al, 2008), however younger individuals were less likely to uptake the schemes (Harrison et al, 2005, James et al, 2008) once referred. Health conditions related to musculoskeletal and cardiovascular conditions and associated risk factors, as well as obesity, were found to be reasons for uptake an ERS Dugdill et al, 2005, Harrison et al, 2005, James et al, 2008 & Sowden et al, 2008). However, determining whether reason for referral was predictive of uptake, inconsistent results have been reported (Harrison et al, 2005 & James et al, 2008, Sowdon et al, 2008).

A drawback to using systematic review designs to understand the general level of uptake is the variance in the ways that participants are recruited to participate in studies. This was highlighted in Gidlow et al's (2005) research, where there was a lack of consistency in the methods used to recruit participants for the studies used in the systematic review. It was found that some participants had been recruited though their GP during a routine appointment, others used voluntary health screening tests, some had self-referred and in RCT designs, researchers had recruited the participants. Such varying recruitment methods pose a number of problems for reporting the accuracy of uptake to the schemes. People may respond differently to different methods. For example, uptake may be greater amongst those who volunteer rather than those who are asked, because the former group may be exhibiting more free will, and therefore this may misrepresent the general level of uptake reported. Another problem, as cited in Gidlow et al's (2005) work is that the definition of uptake differs amongst studies, with some defining it as attending a consultation with ERS officer, whilst others define it as attending the consultation plus the first exercise class. Again, this could implicate the representation of uptake figures, and should be taken into consideration when looking at uptake figures in systematic reviews because an individual who only attends a consultation may be classed as an uptaker in one study, yet a non-uptaker in another. It is therefore difficult to compare studies.

Although a majority of the systematic reviews mentioned above are a-theoretical, they provide an understanding of the pragmatic factors influencing participant uptake. Thus far, factors that have been found to affect uptake are largely demographic, and have been age, gender and socio-economic status, and research for health conditions has been largely inconsistent. Further evidence providing insight to the uptake of ERS will be discussed below.

As demonstrated above, there is a wealth of evidence providing insight into characteristics that are predictive of uptake to ERS and adoption of healthy behaviours. Like many studies using quantitative methodology, little is known about the meaning and motives behind the behaviour, thus individual motives are relatively unexplored when this type of methodology is used in isolation (ie.when not used as part of mixed methods research). Although not specifically looking at uptake to ERS, Kelly et al's (2016) study reviewed qualitative evidence exploring the uptake and maintenance of healthy behaviours, one of which was PA, and identified barriers and facilitators that enabled engagement with these behaviours. Barriers affecting uptake and maintenance were primarily time, accessibility, socio-economic status, lack of knowledge and negative personal attitudes towards PA engagement. Whereas a positive personal attitude towards PA behaviour was also seen as a facilitator in terms of enjoyment and understanding the health benefits of engaging in healthy behaviours. Similar barriers to ERS involvement were found in William et al's (2007) review, although, psychological barriers were evident and exhibited themselves in terms of lack of self-efficacy and poor perception of self in terms of body image. Few known studies have explored uptake to ERS using a qualitative framework. However, of the evidence that has been found, it focuses on individual's motives for engaging and disengaging with the service (Tobi et al, 2009 & Moore et al, 2013). Several mixed methods service evaluation studies were identified (Stevens et al, 1998, Tobi et al, 2009, Murphy et al, 2010, & Moore et al, 2013, Gillison et al, 2014), that explored reasons to uptake ERS. Gillison and colleagues (2014) evaluation aimed to explore and understand individual experiences of an ERS (Gillison et al, 2014:2), with data collected from HPs and participants. As part of their work they conducted both surveys and interviews with a range of patients. Their sample compromised participants including 'non-engagers' (clients referred to the service but did not respond to any contact attempts), 'did not start(ers)' (clients

who had made contact with the passport to health team but did not attend an initial meeting), 'non-completers' (clients who attended a consultation but did not complete the full 12 week programme) and 'completers' (clients who attended a consultation and completed the full 12 week programme) (Gillison et al, 2014). They reported reasons for wanting to exercise being factors such as weight loss, improved physical health and wellbeing, reduction of medication, improved confidence in performing PA and for rehabilitation purposes (Gillison et al, 2014). Both Tobi et al's (2009) and Gillison and colleagues (2014) also looked at the barriers to ERS uptake. It was found that factors such as affordability, poor health condition, lack of information about the scheme during initial referral, delays in the referral process and lack of motivation to attend the scheme discouraged uptake to the ERS. Although these studies used interviews to explore uptake, it was only in Gillison et al's (2014) study where they interviewed participants who had not taken up the scheme. In the other cited evaluations (Tobi et al, 2009 & Moore et al, 2013) participants in the study were either former or current members of exercise schemes, thus had experienced all steps of the referral pathway, which resulted in little being known about why non – uptakers do not attend ERS. However, although these studies looked at barriers to uptake, there are not many studies that explore the process between receiving a referral and booking a consultation from the individual's perspective, and how this may differ between do not attends (DNAs) and uptakers. Considering the referral process has been found to be a key motivator for individuals to uptake ERS (Pavey et al, 2011), it is important to understand the referral process to help inform future interventions.

Gillison et al's (2014) evaluation added additional depth by exploring HPs perspectives of the ERS referral process, investigating barriers that inhibit their ability to make referrals. It was found that practical constraints such as lack of time and adhering to their consultation agenda affected making referrals, as did their perception of participant motivation to change. It was also cited how HPs found it difficult to be in genuine in their ability to motivate patients to take up the scheme because of the lack of feedback given about the effectiveness of the scheme. Additionally, referring practitioners did not believe they had sufficient information about the scheme and what it involved for individuals.

Two qualitative systematic reviews were found (Campbell et al, 2015, Morgan et al, 2016) that aimed to understand factors affecting adherence and uptake to ERS. Campbell and colleagues (2015) cited in their review barriers that individual's perceived inhibited HPs from making referrals to ERS. Individuals cited factors such as referrer enthusiasm towards the scheme affected uptake, whereas on an interpersonal level, they cited how social skills played a role. They also felt that the younger individuals were less likely to get referred. Both reviews found that the need for social support was important for uptake to an ERS, playing a role in motivating individuals. In terms of adherence, social support from service providers and other scheme members was important, as this was seen to enhance engagement to the programme (Morgan et al, 2016). Engagement with others was found to be a motivating factor for some to attend as it provided an environment to engage with other individuals and gave them opportunity to leave the house (Morgan et al, 2016). When looking at motivations to uptake the ERS, Morgan et al (2016) found that common factors were to improve health, reduce existing weight, and avoid ill health. They cited concern how increasing activity levels was overseen as a rationale, which then raises concerns about further adherence to PA once such goals have been reached.

Through the evidence reviewed thus far, many research designs have been a-theoretical in nature. However, there are two theories worthy of consideration in this field, providing a framework to understand individuals' decisions to uptake an ERS. This next section will outline SDT and the SEM in more detail.

2.3 Socio-ecological model

A socio-ecological approach suggests that no single factor can explain individual behaviour (WHO, 2015), but suggests that factors interlink and influence each other at different levels (Centers for Disease Control and Prevention, 2015). Evidence has shown that factors on all levels of the model affect PA engagement (James et al, 2008, Pavey et al, 2012, Gillison et al, 2014, Campbell et al, 2015, Morgan et al, 2016), from individual characteristics such as age and gender, to interpersonal level factors, such as HP interactions. Mehtala et al (2014) stated that health promotion should focus on developing interventions on multiple levels to address a specific behaviour within a specific context

and amongst different populations. The SEM helps identify determinants of PA engagement, and factors that facilitate and inhibit engagement (McLeroy et al, 1988), and interventions have said to be more effective when they target multiple levels at a time (VCAA, 2010).

2.4 Self-determination theory

Self-determination theory provides a framework to understand the dynamics of human motivation (Deci & Ryan, 1985), and has been commonly used as a means to understand PA behaviour (Wilson et al, 2008, Fortier et al, 2012). The model explains how different types of motivation regulate an individual's behaviour (Deci & Ryan, 2000a). It has been argued that in order to understand an individual's motivation to engage in behaviour, the psychological needs of autonomy, competence and relatedness should be considered (Deci & Ryan, 2000a). The psychological need for competence refers to one feeling able to carry out tasks in their environment (Kinnafick et al, 2014). Autonomy refers to the feeling of volition (Kinnafick et al, 2014), whereby the individual feels they have the choice and free will to decide their own actions, however, this does not mean acting alone and detaching oneself from others. Finally, relatedness refers to the need to feel connected and cared for by others within a particular given context (Ryan & Deci, 2008). It is thought that when these needs are satisfied, behaviours are more likely to become internalized, integrated and autonomously driven (Ryan & Deci, 2002). However, the thwarting of these psychological needs can have negative impacts upon the individual. It can not only hinder the development of autonomous motivation, whereby the individual partakes in an activity willingly (Vallerand, 2007), but can also encourage a sense of ill-being within the individual (Deci & Ryan, 2002, Gunnell et al, 2013), thus can inhibit one from engaging in activities and behaviours, or at least engaging autonomously. Thus the fulfilment of these needs is necessary to optimise human functioning (Ryan & Deci, 2002), and for the adoption and maintenance of behaviours.

Self-determination theory proposes that motivation can be viewed along a continuum in which the level of self-determination increases from left to right. Please refer to figure 1 on page 10 for a diagram of the process model (SDT continuum).

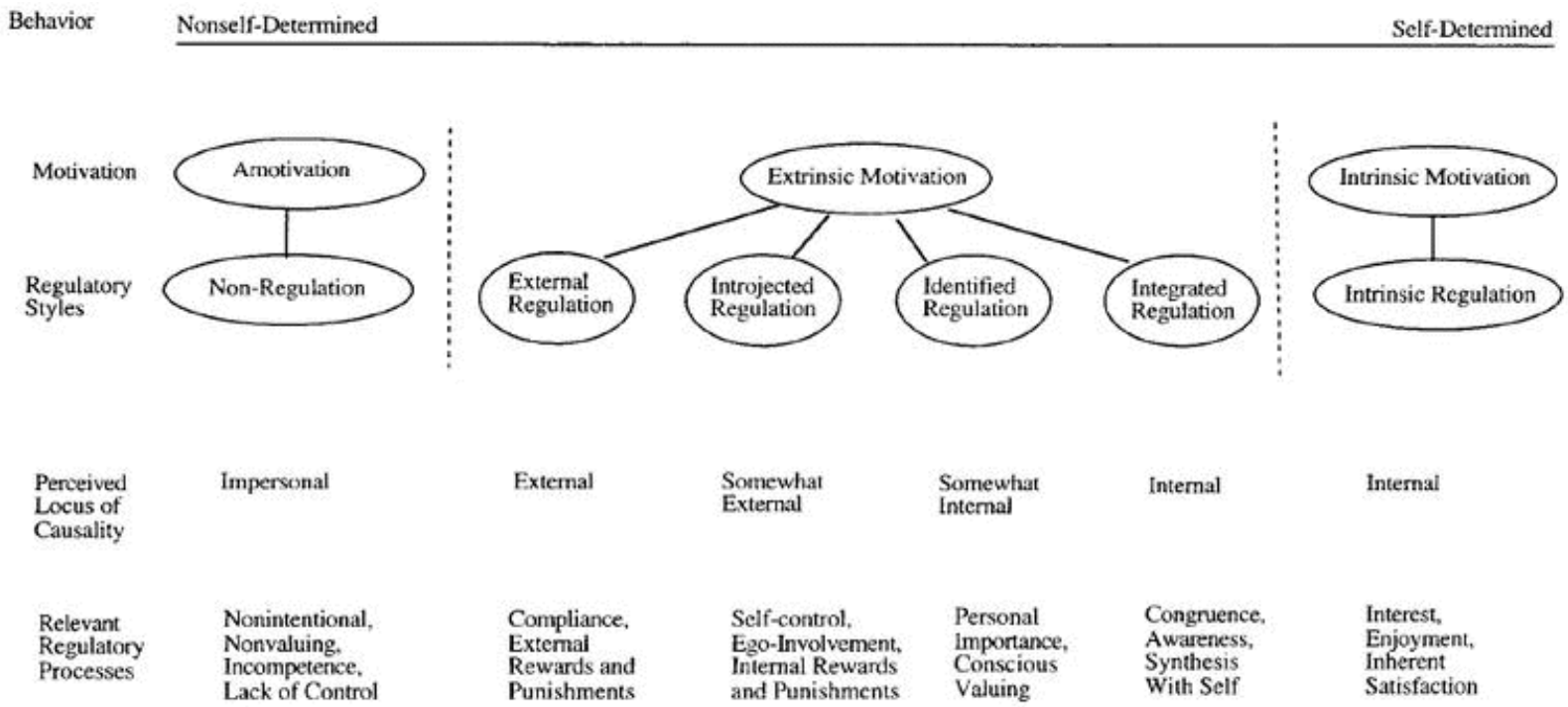

Figure 1 represents the SDT process model

Adapted from Ryan & Deci (2000), *Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being*.

One the very left hand side of the continuum lies amotivation. This refers to when an individual displays no intention to act. There are multiple reasons why amotivation may occur. If an individual feels incompetent to engage in a behaviour because they lack certain skills and knowledge to complete it, amotivation may arise. Secondly, the individual may not see connection between the behaviour and outcome, finally, an individual may simply not want to engage with the behaviour (Ryan et al, 2009). Then moving along are controlled forms of motivation. External regulation, which is the most controlled form of extrinsic motivation, is where behaviour is externally regulated by others. Individuals engage in certain behaviour(s) for want of a reward or to avoid a threatened punishment (eg. engaging in PA because their HP told the individual they had to otherwise they were not going to prescribe them medication). Introjected regulation falls next on the continuum and represents a more internalized form of motivation because it stems from within the individual. However, it is still considered controlled because the individual acts out of self-administered contingencies (ie.for vanity/to avoid feelings of guilt/shame). Thus an individual with this type of motivation may engage in PA to attain an attractive physique (self-image) or because they will feel guilty if they do not. Controlled regulations are not considered to be engaged in volitionally and although have been associated with short term behaviour change (Ryan & Deci, 2000), they have not been found to result in long term maintenance (Deci & Ryan, 1985, Markland & Ingledrew, 2007 & Deci & Ryan, 2008). The next two regulations on the continuum (identified and integrated) are considered more autonomous forms of extrinsic motivation. Identified regulation occurs when the individual identifies and values the behaviour (ie. an individual engaging in PA to increase their health and wellbeing). This type of motivation is thought to be more autonomous because the individual values the importance of engaging in the behaviour. The most autonomous form of extrinsic motivation is said to be integrated regulation, which follows on from identified regulation. This occurs when the values of the behaviour have been fully internalized and form part of the individual's value system (ie.engaging in PA because it is personally important for them to do so). However, this is not the same as intrinsic regulation which follows from this, because intrinsic motivation refers to engaging in an activity/behaviour because of its inherent enjoyment, whereas if an individual exhibits forms of integrated regulation they are still engaging in the behaviour for a

separable outcome (Deci & Ryan, 2000). More autonomous forms of motivation have been found to be positively correlated with longer term PA adherence (Ryan et al, 1997, Pelletier et al, 2002, Edmunds et al, 2007, Fortier et al, 2007, Standage et al, 2008, Hagger et al, 2009, Silva et al, 2010, Teixeira et al, 2012, Klain et al, 2015). Although there are defined types of motivation, they are not mutually exclusive, and can naturally co-exist together, including controlled and autonomous forms (Teixeria et al, 2012), although it has been stated that the most dominate type of motivation displayed will be depend upon the individuals' goal (Sebire et al, 2009).

2.5 Self-determination theory, physical activity and exercise referral

Many studies have explored exercise participation using quantitative methodology and used statistical analysis to understand the relationship between behavioural regulation and PA engagement. Using questionnaires and statistical tests including, logistic and multivariate analyses to determine levels of motivation was apparent amongst studies exploring PA and self-determination (Mullan & Markland 1997, Thogerson-Ntoumani, & Ntoumanis (2006), Morton et al 2008 & Rodgers et al, 2010). Although a largely historical study, Mullen & Markland (1997) explored exercise behaviour regulation and stages of change in PA, using a self-determination framework within an adult population. Their results showed people in the preparation stages of exercise exhibiting forms of intrinsic motivation was unlikely, and individuals in the action and maintenance stages of PA were shown to be more intrinsically motivated. However, a disadvantage of this study was that the participants used were members of the general public, and therefore had not been prescribed a specific exercise programme. Therefore, questions can be raised surrounding their motivation, considering this may differ significantly in comparison to an individual who has been prescribed an exercise programme because they have or are at risk of developing a chronic health condition. However, research by Morton et al (2008), counteracted this, and in their study used participants who were already enrolled on an ERS. Their results echoed Mullen & Markland's (1997) study, whereby self-determined motivation was more evident amongst individuals who had been engaging in PA over time (ie.in the latter stages of an ERS). Confirmation of these findings is demonstrated in the work of

Thogerson-Ntoumani, & Ntoumanis (2006) & Rodgers et al, (2010) whose studies showed how more self-determined motivation was typical of individuals who were regularly engaging with PA, and in the latter, how those new to exercise were more likely to exhibit forms of external motivation. When looking at needs support, more autonomous forms of motivation have been shown to be facilitated when the psychological needs of autonomy, competence and relatedness are promoted (Markland & Tobin, 2010 & Ng et al, 2012), especially for women (Weman-Josefsson et al, 2015). Further studies, have looked at needs thwarting, which refers to *"the perception that need satisfactions are being obstructed or actively frustrated within a given context"* (Bartholomew et al, 2011a: 5). within a PA context. Gunnell et al's (2013) study aimed to understand whether needs thwarting in a PA context contributed to the understanding of both ill and well-being. They found that active needs thwarting was predictive of ill being, and not simply the lack of needs satisfaction, which has been found to be negatively associated with ill-being (Sebire et al, 2009 & Rahman et al, 2011).

As displayed above, research exploring the relationship between SDT and PA has used quantitative methodology. A disadvantage of using such methodology to understand the relationship between behavioural regulation and behavioural outcomes is that they do not take into account the different types of motivation that co-exist within individuals (Deci & Ryan, 2002 & Patrick, 2014). Therefore, not providing a full and representative account of how different types of motivations co-exist together, neglecting to portray the dynamic nature of motivation. To help overcome this problem qualitative studies have used profiles to portray different motivations and behavioural outcomes. Similar to Mullen & Markland (1997) and Mortan et al (2008), but using a qualitative design, Kinnafick et al's (2014) study used a longitudinal case study design to explore individual motivational processes involved for individuals transitioning from a physically inactive lifestyle towards a physically active one. Using this type of design allowed the researchers to understand the motivational processes at the adoption phases of exercise, and how this changed throughout the adherence/maintenance stages (Kinnafick et al, 2014). Feelings of obligation to partake in a specific activity influenced uptake, portraying how external forms of motivations can in some circumstances be used as a positive motivation, although, as discussed above, this type of motivation is not associated with long term

behaviour change (Deci & Ryan, 2000 & Ryan et al, 2008). However, this also supports what Markland & Ingledew (2007) stated when exploring the impact of both body mass and image on autonomous motivation, one can exhibit forms of controlled motivation to participate in exercise, however this must be complemented with autonomous forms if this behaviour is to become regular. Kinnafick and colleagues (2014) also found that satisfying the needs for competence and relatedness were key for exercise adoption, although autonomy was found to be key for longer term adherence, supporting Deci & Ryan's (2000b) hypothesis that internalisation results in more autonomous behavior, but is more likely to occur during the latter stages of behaviour change.

2.6 Wigan's health profile and the Activity Referral Scheme

Wigan is a geographical region in the North West of England with a varied health profile (PHE, 2015), characterized by high levels of deprivation and obesity (27%) and low levels of PA (50.9%) (PHE, 2015). In comparison to the national average, there is a higher proportion of 35-79 living in the borough a lower proportion of young (20-34) and elderly adults (75-84) in the borough (Tocque et al, 2011). Life expectancy in Wigan is lower than the national average and differs between socio-economic status, with those living in more deprived areas expected to live 8.6 years less than those living in more affluent areas (Tocque et al, 2011). With the most common cause of reported loss of life years being due to cardiac and digestive conditions (Torque, et al, 2011).

As a means to help improve the health within the Wigan Borough, IHL offers a range of health initiatives, including a Community Weight Management Scheme and a PA referral scheme help enhance the populations quality of life. The ARS one of the most prominent schemes that they offer is which operates as an ERS. It follows a traditional method of referral whereby an individual is referred to the service through their HP. It is then the individuals' responsibility to book an appointment with an ERS staff member with the telephone number provided by the HP during the referral. The individual then attends a consultation with a ERS staff member where a suitable programme of exercise is decided. There are a range of activities within the ARS, suitable for individuals with a varying health conditions and needs (IHL, 2016). These include sessions such as low impact circuits, cycling and health walks, with more targeted sessions available to those with specific condition, such

as pulmonary, stroke, back and cancer rehabilitation and hydrotherapy sessions (IHL, 2016). Although the scheme aims to see 3,500 referrals yearly, approximately 30% of the individuals referred to the service fail to uptake following a referral by their HP. Therefore, understanding the factors towards uptake is important to help reduce this number.

2.7 Rationale for qualitative research

As demonstrated throughout this review, few known studies exist that have explored the factors influencing uptake to an ERS, and have then understood these within the context of SDT. Studies that have explored the wider issue of uptake have used a pragmatic paradigm (Tobi et al, 2009 & Moore et al, 2012). There are minimal studies that have applied SDT to understand PA engagement have not looked specifically at uptake within an ERS setting and how interactions with HPs and ERS referral staff during the referral process affect/influence motivation to uptake the ERS.

This study therefore uses a post-positivism stance, combined with interpretivist epistemology (semi-structured interviews) to explore the factors influencing uptake to the ARS. A post-positivist stance (Trochim, 2006) was used because of the application of theory, whereby behaviour is being understood within first a socio-ecological framework then a self-determination framework. Theory will be used to understand the deeper lying processes of the phenomenon (Trochlm, 2006), which in this case is the factors influencing uptake to the ARS. A post-positivist approach advocates methodological pluralism (Wildemuth, 1993), whereby the method of data collection applied is deemed the most suitable to answer the research question (Wildemuth, 1993). In light of this, interpretative methods were used (semi-structured interviews), as this method of data collection was deemed the most appropriate to gather in-depth information about participant experience of uptake to the ARS. In terms of data analysis, a similar approach was adopted as that in Hardcastle and Hagger's (2011) research, whereby although there was an attempt to be open about the emerging data, it is acknowledged that the themes identified did not emerge in the absence of preconceived ideas (Krane et al, 1997), particularly because of the theoretical underpinning. Like Hardcastle and Hagger (2011), it is recognised that due to the researcher's knowledge within the subject area, the themes developed

would be somewhat informed/influenced by their knowledge, however, like Hardcastle & Hagger (2011) there is an attempt made throughout to be open about new findings and for these not be have been disregarded.

2.8 Aims of study

The success of ERS is reliant upon the uptake of schemes (Pavey et al, 2012). It is therefore important to understand the factors that influence potential participants' decisions whether or not to participate after they have been referred (or self-referred). Past studies have recommended that future research adopt qualitative methodology to explore uptake to referral schemes (James et al, 2008), as minimal qualitative evidence exists. More specifically, qualitative research exploring the processes of referral from the perspective of both DNAs and uptakers is scarce. On the one hand, research is needed that talks to participants who DNA to explore what prevents them taking part, whilst on the other hand, there is potential insight to be gained through talking to those who do uptake schemes about the positive factors that have encouraged them to do so. Focusing on the factors that inform success has been found to be valuable as it provides insight to generate effective and meaningful interventions (Stuckey et al, 2013) and can therefore be applied in this study to help increase uptake to ERS. In recognition of this, the purpose of this study is to qualitatively explore factors that influence uptake to IHL ARS with a view to informing future interventions to improve uptake.

In light of this, this research aimed to answer two research questions, these were as follows

- What factors influence uptake to the Activity Referral Scheme?
- How does Self-Determination Theory help explain participants' decisions whether to uptake the Activity Referral Scheme?

Chapter 3

Methodology

3.1 Activity Referral Scheme and referral process

The ARS is ERS provided by IHL and is designed to help improve the health and quality of individuals' lives by delivering a range of PA classes (IHL, 2016). It is the role of the HP to identify and refer individuals to the scheme. In order to be eligible to be referred, one must be over the age of 18, have, or exhibit risk factors towards developing a chronic medical condition. However, only those with stable medical conditions and who are believed to be fit enough to partake in PA will be referred. During the referral to the scheme, the HP is required to fill out a referral form, which they send a copy of to the ARS team. A copy is also given to the individual as it provides them with the telephone number to call the ARS team and book a consultation, which typically takes place within a leisure facility, although one GP practice in the Borough offer consultations in their surgery. The ARS aim to offer individuals consultations within a 7-day timeframe from when they rang up, however, this may vary depending on the availability of appointments. Individuals who do not call to book a consultation within 2 weeks of their referral being received by the ARS team are sent a letter as a reminder of their referral to the scheme. If individuals do not respond to this within a 2 week window they are classified as DNAs (those who had not attended a consultation with an ARS staff member following a referral from their HP). Before individual's consultation appointment, ARS staff are required to call them to confirm their attendance, if they are unable to attend another appointment is arranged. Individuals who attend this consultation are classified as "Uptakers" (those who had booked and attended a consultation with a ARS staff member following their referral from a HP), individuals who do not attend are classified as DNAs. The consultation typically involves the individual and ARS staff member developing a suitable PA programme. The individual attends the scheme for 12 weeks at a subsidized rate.

3.2 Participants and recruitment

3.2.1 *Eligibility*

To be eligible for participation in the study, all participants were required to have been referred to the ARS between the months of October and November 2015 with a known medical condition, or at risk of developing one and were over the age of 18 years. The aim was to recruit a mixture of participants who had both engaged and not engaged with the service.

3.2.2 ***Recruitment***

Participant recruitment took place between January and February 2016, in an attempt to recruit participants who were referred to the ARS between October and November 2015. The time lapse between referral and recruitment allowed enough time for participants to either become 'uptakers' or 'DNAs'. It was planned that 40 qualitative interviews, compromising of 20 'uptakers' and 20 'DNAs' would be conducted.

Participants were identified using the IHL referral database, held on an Excel spreadsheet. This spreadsheet records referral information, such as the individual's medical diagnosis and reason for referral. It also holds information for the IHL team, such as whether individuals have taken up the scheme or not.

Figure 2 details full sampling procedure for participant recruitment, can be found on page 19.

A probability sample was used where a total of 360 uptakers and DNAs were randomly selected using a simple random sample in excel for participation in the study. The rationale for recruiting this number of participants was to account for the anticipated 10-20% response rate. Although this method of recruitment was also chosen for it being both feasible and practical (HRA, 2015).

Invitation letters sent to participants detailed why they had been contacted, the purpose of the study and also informed them that for those who participated they would receive a £10 shopping voucher as a thank you for their time. This amount was chosen as it was deemed a suitable amount to incentivise individuals to participate, but not enough to coerce them. Letters also included a free post envelope, which was included to minimise the cost to the individual and increase the likelihood of response. It

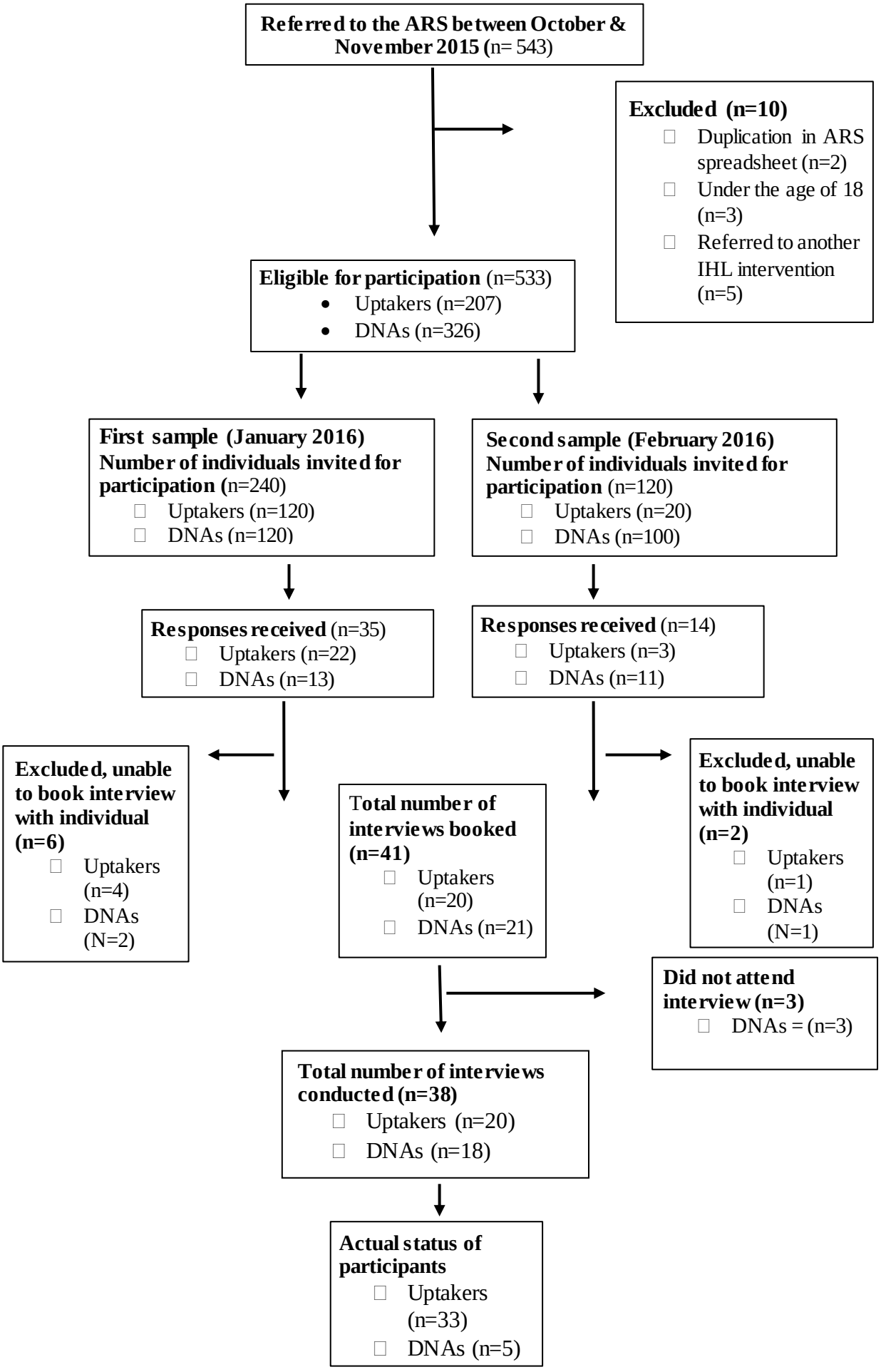

Figure 2 represents the sampling procedure for participant recruitment in the study

was decided that participants would be given a month to respond to the recruitment letters. This was deemed an appropriate amount of time, as it accounted for any postal delays, but also gave participants time to respond if they were away from their residential address at the time letters were sent out.

After a reply slip was received the primary researcher called the participant to book a time and date for interview. It was requested on the reply slip that the participant state a suitable time and day to call them in order to maximise the chances of contact. Participants were first called on the day and at the time they specified on their reply slip, however if this was unsuccessful, they were tried on different days and at different times. Additionally, for those who provided a mobile number, they were also texted. If it was not possible to reach a participant after seven attempts, they were excluded, because after this point it felt contact had been exhausted.

All participants were telephoned and texted, if applicable, the day before their interview was due to take place to ensure they were able to attend. If not, the interview was re-scheduled for another time and day.

A total of 533 participants were eligible for recruitment in the study. In the first round of sampling 120 'uptakers' and 120 'DNAs' were sampled. As not enough DNA responses were received in the first round of sampling, a second sample was done. This sample compromised of 20 'uptakers' and 100 'DNAs'. Fewer uptakers were sampled during this second stage because of the higher number of responses received from the first sample. A total number of 38 participants attended the interview (n =20 uptakers and n=18 DNAs). Although it materialized through the interviews that only 5 of the 18 DNA samples had not taken up the ARS scheme. This changed the status of participants interviewed (n=33 uptakers and n=5 DNAs).

3.2.3 *Final sample*

A total of 38 participants were interviewed. This comprised 13 males and 25 females aged between 26 and 76 years, with a mean age of 58 years. The mean age is based on 36 participants, because 2 participants chose not to disclose this information. Participants' reported to the scheme with varying medical conditions. These included cardio-metabolic, respiratory, musculoskeletal and mental health

conditions. Thirty one participants were White British, 4 White but of different nationality, 2 participants were of Asian descent and one participant declined to provide their ethnicity. Nineteen participants were retired, although 2 cited long term sick and caring responsibilities for their retirement, 1 participant was unemployed, 4 were on long term sick, and 2 were carers, only 12 participants were in work, 8 in full time, 4 in part time, and 2 who were self-employed (unable to distinguish whether full or part time working). Please refer to table 1 for full participant characteristics.

3.2.4 *Participant overview*

Through interviewing it became apparent that instead of there being two distinct categories (DNAs and uptakers), to the ARS, different classifications arose. It also became apparent that a number of participants who were expected to be DNAs had taken up the scheme. At the time of interview, two participants had booked, but not attended their consultation with an ARS officer, so from hereon-in, these participants will be described as being in 'limbo'. The rationale for defining these participants as 'limbo' is because at the time of interview they did not fit in to a distinct category (uptaker/DNA), thus a definite title cannot be applied to them because the outcomes of their actions are unknown. Additionally, not all the participants interviewed had taken up the ARS, but instead had taken up a partner IHL scheme (Community Weight Management, Active Choice and Active Later Life schemes), however, all the participants were only registered to one scheme (ie.could not be taking part in the community weight management scheme and the ARS). However, for the purpose of this study, all those that had taken up a programme under the IHL umbrella were classified as 'uptakers' because they had all been through the same referral pathway.

Table 1 represents the participant characteristics

Uptake status	Uptakers (n=33) DNAs (n= 5)
Gender	Male (n=13) Females (n=25)
Average age	58 years
Referral condition	Cardiometabolic (n=8) Musculoskeletal (n=7) Neurological (n=2) Respiratory (n=2) Other conditions (n=2) Multiple conditions (n=17)
Disability status	Disabled (n=9) Non–disabled (n=29)
Employment status	Engaging in work (n=12) Full time (n=6) Part time (n=4) Flexible working (n=2) Long term sick (n=4) Retired and/or carer (n=20) Unemployed (n=2)
Ethnicity	White British (n=31) White other (n=4) British Asian (n=1) Asian Pakistani (n=1) Undisclosed (n=1)

3.3. Procedure

The primary researcher (thesis author) and an MSc Health Psychology student conducted the interviews. The primary researcher was responsible for the conduct of the study, and organised and coordinated the interviews with the participants. Both researchers were present during the majority of interviews, although it was procedure that one researcher would lead the interview. Having two researchers present ensured consistency in interview questioning, and also provided an environment where the researchers could learn from each other's' interview techniques. They also acted as a 'second pair of ears', asking probing questions to participant points that the first interviewer may have missed. Twenty three interviews were conducted by one researcher, of which the primary researcher conducted 16 and the second researcher conducted 7. The interviews were conducted during February and March 2016 at two leisure centres within the Wigan and Leigh Borough. All interviews were conducted in a private room and were recorded using a dictaphone. Fifteen interviews were conducted together.

Prior to the interview commencing, all participants were asked to complete the participant consent and additional information forms. Additional information forms were used to gather demographic information, including participants' gender, date of birth, residential address, referring practitioner, referral health condition, employment status, and ethnicity. Participants were also reminded at this stage that they were not obliged to answer any questions they felt uncomfortable with and could terminate the interview at any time. The participants were then reminded that the study was about understanding the factors that influence uptake to the ARS, and that topic questions would explore their reason for their referral to the scheme, their interactions with the HP and ARS staff, their circumstances since being referred to the ARS and any thoughts on methods to help increase future uptake to the ARS.

As NHS patients formed the participants for this study, NHS ethics were applied for in October 2015. Ethical approval was granted in December 2015 (Reference number: 15/EM/0530).

3.4 Interviews

3.4.1 *Researcher training and pilot interviews*

Standardisation of the research protocol was achieved through training with members of the supervisory team prior to conducting the three pilot interviews, which were conducted to ensure that the research protocol was realistic and user-friendly (Van Teijlingen & Hundley 2001). The pilot participants were current ARS participants who had not been randomly selected for participation in the study. In addition to testing for usability, the pilot interviews also aimed to enhance the credibility of the interview guide (Shenton, 2004). This was achieved by asking participants for feedback to identify ambiguous, difficult and unnecessary questions (Peat et al, 2002), but also to check whether there were any questions they felt should be asked that had been missed. Practically, pilot interviews allowed also for the testing of equipment and facilities, and gave the researchers a chance to ensure that a standardised interviewing procedure was being followed. Following the pilot interviews, interviews were listened back to with members of the supervisory team and feedback was provided, and any amendments/refinements to the interview process and guide were changed. To enhance trustworthiness further, the interview procedure was discussed between the two researchers to ensure any uncertainties or questions either one had were resolved prior to the interviews starting. In addition, the pilot interviews provided the researchers with an opportunity to become familiar with the interview process, which has been recommended for novice researchers (Holloway, 1997).

3.4.2 *Interview guide*

The semi-structured interview guide was developed by the research team in order to understand the factors influencing an individual's decision to uptake the ARS. Drawing on self-determination theory, questions were tailored specifically around individual motivations towards taking up (or not taking up) the scheme. Four central questions made up the interview guide. The opening question explored the individual's reason for referral, this was followed by exploring the individual's referral journey, looking into their interactions with the referring HP and subsequent exercise referral staff. Questions then focused upon what had happened to the individual since being referred to the ARS. The final

question explored ideas to improve future uptake to the scheme. Specific probing questions were developed from these broader questions. However, these were used as prompts for the researcher to use if the participant did not provide depth in their answer to the initial question, and thus were not used religiously. Please refer to table 2 for the full interview guide.

3.4.3 *Conducting the interviews*

One researcher led the interview, and asked one question at a time, allowing time for the participant to think about their responses. Although questions were written and asked in lay language to maximise participant understanding, questions were re-phrased if the participant expressed confusion at their meaning. The role of the researcher was to listen to the participant, allowing them to tell of their experiences authentically. Thus the participant led the interview and the researcher acted as a guide. The flexible nature of asking open ended questions allowed both natural and elaborated responses to be elicited from the participant. It also allowed themes to be explored (Kinnafink et al, 2014) and for participants to give a genuine account of their experiences of their referral journey in the hope that their reasons for uptake would be transparent. To ensure participant accounts were reflected authentically and accuracy member checking was done throughout the interview process (Shaw, 2010). Following each interview, the researchers then discussed it with one another to ensure that a transparent understanding was held. In the case that only one interviewer was present, the researchers would inform each other of the interviews to ensure understanding.

Table 2 represents the research and additional probing questions used to conduct the interviews

Research question	Additional probing questions

To begin, could you talk me through what brought you to visit your health professional on the day that you were referred to the Activity Referral Scheme?	• What motivated you to visit your health professional?
	• Do you remember how you were feeling that day?
	• Had you heard of the ARS prior to visiting your health professional? **If so,** how, and what did you know about it?
	• What has your relationship with exercise been like in your life?
	  o Your attitudes, as well as those from your family and peers?
	  o Do you feel that there are any factors that affect control over exercise in your life?

Now I'd like to talk about the conversation that you had with your health professional through which they referred you to the ALRS. Can you talk me through how the scheme was brought up and how the decision was made to refer you?	• Who brought up the topic of the ARS?
	(If the individual brought up the ARS)
	  o Can you remember how you were feeling about the possibility of attending the scheme?
	  o Was it something that you felt you wanted or had to do?
	  o How long had you been considering the scheme for?
	  ▪ (If applicable) What stopped you from being referred earlier?
	  o How did you find out about the scheme?
	  o Can you recall what you knew about the scheme before you mentioned it to your health professional?
	  o Can you remember what you expected the scheme to be like?
	(If the health professional brought up the ARS)
	  o Can you remember your initial reactions when the ARS was mentioned?
	  o How did the health professional introduce it to you?
	  ▪ What language did they use?
	  ▪ Were they empathetic?
	  ▪ Did they present it to you as an option for you to consider or prescribe it as a solution?
	  o Was there anything that the health professional did or said that made you feel motivated to attend the scheme?
	  o Who made the final decision about your referral?
	• Were you given any information about the next steps (of joining the scheme)?
	• Did you feel satisfied with the amount and quality of information provided about the scheme?
	• Were you told the procedure of how to book a consultation with a member of the ARS team?
	• After your consultation with the health professional had finished, do you remember how you felt about joining the scheme?
	  o How motivated were you feeling?
	  o Did this level of motivation differ from how you were feeling before/during the consultation? **If so,** what do you think it was that changed your feelings about the scheme?
	• How confident were you feeling about joining the scheme?
	• Did you intend to attend a session?

Can you talk me through what has happened since you were referred to the ARS?	• What happened once you left your health professionals office?
	• Were you informed of how your referral would reach the ARS team?
	• Did the team contact you via letter?
	  ○ How did you respond to these communications
	• Have there been any changes in your personal circumstances that altered your decision to join the scheme?
	• Following your referral, did you discuss it with family/friends?
	  ○ Did you know of any family and/or friends who have attended the scheme previously?
	  ○ Could you explain what their impressions of the scheme were and how they felt about your attendance?
	  ○ Did they play a role in your decision to uptake the ARS? **If so,** in what ways did they influence your decision?
	Asked if the participant had uptaken the scheme
	• What was it that motivated you to attend the scheme?
	Asked if the participant had not uptaken the scheme
	• What do you think it was that stopped you attending the scheme?

(And finally), have you any thoughts on ways the referral process could be improved for future participants?	• Is there anything that could have been done to encourage attendance to the scheme by the health professional or by the ARS?
(This question was only asked to DNA participants). Finally, could I ask do you ever see yourself attending the scheme in the future?	• What is it that makes you feel this way? • Is there anything you would change about the scheme that would encourage you to attend in the future?

3.5 Analysis and transcription

3.5.1 *Transcription*

Before analysis, all interviews were transcribed verbatim and imported in to Nvivo version 10. Transcription was carried out by members in and outside of the research team. In order to ensure there was consistency and transparency across the team, transcription guidelines were developed. It was decided that a denaturalised approach would be taken, thus preserving the natural features of everyday talk. This meant that all 'ums' and 'ahs' (Davidson, 2009), were to be noted within the transcript. This was due to transcription being seen as a largely theoretical process (Ochs, 1979) and thus, transcripts being viewed as theoretically constructed, (Lapadat, 2000), and therefore the process of transcription being both representational and interpretative (Davidson, 2009). Due to multiple individuals being involved in the transcription process, it was deemed appropriate to take this denaturalised approach because not all transcribers had been involved during the interviews. By adhering to this method the chance for transcribers to attach assumptions to the data was minimised, thus the context and meaning of the transcript being maintained. (Please refer to appendix number 1 for transcription guidelines). Transcription was done traditionally, whereby the audio file was listened to and typed up on a computer, using the Microsoft Office package, Word. Short phrases were listened to at a time to ensure that what was being written down was correct. If the transcriber was uncertain of what was being said, it was a process of re-listening to the phrase to ensure accuracy. In the instance that sections were inaudible, this would be listened to by the primary researcher and then tried to be understood. This was done by recounting back to the interview, and trying to remember what was said. If it was not possible to remember what was said, this section of speech would not be transcribed and inserted into the text. It was deemed inappropriate to add phrases that the team were uncertain of, due to the fear that it could alter the meaning of what was originally said. Following transcription, the primary researcher read through a proportion of completed transcripts to ensure they were an accurate representation of the interview. This was done by listening to the audio interview whilst reading the completed transcript.

3.5.2 *Analysis*

A two stage analysis was conducted in order to answer both research questions. Research question 1 (what factors affect uptake to the ARS?) was addressed using an inductive thematic analysis, providing a method allowing researchers to identify, analyse and report patterns within data (Boyatiz, 1998). The analysis allowed themes to emerge that related to factors that influence uptake to the A. This was done following Braun and Clarke's (2006) thematic analysis framework. This type of analysis was chosen because of its of flexible nature towards analyzing qualitative data (Braun and Clarke, 2006), in the search for rich, detailed yet complex themes and patterns, especially in health research (Braun & Clarke, 2014).

In order to identify themes, transcripts were read and re-read in order to become familiar with the text. This process allowed for initial codes to be generated for each of the transcripts, which resulted in a one dimensional model. A code was constituted as a piece of text that related to the primary research question, so codes were applied to factors that influenced participants' decisions to uptake the referral scheme. Codes were based on the interpretations of the data. For example, when a participant explained that their rationale for being referred to the scheme related to improved health, this was coded under the sub-theme 'health motivations'. Codes were made on the basis on the conversation between the researcher and participant during the interview process. Clarification of participant responses during the interview was done to ensure the content and context were reflected accurately. Once initial codes had been established, main themes could be identified, and a multi-level model developed. This was achieved by organising codes into higher level themes. To gain a deeper theoretical understanding of the data, emerging themes were grouped into levels of the Socio-Ecological model, with sub-themes embedded in each level to create a thematic map of the data. All themes were refined, which included the process of collapsing and separating themes, to ensure that there they were all distinct from one another (Braun & Clarke, 2006), thus minimising overlap. Theme names were then refined in order to ensure they accurately captured what the data was representing, in the aid of being transparent to others, allowing for themes to be easily identifiable and understandable to other readers. To ensure that rigour was maintained, and as a means to verify and validate themes, and increase credibility and trustworthiness, investigator triangulation (Denzin, 2006)

was conducted by members of the research team. This facilitated discussions regarding the meaning of themes, and whether themes accurately represented the data within them, and also gave the opportunity to discuss the emergence of new themes.

For the second research question (how can SDT help explain participant decisions whether to uptake the ARS?), a deductive theoretical approach was taken, which approaches data analysis through a narrow theoretical lense (Trochim, 2006). This allowed the researchers to apply the SDT framework to the data in order to answer the research question. A holistic and manual approach was taken to extract key SDT themes, whereby the researcher noted SDT-relevant participant experiences during the processes of data collection, transcription and the first stage of analysis. Care was taken not to force data into every SDT construct, but instead to discuss only those SDT constructs that were apparent in the data. Therefore if a key SDT construct did not appear to be represented in the data it was not presented as a theme. The SDT themes were then further verified through re-visiting original transcripts and reflective discussions with the supervisor. As discussed by Ollerenshaw & Creswell (2002), during interviews, people inform others of their life experiences (2002) then researchers narrate and identify themes from a story. In this case, broad SDT themes that emerged through interviews and transcripts were noted down accompanied with supporting quotations. As with the first stage of analysis, investigator triangulation (Denzin, 2006) was conducted to ensure the trustworthiness of themes. This allowed the first researcher and members of the supervisory team to discuss and clarify meaning of the initial themes, and to ensure that the data within them accurately captured the theme. Themes were collapsed, expanded and refined to ensure they were coherent and concise, as well as being identifiable and understandable for the reader.

Chapter 4

Results

The results are separated into two distinct sections. Section 1 will describe the results that emerged from the thematic analysis. These results are framed within the SEM (individual, interpersonal and organisational level), to answer the following research question:

- What factors influence uptake to the Activity Referral Scheme?

Please refer to figure 3 for full diagram of themes within the SEM, which can be found on page 32.

Section 2 explores how participant experiences relate to SDT and how this influences uptake to the scheme. These findings were attained by answering the following research question:

- How can Self-Determination Theory help explain participant decisions whether to uptake the ARS?

Section 1- Thematic analysis

The first part of this section will discuss the individual level factors that were found to influence participant decisions to uptake the ARS. Within this section, seven key themes emerged: a) Awareness and knowledge, b) Experiences, c) Physical health, d) Positive attitude, e) Referral rationale, f) Personal motivation and g) Self-perception.

Secondly, interpersonal factors will be discussed, these are grouped according to four central themes and will be discussed as follows: a) Interactions with the HP, b) Interactions with family, c) Interactions with others (friends & acquaintances), and d) Interactions with ARS staff.

The last factors to be discussed within this section will be organisational level factors. Organisational factors explore the institutional procedures and environmental structure, and how these influenced an

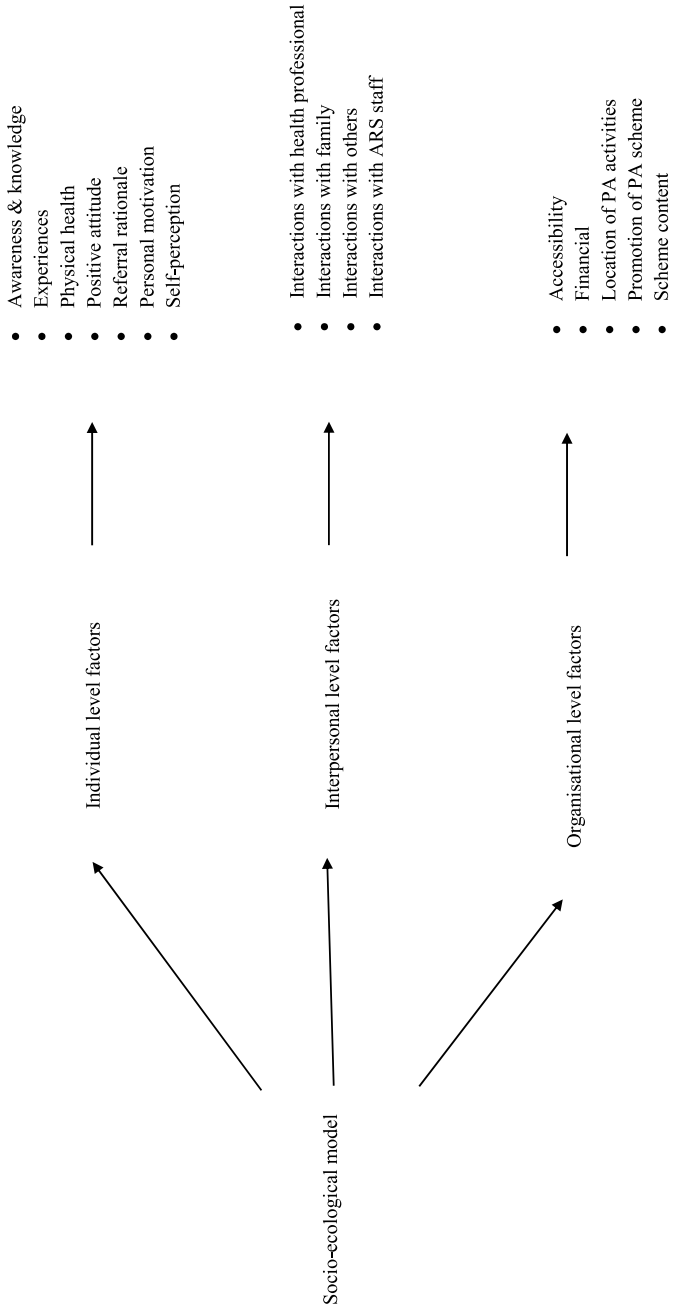

Figure 3 Overview of the Socio-ecological structure and main themes influencing uptake to the ARS

individual's decision to uptake the ARS. They will be presented and discussed as follows: a) Accessibility, b) Financial cost of attending PA facilities, c) Location of PA facilities d) Promotion of ARS scheme and e) Scheme content.

Data from uptaker, Limbo and DNA participants will be displayed together within the relevant themes in this section. The rationale for doing so is because themes that emerged amongst the different 'classifications' did not differ dramatically, however in order to distinguish amongst participants, participant identifiers are used to inform the reader of the status of each participant. Please refer to page 35 for an overview of the Limbo and DNA participants.

Overview of DNA experiences

Participant 17

Participant 17's case differed in comparison to the other DNAs, although some similarities were observed her referral journey on the whole was quite different. This participant was told by gym staff that she was unable to join the gym unless she got a referral to the ARS, because of an existing health condition. Although like the other DNA participants she expressed an interest in PA, she did not express an interest in the ARS, citing reasons such as suitably and work commitments. She stated how she was not properly/adequately informed of the scheme, and as a result did not know that she had been referred. Because she lived outside of the Wigan Borough her GP surgery did not know about the scheme and thought she was asking for a fit note, for which she would be required to pay £10, and did want to pay. An accumulation of these factors influenced her decision to not uptake the ARS.

In total, 5 DNAs were interviewed and reasons for non-attendance differed slightly amongst the participants. However, all displayed how external pressures/forces/circumstances had played a role in their decision for non-uptake, to varying degrees.

Regret

A small number of individuals spoke about self-motivation retrospectively and how they wish they had been autonomously motivated to uptake when initially referred by their HP, some participants expressing great regret:

"I'm a bit annoyed with myself that I didn't take up the offer…it's my fault I've not taken it up, I should have taken it up" (P23, DNA).

Table 3 provides an overview of the DNA participants. The purpose of this is to provide context and understanding to readers of why these participants did not go on to uptake the scheme.

Table 3 Overview of DNA and 'Limbo' participants

Participant 11	This participant, a 69 year old female, was classified as a DNA because she was unaware that she had been referred to the ARS, and therefore did not uptake. At the end of the interview, following discussions with the researchers about the scheme, she did express an interest in taking up the ARS. With her consent, her details were passed onto the ARS.
Participant 17	This participant, a 28 year old female, was asked by gym staff to obtain a referral to the ARS before being able to join the gym. She lived outside of the Wigan Borough so as a consequence her HP was unaware of the scheme. She was uninformed of what the scheme was and was not made aware that she being referred to the ARS, therefore did not take up the scheme.
Participant 23	This participant who was a 55 year old female showed intent to uptake the scheme. However they had external commitments that restricted their ability to uptake (e.g. commitments to family and work).
Participant 25	At the time of interview, this participant, who was had booked a consultation with an ARS officer but had not attended this appointment, although he showed intent towards uptake, at this time his scheme was unknown, thus will be referred to as 'limbo'.
Participant 26	This participant was a 62 year old male showed intent to join the scheme, however they faced external pressures such as a negative attitude from their spouse and conflicting appointments, which prevented them from taking up the ARS.
Participant 32	This participant was a 44 year old female who expressed uncertainty about who had referred her to the ARS. She cited how she received a letter informing her of her referral to the ARS 2 weeks prior to the research interview taking place. At the time of interview she stated she had booked an ARS consultation but had not yet attended it, thus will be referred to as 'limbo.
Participant 37	This participant was a 28 year old female, whose reason for non-uptake was a result of external factors. Despite positive intentions to join the scheme, not being offered a suitable time slot for her consultation with an ARS officer resulted in disengagement from the service.

4.1 Individual level factors

Themes identified in this section related to personal factors, including knowledge, experiences, attitudes, motivations and self-perceptions, all of which were found to influence whether participants took up the ARS or not. Please refer to figure 4 located below for full individual level themes.

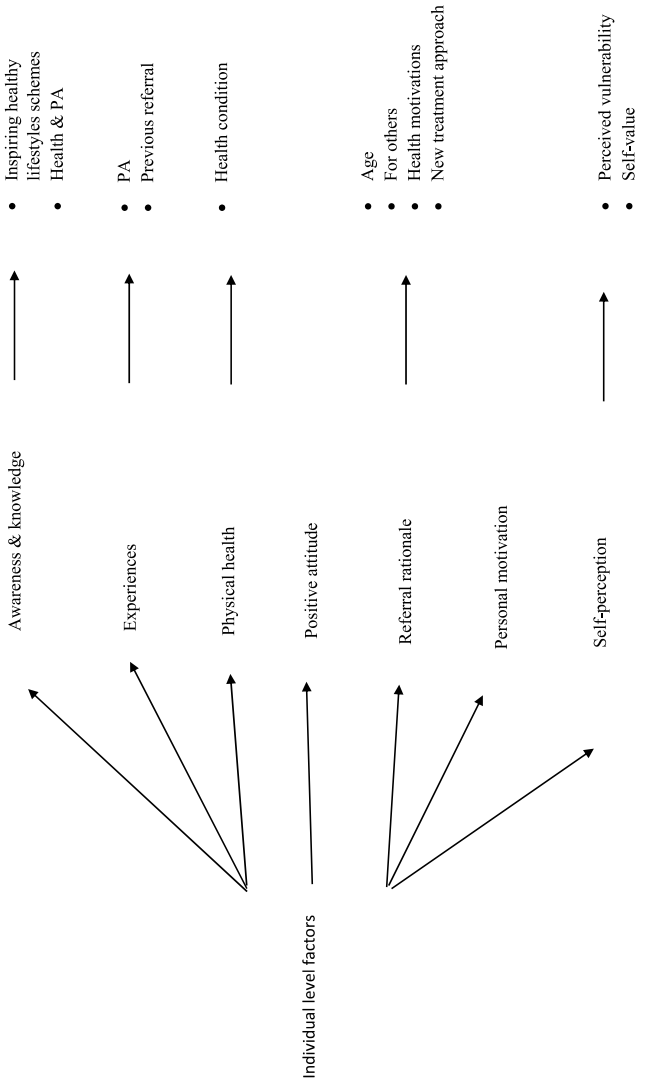

Figure 4 Overview of the individual level themes and sub-themes influencing uptake to the ARS

4.1.1 Awareness and Knowledge

4.1.1.1 *Inspiring healthy lifestyles schemes*

A proportion of the DNA and uptaker participants stated that prior to their referral to the ARS they were not aware of the scheme, citing that *"well I wouldn't have known about it to be honest…I think he* [health professional] *was a good link to use in it because it's not something I would have known about"* (P23, DNA). For those who had an awareness of the service there was a general consensus of uncertainty related to the service, with individuals stating that they'd *"heard of it…but didn't know what it was"* (P3, uptaker), but knew *"there was a way to…motivate you"* (P13, uptaker). Others expressed uncertainty of how to access the service with somebody simply stating that *"they didn't know where to go to get referred"* (P33, uptaker). It was stated by some that clarity about the scheme came through interaction with the individual's HP. It was expressed by one participant how their HP informed them of the scheme and the options available, which appeared to result in feelings of contentment, reflected in this participant's want to take up the ARS:

[the health professional] *"informed me of it, told me there was something…she told me what is was and what I could do…and I was very pleased to find there was something because I wanted to do it… I didn't know about it before'* (P19, uptaker).

4.1.1.2 *Health and physical activity*

Some participants showed an awareness of the positive link between PA and health. However, for one DNA participant, this knowledge on its own was not enough to encourage him to take up the scheme, as other commitments were deemed as more important:

"*…you don't get to my age and not know being overweight's not good for you…so anything you can do that might knock it down a bit is obviously a good thing, I'm not daft, it's just prioritising"* (P26, DNA).

Although the knowledge of PA and health did not result in all engaging with the scheme, it did for others. Some individuals showed willingness and want to engage with the ARS after being informed

of it by their HP, especially in light of them already making positive health related behavior changes to their lifestyle (ie. diet and PA engagement):

"I know what I should be eating and I know how much exercise I should be doing…so I had started to do a bit more exercise and look a little bit more at what I was eating" [but when the health professional said] *"I'll refer you to Active Living" it was then that I thought I might as well go so that's what I did"* (P16, uptaker).

4.1.2 Experiences

4.1.2.1 *Physical activity*

Previous experiences of engaging in PA was said by some participants to aid their decision to take up the scheme. One mentioned how their prior PA engagement *"certainly help[ed]"* (P14, uptaker) when considering to take up the ARS. Some participants expressed how they had always enjoyed doing water based activities because she felt able to do them:

"I used to go swimming and I used to do water aerobics so I've always liked doing it specifically in the t'water because I've always found I can do that" (P1, uptaker).

Others also expressed how *"they used to really enjoy t'gym"* (P29, uptaker), and engaging in PA. As a consequence, this acted as a motivation for them to uptake the scheme.

Conversely, one participant used a lack of PA engagement throughout their life as a motivator to uptake the ARS. Although awareness of the health benefits associated with PA, previous non-engagement had led to feelings of guilt and thus had acted as a springboard for participation in the scheme:

"I've left it a bit late but regular exercise is good for you clearly you know there's… an amazing amount of evidence for that…I've always been too lazy or busy…I've always felt guilty that I haven't so yes the fact that I've not taken regular exercise has encouraged me to do this" (P31, uptaker).

4.1.2.2 *Previous referral*

A number of participants mentioned that this most recent referral to a IHL programme was not their first. Some participants drew on their past experience which helped influence their decision to take up the scheme for their most recent referral. Although this participant went on to uptake the CWMS, she cited how Slimming World had been of benefit before and thus expressed feelings of happiness to do it again, stating that she was *"happy* [to uptake] *because it did help me at the time"* (P13, uptaker). However, this was not the case for all individuals. One participant stated how they did not feel competent to take up the scheme again when drawing on a previous referral experience. This was because given her current medical condition, she felt incapable of being able to achieve a lot of the exercises that the referral scheme had previously offered. Thus it was felt that it was not right for her to do, but went on to take up another programme she deemed more suitable:

"*I would have been thinking well I can't go and do…all right I could probably go on a treadmill and on a bicycle…but I couldn't…do you know a lot of the things…so I didn't sort of feel it was you know what I wanted to do"* (P12, uptaker).

4.1.3 Physical Health

4.1.3.1 *Health condition and concerns*

All individuals referred to the ARS were referred because of a current or ongoing heath condition and/or concern. Some participants said how this played a role in their decision to take up the ARS. One participant explained how her goal was to look after her health, although the language she portrayed elements of control, stating how this was largely to avoid following in her parent's footsteps and becoming ill herself:

"I got hypertension [from her father] *and breast cancer* [from her mother] *two good reasons to do it…they're not nice reasons but those things do make you think I do need to look after myself…I need to do something"* (P7, uptaker).

The diagnosis of a secondary health condition also proved for one participant to act as a motivator to take up the ARS:

"I developed diabetes…so that's more of a motivation" (P32, limbo).

Conversely, some participants stated how their health condition acted as a barrier towards taking up the scheme, which was driven by their capability to engage with PA at the time of their referral. For one participant their inability to do *"a lot of exercise"* (P3, uptaker) resulted in them taking up a partner IHL scheme. Another participant cited how they were eager to engage with the scheme, but only at a time that they felt ready and able to engage with PA, to avoid feelings of incompetency:

"I knew I was going to do it…it was when I felt fit enough to get out of the pool…I didn't want to be lifted in and out" (P21, uptaker).

4.1.4 Positive attitude

A positive attitude was displayed amongst participants who had either planned to take up or had at the time of interview taken up the referral or similar scheme. Various participants approached their referral with a positive mindset. For one participant, this was because they saw the scheme as being a means to achieving an end, and although expressed feeling compelled to engage, still showed an intention to act, believing that "*if that's what I've got to do* [engaging with PA] *and it works I'll try it"* (P2, uptaker). One participant felt that following a referral to the scheme you should just *"get on with it"* (P3, uptaker). Another stated that instead of allowing their health diagnosis to become a barrier between themselves and PA, they accepted and identified with their condition. Accepting the illness allowed them to take a proactive stance against their condition, not allowing it to rule his sense of self:

"I don't wanna be ill, I don't want anything to do with it…but I'm afraid I've got it and I have to put up with it and the best way of putting up with it is to take it head on it's like okay I've got cancer on my face so what get on with it, enjoy it" (P34, uptaker).

In one case where the participant showed signs of giving up, understanding their own capabilities and what they believed was possible for them allowed them to overcome this. For this participant they devised a coping strategy, allowing them to overcome this barrier and go on to take up the scheme:

"…my knees ache…and my wrists and my fingers and stuff… I think [that] *is putting me off a little bit but I'm determined it's not going to win, I'll do what I can, if I can't do it I won't make my body do it as such"* (P24, uptaker).

4.1.5 Referral rationale

4.1.5.1 *Age*

Various female participants expressed how age played a factor in their decision to take up the scheme. Two participants felt that they were too young to be developing chronic illnesses. For one participant, the language she used suggested that she felt compelled to address her health problems and achieve better health, rather than wanting to:

"I think I'm too young to get knee pains at the moment…so that's why I think I need to make some changes to getting a better health" (P32, limbo)

Age was also used as a technique by some to make social comparisons between themselves and others. This method was used both positively and negatively by participants, which was reflected in their rationale for wanting to take up the ARS. Whilst one appeared to use it as a means of a *"wake-up call"* (P2, uptaker) to become healthier, another appeared use it as a means to prolong their health to avoid going in to a home, stating that *"*[once you get to my age] *a lot of people start going to seed, I don't want to go into a home"* (P21, uptaker).

4.1.5.2 For others

Taking up the scheme for others was a theme that arose throughout a number of the interviews. Although not individuals' sole reason for taking up the scheme, they did mention how this influenced their decision. A commonality between participants in this theme was that there appeared to be an element of feeling compelled in their decision to take up the scheme for the sake of other people, oppose to feeling in full control themselves. For one participant, the influence of their HP played a role. She cited how her HP had been very helpful regarding her illness, and she was influenced to take up the scheme because if she had not she believed she would have been letting her HP down:

"I mean you know she'd help me regardless…I felt like if I hadn't had phoned them I'd have been letting her down" (P27, uptaker).

Another participant cited that due to her profession, whereby she referred others to the IHL programmes, she felt obliged to take up the ARS as a role model for her patients and therefore be able to refer in confidence and understand the emotional difficulties individuals might face when being referred:

"I just kind of thought your right…you send your clients on this confidently so you know you can't not be turning up and doing it because you need to be a role model…yes I'm able now to say with confidence exactly what it's like and I can empathise with how they might feel" (P7, uptaker).

The theme of being a role model was prominent amongst other participants, some expressed that it was out of care for family members' health and wellbeing that they took up the scheme, in the hope that they [members of family] would adopt a healthier lifestyle (P30, uptaker & P36, uptaker). It was also mentioned doing something active together provided an additional reason to continue:

"I decided…it would do us both good and…. if I said [let's] *go together it's because I'm going that he'll come with me…that is a motivation for me to come to be honest"* (P36 uptaker).

Taking up the scheme for the family was also a theme expressed by other participants, some expressed how their choice to take up the scheme was influenced by wanting to protect others from harm, and being physically active and healthy was a means to achieve this:

"It makes me better to look after him [brother] *and the potential for being there for him* [brother]*…my mother had a stroke when he lived at home…*[if] *he* [brother] *would have found her…he* [brother] *wouldn't have known…so I'm always very conscious that I…want to be as healthy as I can be cos I don't want him* [brother] *to be in a situation of finding me"* (P9, uptaker).

4.1.5.3. Health motivations

When speaking about their motives for uptake, a number of participants cited that their reasons for participating in the scheme were to improve their health and well-being. This was reflected by a number of participants who cited how they aimed to see *"some kind of improvement"* [in their health] (P18, uptaker), with one wanting to attend to *"strengthen* [their] *core"* (P15, uptaker), another to

"increase [their] *knee strength"* (P37, DNA) and one to *"get a little bit fitter"* (P36, uptaker). Aside from physical health, it was recalled by some individuals how participation in the scheme related to mental well-being, with the scheme providing some individuals the opportunity to *"get back to being* [them]*selves"* (P22, uptaker), but also spoke in general terms about wanting to *"better* [their] *quality of life"* (P3, uptaker).

Other participants cited how their involvement in the ARS spouted from personal threats to their health, using the scheme as a means to avoid illness. One participant cited wanting to participate in the scheme as it reduced her fear of having another stroke:

"I wanted to give it a go [ARS]*.... I said I feel terrified of it happening again…you know seeing how worse it was this second time…and what would it be if it did happen again…and I've been terrified so this has helped a lot you know"* (P20, uptaker),

and another who did not want to follow in their parent's footsteps:

"…my Dad died at seventy my Mum seventy-one…my Mum had a stroke and I just think I don't really want to be in that position myself" (P9, uptaker).

However, for other participants, there was evidence of participating in the scheme because for factors other than increased health. For one participant this was found to be in terms of her body image for which she did not want to be *"sat and fat"* (P5, uptaker) reflecting how one of their motivations for participation in the scheme was to preserve her self-image.

4.1.5.4 New treatment approach

Taking up the scheme for some appeared as a way of trying another approach to achieving their goal of good health. It was claimed by some individuals that this was the result of adverse or no effects to previous treatment. For others it was used as a means to move to a more holistic approach to health management. For one participant she cited how joining the scheme was used as a means to be eventually come off blood pressure medication:

"I'd been to my annual hypertension review and I wanted to come off the medication and my GP said "no" because of my family history "I don't want you to take you off the medication I'd rather see if we can compromise here" …so I accepted the referral because obviously I knew that by keeping down my weight and exercising regularly and eating healthily I might be able to get my blood pressure down on my own" (P7 uptaker).

4.1.6 Personal motivation

When asked about factors that may inhibit uptake to the ARS, many individuals stressed the important role that personal motivation plays in the process of deciding to take up the scheme. Many individuals cited how despite the services available to aid taking up the scheme (eg.HPs, leaflets, ARS staff), this was unimportant if the person did not want to take up the scheme themselves. This was reflected in many participant accounts, with some stressing the importance of people's will to change but to also engage with PA:

"...it's not everybody's ideal [participating in PA] *everybody just wants to stay as they are don't they, but not me"* (P27, uptaker)

and their willingness to want to enhance their health and wellbeing:

"...you've got to accept that it will enhance your wellbeing and you've got to want to enhance your wellbeing" (P21, uptaker).

Other participant's stressed the importance of people taking ownership over their own behaviour, but also how this behaviour should be self-initiating, citing that in order for people to move in to action, they must first of all want to do it for themselves:

"...you've got to take some responsibility if you're not bothered you're not going to do it...no matter how easy people make it if you are bothered you'll climb through you know...you've got to want to do it" (P19, uptaker).

A number of participants also mentioned about how in order to take up the scheme, [one] *"has got to be ready"* (P27, uptaker) to commit to their actions and make the change.

Such quotes by participants highlight the influence that personal motivation and drive may have on an individual's decision to take up the ARS following a referral from their HP.

4.1.7 Self-perception

4.1.7.1 *Perceived vulnerability*

Perceived vulnerability was spoken about in both real and hypothetical terms, but both contained the underlying message that if an individual believes they do not need to access the service, nor see the service as applicable and suitable for them, they will dissociate themselves from the scheme:

"my immediate reaction when I first started to see the thing about well you must have to have something wrong with you to be...referred to Active Living…I never thought to go myself" (P16, uptaker).

A suggested method to minimise the dissociation was to improve the advertisement around the ARS. Some participants believed that the information provided in leaflets appeared to target a particular group of people and led a participant to think that *"you wouldn't think that it referred to you"* (P37, DNA). Participants felt that misinterpretation could be avoided through improved wording on the leaflets, so the message that *"it is available to all who need it"* (P30, uptaker) was transparent. This was because current advertising led to the perception for some that they were not suitable for the scheme:

"I'd seen various leaflets and about it…they [leaflets] *always said you need to be referred by your doctor…so I think that kind of put me off because it said that…I wondered whether it was something that was exclusively for people that were ill"* (P16, uptaker).

4.1.7.2 *Self-value*

Only female participants spoke about how their value for themselves affected their decision to take up the scheme. This was used both positively and negatively. Some individuals spoke about how devaluing the importance of themselves in the past encouraged them to take up the scheme:

"I think sometimes you become too focused on looking after other people and you become the bottom of the pile [but that has changed now] *I need to do this for myself"* (P7, uptaker). Whist others described how they prioritized themselves behind other commitments such as family and work:

"As a mum you tend to put yourself in the background and tend to your family…some people will say oh I must see to myself…but that's just not me" (P23, DNA).

4.2 Interpersonal level factors

Interpersonal level factors related to interactions between individuals and others in the environment. In this study, interactions with the HP, family, others (friends/acquaintances) and ARS staff were described as influential in the individuals' decision whether to uptake the ARS. Please refer to figure 5 below for full interpersonal level themes.

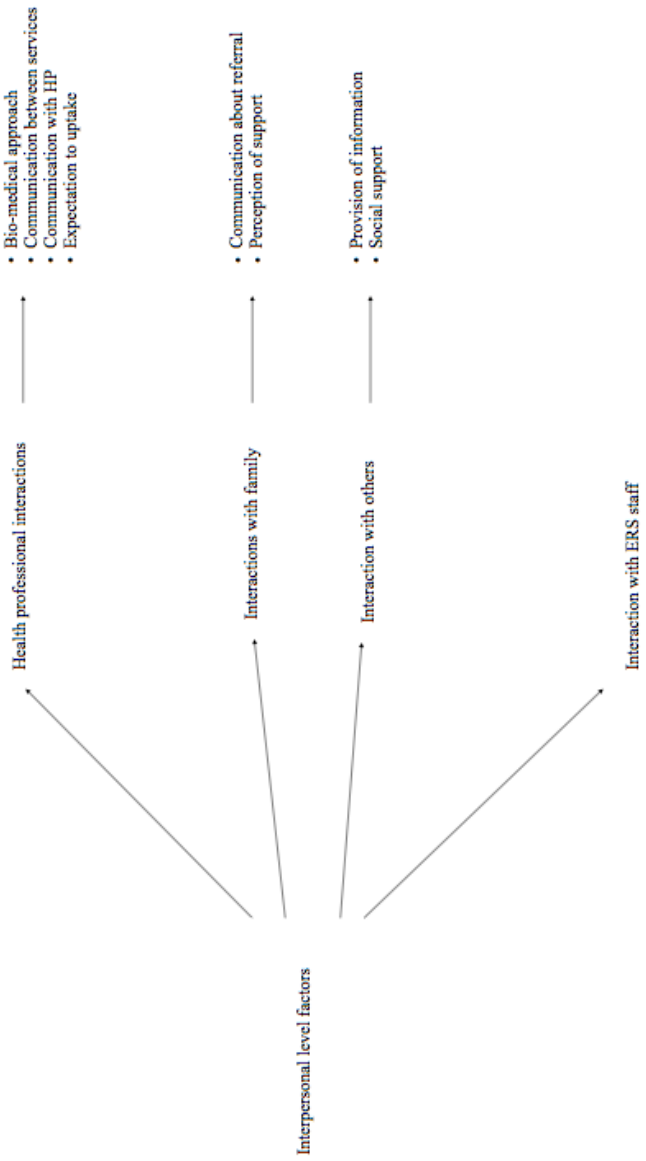

Figure 5 Overview of the Interpersonal level themes and sub-themes influencing uptake to the ARS

4.2.1 Health professional interactions

4.2.1.1 *Bio-medical approach*

When speaking about methods to increase uptake to the scheme it was felt that some HP do not take a holistic approach to health and wellbeing during medical consultations, and only focus on medical symptoms. Some participants felt PA is largely ignored during consultations, despite asking about other health-related behaviours:

"they ask you do you smoke do you drink…but they don't actually say would it benefit you from doing any exercise" (P12, uptaker).

However, this was not the case for all, as some mentioned that *"…as part of the annual hypertension review they do your height and weight and BMI and talk through exercise and the importance of it"* (P7, uptaker). However, this participant did emphasize the positive relationship she had with her HP.

4.2.1.2 *Communication between services*

Communication between different services was mentioned by multiple participants, as they felt that improvement in this area would have a positive effect on the uptake to the scheme. Speaking from experience, participants currently felt that:

"There doesn't seem to be anything that links any of these [health services] *together, they all seem to be standalone the idea it's keeping you healthy but they are all in their own little box"* (P29, uptaker).

It was suggested that health services could provide an environment whereby ERS staff could come in and discuss the service with patients (P27, uptaker). Others felt that communication between services would give both HP and ER staff an idea of what the individual is capable of achieving, as some felt that when attending the scheme they were provided with inappropriate exercises that would not have been prescribed if past medical records had been sought (P29 & P38, uptakers).

4.2.1.3 *Communication with health professional*

Participants stated that the level of information provided to them from the HP could be improved. Some participants spoke about how their uncertainty of the scheme content was only settled once they had attended their consultation with an ARS staff member. They cited that providing more information, *"even just a leaflet"* (P27, uptaker), may help individuals in their decisions to take up the ARS. Although some believed that blame should not be placed on the HP, but on the individual. This was because some participants believed that it was the individuals personal responsibility to take up the scheme, and therefore their actions should be self-initiating and possess willingness to engage the scheme themselves:

"I don't think it could be improved [the referral process], *he* [health professional] *can only offer the service and then it's up to the individual"* (P23, DNA).

A number of participants explained the verbal interactions they had with their HP during their referral to the ARS. One participant cited how their HP explained the scheme to them and what it encompassed, describing the benefits of it, but recalling how the HP also believed it would do them good. She also expressed how she was given freedom to make her own decision about her attendance at the ARS and what PA she wanted to do, although she recalled receiving guidance. She then recalled that once she got home she rang up to book a consultation, stating that the referral was brilliant and that it was sorted out in no time:

".... she [health professional] *explained everything to me, what I could do…she described the benefits of Active Living and did say "I really think it'd do you good" …there was not pressure, it was up to yourself what you wanted to do and like they would guide you obviously…so yeh, when I got home I just rang up and got an appointment…it were brilliant, got sorted in no time"* (P1, uptaker).

Another participant cited how they were glad that their HP had referred them to the ARS, recalling how they were able to do a multitude of different activities, including a referral to another IHL programme, but also was offered the opportunity to join a partner IHL scheme. Recalling also how she was offered to read through leaflets and decide what she wanted to do. She did state how it (ARS) was probably something that they were looking for:

"[Health professional] *said I could either go bike riding, swimming you can go walking…she said there's an exercise class…or have a referral for 12 weeks of Slimming World…so she said you know read through the leaflets and decide what to do…I'm glad she* [HP referred to service] *because I thought well that probably might be something that I was looking for"* (P16, uptaker).

Other participant accounts recalled how their HP was caring. One participant recalled how the HP took an interest in her health and motives for wanting to take up the scheme, listening to what she was saying and how she was feeling, showed empathy, and encouraged ARS engagement, which allowed the participant to think about what she wanted to do. The participant then recalled thinking about what she wanted to do and cited how she came to the decision to give the scheme a try:

"…we went through [my] *health problems and why I wanted to do it…I think I was feeling slightly overweight and tired and she was so caring about it she listened to what I was saying and how I was feeling… she did encourage in that sense…. I've piled on weight with not being very active and she said if you keep going doing the exercise it will help…so I thought about it and thought I'll give that a go, mind I'm only on a very light programme as far as the Active Living goes"* (P24, uptaker).

Other participants spoke about their HPs enthusiasm for the scheme, which was shown through their personal belief that the patient would benefit from engaging in the scheme. The participant then went on to recall this support from her HP was brilliant and how she then went on to call up the ARS:

"He's [doctor] *brilliant, he's like…this'll do you brilliant…it'll get you out, it'll help you with your depression, it'll help you with your anxiety, it's a really good scheme…I'm lucky really because he's supported me…I don't know how I'd have been if I'd gone to another doctor…it were brilliant…I then phoned them* [scheme] *up"* (P8, uptaker).

A breakdown in communication between the HP and patient for a couple of participants resulted in both complete or prolonged disengagement from the ARS. Two participants expressed uncertainty about the origin of their referral, with one stating that *"I don't think she* [health professional] *actually told me about the scheme…that's why I was surprised when I got a letter for…the referral on this* [ARS]*…I read that I thought oh I wonder who's referred me to this you know"* (P11, DNA). Although this participant did suggest the HP could have mentioned the scheme and she may have misunderstood, it highlights the need for connectedness between the HP and patient to ensure that all decisions during the appointment are understood by the patient.

4.2.1.4 *Expectation to uptake the scheme*

For some participants, their decision to take up the scheme appeared to be influenced by their HP. One participant was shown to act in line with their HP beliefs regarding the next stages of PA engagement, expressing how *"the physio's attitude was he expected you to go onto something else…he didn't say you've got to do this* [ARS] *but he it clear…to carry on with something"* (P31, uptaker) and thus felt there was an unspoken but assumed responsibility to engage with PA and conform with the HPs expectations:

"I'm sure he would have asked me if I wanted to do it but it was understood you know I'd want to" (P31, uptaker).

Taking away the individuals provision of choice to take up the scheme and instead prescribing it as a treatment by some was deemed, as an appropriate method to increase uptake to the scheme. One Individual believed that being 'pushed' onto the scheme would result in them enjoying it:

"[people] s*hould be pushed you know, once they get there I'm sure they'd enjoy it"* (P5, uptaker).

4.2.2 Family interactions

4.2.2.1 *Communication about the Activity Referral Scheme*

A number of participants expressed how their family members expressed happiness towards their referral, with some family members stating that *"they were chuffed"* (P7, uptaker) with their involvement. One DNA participant cited how following their referral they did not mention it to anyone. However, the participant felt that if she told her husband about her referral *"he would have encouraged* [her] *to go"* (P23, DNA). In another case, the participant's partner expressed a lack of control over his decision whether to participate in the scheme as this was shown to be controlled by his spouse:

"R1: So was it breaking your thumb and ankle that put you off?"

"P1: Well it didn't put me off, the wife said no you're not doing that anymore" (P26, DNA).

4.2.2.2 *Perception of support*

Support from the family was shown to influence an individual's decision take up the ARS, and was displayed in a number of different ways, including physically and verbally. It was mentioned by one participant that because of her spouse's involvement with PA encouraged them involve themselves with it to. In other accounts, it was cited by some how scheme involvement was regulated by their partners. One participant claimed *"that* [husband] *is the one that pushes me to go* [ARS]*"* (P24, uptaker). However, in some cases being 'pushed' was cited be welcomed by the individual, stating that it was this verbal encouragement and their belief that it would be a cause for good, that supported their decision to uptake, because without their spouse showing care or interest they stated that they would have thought *"oh I can't be bothered"* but instead thought *"right, yes, I'm going!"* (P28, uptaker).

For another participant, spouses provided a meaning to engage with the service by putting into perspective how the potential health benefits gained outweighed any monetary expenditure:

"…at the end of the day it's like [my wife] *said what does it matter what it costs as long as it leaves some good"* (P2, uptaker).

Others expressed how their spouse provided physical support because without them they would not have been able to take up the scheme due to health constraints:

"… [due to my condition], *they've taken my license off me…so he's [my husband] very good because he brings me and then he sits in the car…. without him I wouldn't have been able to come* [to the ARS]" (P4, uptaker).

However, family support was not deemed as relevant for those who exhibited more autonomous forms of motivation:

"I would go irrespective [of whether my family were supportive or not] *you know it's not a factor"* (P31, uptaker).

One participant noted that enjoyment of the scheme could be enhanced through making the ARS more family orientated, and allowing families to participate in the scheme together:

"I would love to bring my kids as well so as a family we could enjoy it" (P32, limbo).

4.2.3 Interaction with others

4.2.3.1 *Provision of information*

The information provided by services involved in the referral process presented itself in multiple ways, and in one case highlighted the need to educate other services about the ARS logistics and content. One individual was told by gym staff members that she was ineligible to join the gym due to an existing health condition; she was told that in order to join the gym she was required to get an active referral form. During the interview she cited that the gym staff did not inform her of what the ARS was, nor did they explain the meaning or process of the referral:

"…she wrote it down on a piece of paper and I just took that to my GP, so it wasn't explained to me that I have to join a scheme" (P17, DNA)

The power of communication with others was expressed in terms of recommending a particular activity and also awareness about the scheme whereby it was cited that *"I wouldn't have known without hearing it from people who were going"* (P12, uptaker).

Another participant made reference to how speaking to others about the scheme and hearing their thoughts and opinions about it, made them think about whether it was suitable for them, and thus influenced their decision to uptake:

"…I caught one of the fellas coming out who was doing the exercises and he was saying it's belting here…he said they're all old folk so I'd fit in…so I thought that'll do for me" (P26, DNA, referring to a previous referral).

4.2.3.2 *Social support & interactions*

Some participants mentioned that one of their goals for attending the scheme was to form new relationships with others. For individuals who lived in social isolation, the scheme provided a suitable environment for interactions, stating that it was *"a lot better"* (P10, uptaker) to participate in exercise with others, rather than in isolation. Exercising with others was perceived by one participant to act as

a motivator for ARS engagement, because by involving someone they felt they would be less inclined to let them down, thus encouraged PA:

"I said 'I could do with going back to the gym and if you [friend] *didn't mind having a gym buddy'… I think it's just you're more inclined…if you get up one day and you think 'oh I can't be bothered' but you know somebody's coming to pick you up or you've got to meet somebody there, you get up and you do it"* (P35, uptaker).

4.2.4 Interaction with exercise referral scheme staff

Many participants stated that following their referral from their HP very little contact was made by ARS staff, with some participants expressing difficulty at booking an initial consultation with a referral officer. Individuals made reference to the fact that this could be detrimental for individuals who *"didn't have the motivation to want to achieve*" (P18, uptaker) because it provided them an excuse to forget and lose the motivation to call back. Some participants stated that one of the factors influencing their decision to take up the scheme was the support they anticipated being provided by the ARS staff. Participants described how they were looking for guidance, in some cases this was due to feeling disheartened at not meeting goals, whilst for others it was more advice in order to prevent further damage to themselves:

"Once I start doing something I overdo it… like being told structurally how to do things and build things up slowly I think I just need help in that area" (P29 uptaker).

Although making initial contact with the ARS team was perceived to be difficult, once contact had been made this was reported to be *"very good"* (P13, uptaker), being provided with both choices of place and time of their consultation. As a note for improvement, one participant mentioned that although the ARS staff *"explain more…so that before you go you can consider what you would like to do"* (P28, uptaker), they would have benefited from knowing what to expect during the consultation so not to have gone in feeling *"very apprehensive"* (P28, uptaker).

4.3 Organisational level factors

Organisational level factors supported themes in the data that related to external structures, thus being beyond the individual's control. Factors identified that influenced decisions whether to uptake the ARS included the accessibility of the service, cost and location of PA facilities, the promotion of the ARS, and the scheme content. Please refer to figure 6 below for full organisational level themes.

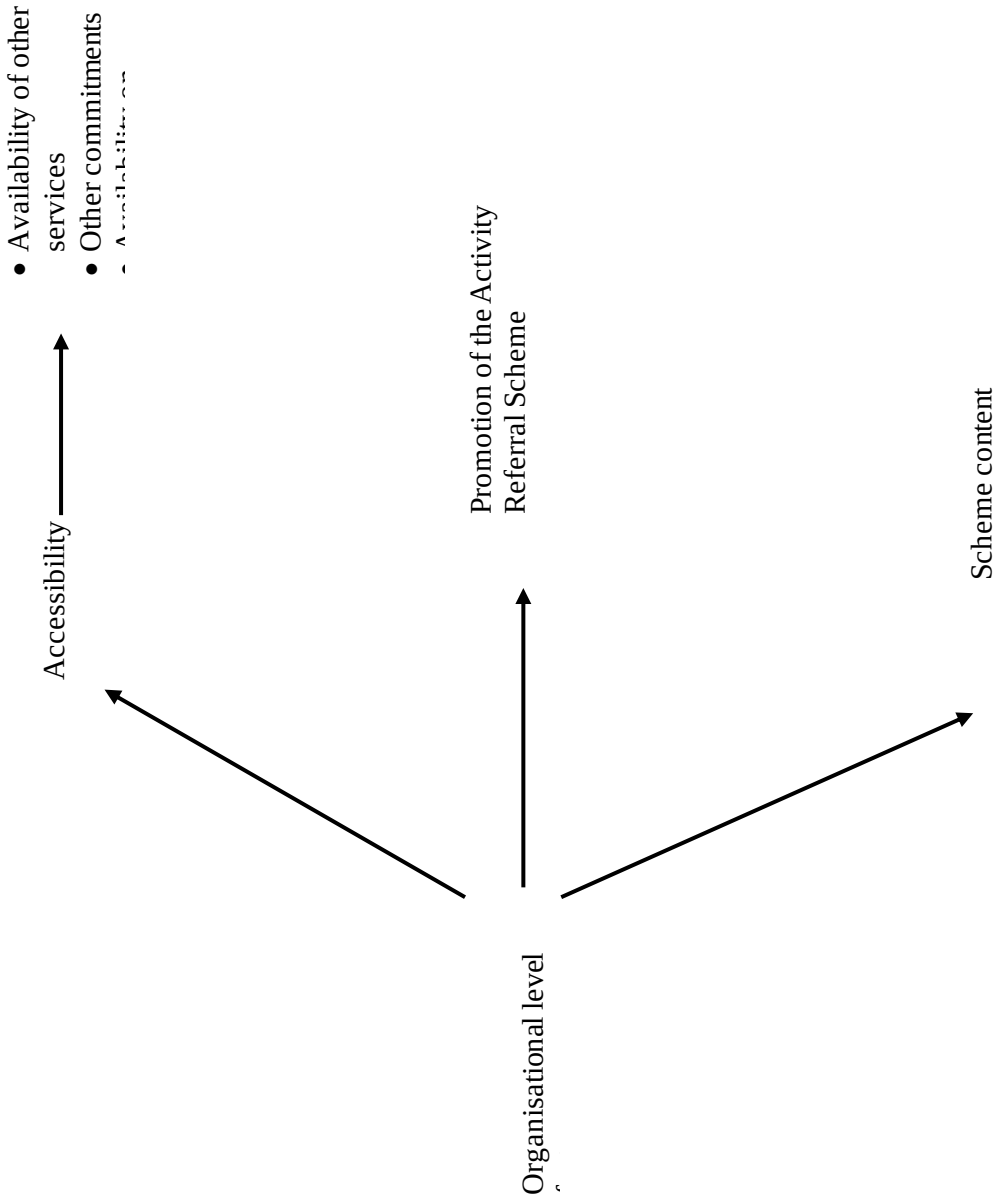

Figure 6 Overview of the Organisational level themes and sub-themes influencing uptake to the ARS

4.3.1 Accessibility

4.3.1.1 *Availability of other services*

It was expressed by one participant how she felt that she *"had no option"* (P38, uptaker) but to take up the scheme. She expressed a lack of control over her actions to take up the ARS, which she believed was in part due to her age, which as a consequence felt like she was treated like a pawn in an already pre-determined system, where a conversation of other follow on activities and discussion regarding personal PA capabilities was not considered:

"*…well I had no option I felt because I didn't know where to go* [following physiotherapy] *and I think that as you find when you get older you just get moved around, like a pawns system have been created and no-one looks at the whole person…no-one* [health professional] *sat down with me and said you can't do this or that, you can do this and what options I had…we go through physio…and then active living…and then increase time at the gym…I just felt I was being moved along"* (P38, uptaker).

4.3.1.2 *Other commitments*

External constraints were found to influence uptake to the scheme, proving to negatively impact upon a couple of individual's decisions to engage with the ARS. One DNA participant described how they prioritised *"their wife's health and* [health related] *appointments for different things"* (P26, DNA) over engaging with the ARS. Another DNA participant noted that she was unable to turn her positive intentions to action due to having other commitments, including family and work

"…at the time I really did want to do it but it was once I got back into work…and I've me mum as well you know it's all just family and work" (P23, DNA).

Although disengagement with the service could be associated with a lack of motivation to engage with PA, this was not shown to be the case in this study. All the DNA participants cited how they were still physically active, although not on the ARS. One participant stated that they had *"started on the Wii Fit at home"* (P23, DNA) in order to strengthen their knee. Another participant also cited how the use of technology allowed him to track his PA progress, and cited how he recently *"bought a dog"* (P26, DNA), which encouraged him to walk a couple of miles per day.

4.3.1.3 *Availability of consultation appointments*

The time of referral appointments proved to be a factor in participants' decisions to uptake the scheme. Despite showing motivation to attend, the availability of consultation appointments affected the ability of some participants to attend:

"…I phoned like three different phone conversations and just couldn't book an appointment…but it was purely down to the lack of time because the inductions were during the day…they wouldn't offer me an evening one" (P37, DNA). It was suggested the working status of individuals should be taken into consideration when arranging consultation appointments.

For other individuals, the lack of available appointments was seen as a potential negative influence on taking up the scheme, with several participants describing how they were required to wait a while for a consultation. Individuals who did not want to wait a prolonged period of time requested to be seen in another location. One individual whose appointment *"was going to be a month or something like that"* (P22, uptaker) and stated the team *"just sort of left it like that",* asked to be seen in another location in fear that if she left it that long *"you know, you let things slip"*. However, other participants reported no problem in waiting time for a consultation and felt *"they didn't have to wait long"* (P15, uptaker).

In terms of methods to improve uptake, one participant felt HPs should prescribe referral appointments based on patients displaying a want and willingness to change:

"if somebody shows merit and somebody shows willingness to try they should get that little bit more help" (P3, uptaker).

Others believed that by having a universally accessible database whereby patients could see where and when consultation appointments were available, patients could have more choice in where and when they attended an appointment (P9, uptaker). It was believed that by doing so it would reduce the burden on the individual having to ask ARS staff about the availability of other appointments when there was a waiting list for their desired choice.

The provision of choice given as to the location of where to attend a consultation was found to be a factor influencing uptake to the scheme as people could *"what was the nearest place for them to go"* (P16, uptaker).

Due to the location of one participant's healthcare facility both the service provider and participant were unaware of the ARS, and as a result had had no communication about it:

"I don't live in the [Wigan] *borough I live in Bolton, so I've not had any communication"* (P17, DNA).

4.3.2 Financial

4.3.2.1 *Cost of exercise facilities and classes*

For one participant it was mentioned that joining the ARS was a more financially viable option then joining the gym because of his current financial status *"…with being unemployed joining the gym was out of it because it's like thirty odd pound a month well I can't afford thirty odd pound a month…so I went to the doctor's and they said we'll refer you to Active Living"* (P3, uptaker). However, this also affected the exit strategy for the scheme because some individuals mentioned that they would stay on it as it saved money compared to getting a gym membership.

Although the scheme was not free but offered at a subsidized cost, cost was also seen as a means to filter out those who want to uptake and those who do not, as fear of offering a free service would be that *"you'd get some people come that weren't really interested"* (P21, uptaker).

4.3.3 Promotion of the Activity Referral Scheme

There was a general consensus amongst individuals, who felt current methods used to promote the ARS were inadequate. Participants stated that although there was a high a volume of leaflets available in places such a GP surgeries and leisure facilities, it was stated how verbal communication may be the preferred option of dissemination as *"being told about something it is different to seeing a leaflet…because ultimately I don't think I'd pick it* [leaflet] *up"* (P37, DNA). A number of

participants favoured verbal communication, one participant in particular said they would not have attended the scheme without *"a verbal push"* (P4, uptaker).

It was cited by one participant that not knowing about the breadth of programmes available within the ARS made her reluctant to be referred to the scheme. Her previous experiences of the scheme and her rationale for not wanting to be referred to the ARS again were that given her current physical ailments, did not feel capable or participating in the activities. Following a discussion with the researchers about what the scheme offered, the individual cited *"that isn't just about coming to the gym and doing exercise…there are other options…and I think it's the other options that are not pushed enough"* (P12, uptaker), and it is the latter that affected her uptake.

For one participant who had not taken up the scheme, they believed that by sending out additional information to those who had not booked a consultation, would act as reminder to uptake the scheme as it would maximize thoughts such as *"why have I not gone, why have I not tried it, why I have I not made that effort"* (P23, DNA).

When asked about factors that affect uptake to the scheme and how these could be improved, an overwhelming majority of participants made reference to the advertisement of the service. Both DNAs and uptakers claimed there was a lack of advertising within the borough, resulting in people being unaware of the service. Others spoke about having the presence of an ARS staff member in GP surgeries to help promote the service, so individuals had someone to chat with about the scheme, and there would be someone there to inform them of what the scheme is about (P5, uptaker).

4.3.4 Scheme content

It was mentioned by a number of participants who had attended physiotherapy classes prior to their ARS referral that attending the scheme felt like a natural progression from their physiotherapy. One lady spoke about her dismay at finishing her physiotherapy classes and expressed her personal desire to continue PA that she felt capable of doing, and thus was relieved when the scheme was offered because it acted as a lifeline:

"I was really gutted at the fact that I'd finished [physiotherapy class] *I wanted to carry on doing something I could do…so yeh it were brilliant when they* [health professional] *mentioned it* [ARS], *it was like a lifeline really that something else were in the pipeline that would help things"* (P15, uptaker).

Other participants mentioned that it was the wide variety of exercise options available that influenced their decision to take up the scheme. However, it was stated by one lady that the ARS should provide a higher volume of certain classes (swimming) in order to accommodate what people would like and feel comfortable to do, oppose to sessions being offered on the basis of your limitations to engage with other types of PA:

"I think they should include swimming if that's what some people prefer because some people don't like doing some exercises…I think you should be given the choice if you feel uncomfortable doing that, not just because of your limitations" (P13, uptaker).

Engagement with the scheme activities was said by some to provide structure to their lives. Structure was mentioned in a range of ways, from individuals being provided with a *"structured programme* [of exercise] *that gives you…things to do, targets to achieve"* (P32, limbo) which was further echoed amongst other participants who stated that by attending organised sessions it was easier to feel committed and set goals, and provided the leap of thinking about doing something to doing it:

"when you do something adhoc it's not having a goal or target it's easy to say oh sod it…because if it's left up to us I keep thinking about it and not doing it" (P14, uptaker).

Section 2 – Aligning the findings to Self-Determination Theory

This section of the results will demonstrate how SDT can help explain participant decisions whether to uptake or not take up the ARS. The following themes will be discussed, a) goal content and variation in behavioral regulation; b) The importance of autonomous motivation during the uptake process; c) Needs support and needs satisfaction; d) Lack of needs support and lack of needs satisfaction.

4.4 Goal content and variation in behavioural regulation

Individuals exhibited a range of different goal content for participating in the ARS, which was shown to reflect in the quality of motivation that individuals exhibited, and controlled and autonomous behavioural regulations. However, some participants cited having multiples goals and motives for engaging with the ARS. A majority of the participants interviewed cited how they were engaging with the scheme to increase their health and wellbeing (eg.to improve their strength, for increased mental wellbeing, to lose weight to improve health for increased mobility), thus portraying intrinsic goal content. Such intrinsic goals were found to be associated for many of the participants with them valuing the outcomes associated with PA engagement and displaying free will to engage with the scheme, many portraying forms of identified regulation:

"I've noticed that my strength is going now I'm 50, just going down and down…I just thought best to start strengthening myself up…that's why I'm doing it" (P25, limbo).

Some participants mentioned having multiple motives to engage with the ARS, including both autonomous and controlled forms of motivation. In the case demonstrated below, the participant demonstrated forms of identified regulation and spoke about wanting to participate in the ARS because he wanted to strengthen his back following a prolonged period of trouble with it:

"I've had this bad back for years and years and never done anything about it…but it had become more of a problem recently…I don't want a bad back…coming here [ARS] *is to help that…that is a reason for my attendance"* (P31, uptaker).

However, he also displayed signs of introjected regulation alongside his autonomous motivation. This was expressed as a self-imposed pressure to maintain his own health because of the need to be able to fulfil his caring obligations to his wife:

"...one of the motivating features for coming on this, as well as getting my back seen to...as well as it being a pleasant experience, is because I can't afford to be ill now you know because of carting [my wife] *around"* (P31, uptaker).

Other participants who displayed forms of identified regulation reported simultaneous elements of external regulation. Participant 27 expressed that her goal for partaking in the scheme was *"to feel better"* (identified regulation) because she stated how her pain as a result of her medical condition had negatively affected areas of her life such as work, to which she enjoyed. However, she also reported being in *"agonising pain"*, and how her decision to take up the scheme was in part influenced by her HP wanting her to lose weight so she could prescribe her different medication to aid her condition (external regulation). Thus attending the scheme was seen as a means to an end, whereby losing weight on the scheme would result with being rewarded with another type medication:

[HP] *"want me to lose some weight in order to go in cause they don't want it to make me bigger than I already am...I'm* [health professional] *reluctant to put you on* [medication] *and I* [health professional] *think you should go to Active Living"* (P27, uptaker).

Another participant expressed both intrinsic and extrinsic goal content and motives for taking up the scheme. She cited how on one hand her attendance was to *"get her breathing better"* (P5, uptaker), (intrinsic goal content/identified regulation), but on the other was related to body image and was to avoid her fear of being *"sat and fat"* (extrinsic goal). However, she expressed ownership over her actions and an innate willingness to participate in the scheme claiming that she *"didn't need pushing...I like doing lots of exercise you know"* (P5, uptaker), displaying how multiple motives can co-exist within the same individual, and still move them to action.

4.5 The importance of autonomous motivation during the uptake process

As discussed in section 4.1.6.1, the importance of personal motivation was spoken about in terms of methods to increase future uptake to the scheme. Individuals cited that in order to engage with the

service, this must in part come from individuals 'wanting' to. Participants cited how individuals must express a 'willingness' to act, with one participant citing that if one were not willing to engage then this would result in non-uptake or by the use of her language, suggested that this may also led one to act out of controlled regulation, therefore not fully internalizing/integrating the behavior:

"have got to want and be willing to make themselves better…cos if you're not you're not gonna do it or you're not gonna do it properly" (P38, uptaker).

Other participants spoke about the importance of one *"being ready"* (P27, uptaker) to commit to their actions and thus engage with the scheme. They spoke about the process of 'committing' as being about accepting the want to change and in this context about being and feeling healthier. They recalled that accepting the want to change would enhance an individual's volition and willingness to act.

4.6 Needs support and needs satisfaction

Several examples of needs support and needs satisfaction were evident in participant accounts. When recalling their experiences of referral, participants made reference to how their HP supported them through behaviours such as the provision of meaningful choices, making the effort to see things from their perspective, listening to them, showing empathy and offering suitable exercise options, which in turn was believed to help inform their decision to take up the ARS.

One participant who expressed reservations in taking up the scheme demonstrated how needs support encouraged her decision to take up. She described how she had concerns about engaging in gym based activities over fear that it would be too much for her knees (suggesting low competence satisfaction). In response to this she recalled how her HP listened to her concerns (relatedness support), making the effort to see it from her patient's perspective (autonomy support) offering her a range of other (and perhaps more suitable) activities (autonomy & competence support), and encouraging her to make her own decision over what she wanted to do (autonomy support). In turn,

enhancing her perceived competence to take up the scheme (competence satisfaction), but also ensuring her actions were a true reflection of what she wanted to do (autonomy satisfaction):

[health professional] *"....said how would you think about going further, she said go to a gym and I thought....well I don't know about that I said with weights and things...I felt the gym would have been too much for my knees....she said you can do different things...and that's when she give me that [leaflet] and she said just read through it...then see which one you think you would like to do...she explained it could be more low impact exercises...she mentioned aqua aerobics my ears pricked up, I thought yeh"* (P28, uptaker).

Another participant explained how her HP took time to understand her rationale for wanting to engage in the scheme, and provided her with the opportunity to be able to be open up and express how she was feeling (autonomy support). She cited how the HP responded with warmth, showing empathy towards her situation by actively listening to her (relatedness support), and in response providing her a meaningful rationale to engage with PA and the ARS (autonomy support). She also recalled how the HP informed her how ARS staff would tailor a PA specifically to suit her capabilities, and that they would not make her do partake in anything that she did feel capable of achieving (competence support), enhancing her perceived competence (competence satisfaction). The HP was also shown to believe in her patient, believing that she was capable of engaging in the ARS, and as such was confident that it would achieve her patient's goal of losing weight and toning up (autonomy and competence support). Such actions by the HP corresponded with needs satisfaction, allowing the participant to foster feelings of autonomy, in the sense of making their own decision and acting out of volition:

"...we went through [my] *health problems and why I wanted to do it...I think I was feeling slightly overweight and tired and she was so caring about it she listened to what I was saying and how I was feeling... she did encourage in that sense.... I've piled on weight with not being very active and she said if you keep going doing the exercise it will help...she kept saying that "I would be individually worked out a programme" ...she kept saying you know "you can do this, it will work, it will work, she said they won't give you anything that you can't do and such" ...so I thought about it and thought I'll give that a go, mind I'm only on a very light programme as far as the Active Living goes"* (P24, uptaker).

Some participants spoke about already feeling competent engaging in the ARS because of their previous relationship with PA, despite the HP still supporting their needs. One individual described their referral from their HP to the ARS as *"brilliant"* (P1, uptaker). She recalled how the HP explained the various different options available to her, and also provided a rationale for engagement (autonomy support). She explained how the HP created an environment free from pressure, where she was in control of the decision she wanted to make (autonomy needs support & satisfaction):

".... she [health professional] *explained everything to me, what I could do…she described the benefits of Active Living and did say "I really think it'd do you good" …there was not pressure, it was up to yourself what you wanted to do and like they would guide you obviously…so yeh, when I got home I just rang up and got an appointment…it were brilliant, got sorted in no time"* (P1, uptaker).

However, the participant also recalled how she had been sedentary for 9 months previous to her referral following two knee replacements, and expressed frustration at the consequences of this lifestyle. Thus she expressed happiness at her referral because it allowed her the opportunity to be able to engage in some type of PA (competence satisfaction). Her use of language also suggested that her decision was something that she was in control and that it was something that she wanted to do (autonomy satisfaction):

"[following her referral to the ARS] *...I just thought "oh good, I can go and start getting some exercises done again" …I'm going t'be able and do some sort of exercise"* (P1, uptaker).

She also cited how due to her previous participation in PA, how this had provided her with the knowledge and confidence to be participate in water based activities (competence satisfaction), and how this had led to feelings of enjoyment (intrinsic motivation):

"I used to go swimming and I used to do water aerobics so I've always liked doing it specifically in the t'water because I've always found I can do that" (P1, uptaker).

For individuals who displayed autonomous forms of motivation, needs support from the HP did not appear to be important for individuals to uptake. For example, some participants showed intrinsic forms of motivation, expressing a desire to re-engage with PA, describing how they enjoyed being physically active and had been looking forward to re-engaging with PA following a short break. The

inherent enjoyment of engaging with PA highlighted how needs support from the HP for this participant was not important to support their decision to uptake, noting that they *"didn't need pushing* [by health professional] *…I've been wanting to go back….to me exercise"* (P5, uptaker).

This section demonstrated three cases where needs support for autonomy, competence and relatedness from the HP and the resulting needs satisfaction were clearly articulated. This section ended by portraying when an individual is autonomously motivated, how needs support from others may not be deemed as important to uptake.

4.7 Lack of needs support and lack of needs satisfaction

Several examples of lack of needs support and lack of needs satisfaction were observed in participant accounts of referral. In cases where the need for autonomy was not satisfied, participants lacked perceived control over their own decisions and actions to take part in the scheme. Lack of needs support was shown to occur in both the HP and home environment. The examples below demonstrate how in some instances lack of needs support led to poor needs satisfaction but did not prevent uptake (first example), but in others lack of needs support led to prolonged disengagement and non-uptake (second and third example). The second example also demonstrates the negative emotions that can arise when needs are not supported.

For one participant, she expressed how she felt obliged to take up the ARS because no other options were made available to her (lack of autonomy support), citing frustrations at interactions with her HP. She recalled how the HP made her feel that she was an inconvenience to her day, reporting cold interactions whereby the HP would not pay attention to her during her physiotherapy sessions (lack of relatedness support), nor provide her with guidance on her recovery exercises (lack of competence support), which resulted in low competence satisfaction:

"I just felt all the way through the physio that I was causing an inconvenience to her [physiotherapist] *day…cos I would go into the little gym that they had there* [physiotherapist based gym] *and she would put me on the bike, leave me in there and say I will be back in a few minutes…. she didn't actually look to see if I were doing it right"* (P38, uptaker).

She then went on to say how her HP had not been very helpful, recalling that she had not taken the time to discuss other PA options (lack of autonomy needs support). The language she used also assumed an element of control, suggesting that if the participant wanted to continue getting stronger she should attend the ARS. She also cited how the HP was not forthcoming in terms of discussing her PA abilities despite her actively trying to understand what she was capable of doing without causing further damage to her health (lack of autonomy, relatedness and competence support) therefore the HP was not seen as acting compassionately or understanding towards her. This led the participant to state that she felt she was going 'through the motions', perceiving a lack of control over her actions (lack of autonomy satisfaction):

"*…well I had no option I felt because I didn't know where to go* [following physiotherapy] *…she* [physiotherapist] *basically said that she couldn't do anything else for me but if I wanted to continue strengthening my hips I should go to Active Living… she* [physiotherapist] *wasn't very helpful…I felt like I was just going through the motions"* (P38, uptaker).

Another example of lack of autonomy support from the HP was provided by participant 32. She cited during her interview how she was first made aware of her referral to the scheme when the ARS wrote to her reminding her of her referral. Upon further discussion she stated that the HP had not informed her about her referral to the ARS. For this lady she said how this led to feelings of anger:

"…fifteen days ago a letter came that you have been referred to the active living team and I was like I didn't really think who has referred me and I didn't know, so initially I was angry" (P32, limbo).

Lack of needs support was also shown to occur in the home environment by significant others. One participant expressed motivation to take up the ARS following his referral for want to improve his physical health (identified regulation). However, upon mentioning it to his wife, he was told that he would not be doing it, as she feared for his health following injuries sustained during a previous ARS referral. However, in doing so, she disregarded why he may have wanted to take up the scheme, but

also disallowed him the control to make a decision that stemmed from himself (lack of autonomy support):

[When asked if they were motivated to uptake the ARS] *"... oh yeh"* [researcher] *"so was it just the breaking of the thumb and the ankle that put you off?"* [participant] *"well it didn't put me off, the wife said you're not going anymore…there's only one boss in our house…. she's worried what* [injury] *I'll come home with next"* (P26, DNA).

Although this individual was autonomously motivated to take up the scheme, controlling behavior from his wife prevented him taking it up:

"[wife] *says you're not going back there* [ARS], *I've seen what is does to you* [referencing injuries sustained during referrals], *so I thought fair enough"* (P26, DNA).

Chapter 5

Discussion

The aim of this study was to explore participants' experiences of referral to the ARS to understand factors that influence uptake. It also aimed to explore how SDT can help explain participant experiences of uptake in an ER setting. This is in order to develop recommendations to increase uptake to the ARS. This was to be achieved by answering two research questions.

1. What factors affect uptake to the Activity Referral Scheme?
2. How can Self-Determination Theory help explain participant decisions whether to uptake the Activity Referral Scheme?

The inductive and theoretical analyses displayed the participants' motives for both engaging and disengaging with the ARS. The discussion will start with an outline of the key findings, then, discussion of these findings in relation to wider literature. It will then go on to discuss the limitations and strengths of the present research study. Implications for policy and practice will then be outlined, and recommendations for future research to drive this topic forward. This discussion will be finished with a conclusion summarizing the key points of this research project.

5.1 Key findings

The results from the inductive analysis demonstrated multiple factors that influenced uptake to the ARS. On the individual level, factors such as knowledge and awareness of the ARS, health motivations and the personal motivation to want to uptake were all found to influence an individual's decision whether to uptake the ARS. Interpersonal level factors were shown to have an influencing effect on an individual's decision to uptake the ARS. Communications with the HP during referral to the scheme and support provided from family members impacted on uptake. In terms of organizational factors, accessibility to the scheme, including factors such as the availability of referral appointments and individuals' external commitments, were shown to influence an individual's decision to uptake the scheme.

Results from the theoretical analysis indicated how variation in motivational regulation was perceived to influence an individual's decision, with some participants' displaying how both controlled and autonomous forms coexisted together to influence uptake. Needs support from the HP was also believed to positively influence uptake in this study, although amongst participants who displayed autonomous forms of motivation, needs support from the HP and family members did not appear to be as essential for individuals to take up the scheme. Although in cases where the HP was shown to display a lack of needs support this was believed to impact on the perceived control one had over their actions and in one case was shown to led to feelings of anger.

5.2 Interpretation and discussion of findings

Individual motivation to uptake

The role of personal motivation was a finding that although not surprising, was reported by a majority of the participants interviewed, and was cited as being important to influence uptake to the ARS. A majority of participants cited having intrinsic motives, defined as *"goals that are assumed to be inherently satisfying and to foster need fulfilment directly"* (Ryan et al, 2009: 116) (eg..developing intimate relationship, maintaining one's health), although extrinsic motives defined as goals that *"are focused on outcomes that are themselves not inherently satisfying of basic need"* (Ryan et al, 2009: 116) (eg. for self-image) were also expressed. Many participants portrayed autonomous forms of motivation. Identified regulation was recognized amongst a majority of the participants, with individuals citing how they valued the outcome of PA engagement (ie. increased mobility to play with grandchildren). Many participants cited the importance of autonomously motivated behavior to take up the ARS. Although some of our findings support Deci & Ryan's (2002) hypothesis that more autonomous forms of motivation are predictive of exercise behavior, evidence also suggests that controlled forms of motivation need not hinder engagement if accompanied by autonomous motivation (Markland & Ingledrew, 2007). Some participants cited having controlled motives to take up the ARS, these related to caring for one's spouse and because the HP told them to (external regulation). Although controlled motives, it is important to highlight that these were also complemented with autonomous forms of motivation, with participants citing how they were

influenced to take up the scheme for want of better health. As reported elsewhere by Gillison and colleagues (2009), the presence of a controlled motive(s) may serve a functional purpose in deterring participants from missing PA sessions (i.e because they perceive a "need" to attend). Thus, the co-existence of controlled and autonomous motivation may help enhance uptake and adherence to the ARS. As studies have found that introjected forms of motivation are associated with short term adoption of behaviours (Pelletier et al, 2002), it was consistent that this form of motivation regulation to be a motivating factor in the uptake stage to the ARS, although it is unknown whether these individuals adhered to the scheme once they started. The pressure inherent in introjected regulation may also help sustain PA engagement over time, especially with competing demands in life (Mullan & Markland, 1997).

Most studies suggest it is motivation quality that is important for PA adherence (Ryan et al, 1997, Thogerson-Ntoumani & Ntoumanis, 2006, Teixeira et al, 2012, Klain et al, 2015). However, the level of engagement required for uptake and adherence differs markedly and it is possible the motivational antecedents may differ (i.e. the "uptake" process itself does not require "deep engagement" from the individual, they simply must call to book and turn up to their ARS consultation, compared with PA adherence which requires active engagement in the long-term). Whilst this study indicates that autonomous forms of motivation are important during the uptake process, participant accounts suggested controlled motivation may also play a role. However, because no participants demonstrated solely controlled forms of motivation in this study, conclusions cannot be drawn as to whether controlled motivation alone would be sufficient for uptake.

Explaining non-uptake for DNA participants

All the participants that did not take up the scheme deviated from what was expected, this was because they all spoke about having established exercise patterns prior to their referral to the ARS. This therefore suggesting that being a 'DNA' is not necessarily a negative if established exercise patterns have already been formed, and suggests that perhaps ERS should focus on referring individuals who have a health condition and are sedentary, oppose to those who have a health condition and are engaging in PA, in line with recommendation 2 of the NICE 'Physical Activity:

exercise referral schemes' guidance. Although, a possible explanation for why DNAs deviated from what was expected could be that those who are more motivated to engage with PA may have been more likely to respond to the study invite.

For one, disengagement with the ARS was in part believed to be due to lack of needs support occurring on the interpersonal level of the SEM, as one participant recalled that he was told by his spouse that he would not be taking part. Although needs dissatisfaction has been shown to precede or be predictive of negative outcomes, (Bartholomew et al, 2011a, Bartholomew et al, 2011b, Rahman et al, 2011 and Gunnell et al, 2013), no participant within this study made an explicit reference to feeling as such, perhaps because it was not prolonged, having only occurred during one interaction. One explanation could be by not knowing about their referral, this did not impede on individual's daily behaviors and actions. It was noted by a participant how when she received written notification of her referral she expressed feelings of anger. However, this also acted as a prompt to investigate the ARS and organize a consultation, suggesting that written reminders may act as a facilitator to uptake.

Although a number of DNA participants showed interest in taking-up the scheme, findings suggested that in some cases motivation on its was not enough to result in uptake when the individual was faced with environmental barriers beyond their control. Organisational factors such as work commitments and availability of referral appointments, were cited to obstruct an individual's ability to take up the scheme. Similar findings have been reflected in other ERS research (Morgan et al, 2016, Campbell et al, 2015), although extending these findings by portraying how the outcome of these obstructions made the participant feel and how it affected PA behavior, as for one participant, not being offered an appropriate appointment left the feeling disheartened and also *"little lazy"* (P37, DNA).

Such findings highlight the importance of studying uptake within the SEM model as the findings demonstrate that lack of needs support can occur at multiple levels and is therefore a multi-dimension/level problem, that occurs across multiple levels of the SEM.

Family support during the uptake process

The accounts provided in this report indicated that family support was acted as both facilitator and barrier towards taking up the ARS. In one participant's account, his wife was shown to be

unsupportive towards his decision to take up the ARS, and was seen to actively thwart his choice to attend (thwarted perceived choice and relatedness), because she worried for his health and wellbeing. This in part led to his disengagement with the service, similarly found in Rosland et al's (2012) research, where controlling behaviour by family members was found to have negative outcomes on behaviour.

For individuals who did uptake the scheme, the provision of both emotional (providing general encouragement) and practical (informational support) support was perceived to positively impact on an individual's decision to uptake, especially for participants who expressed hesitancy to take up the scheme. For another participant who did not go on to uptake the scheme, she recalled that if she had told her spouse, she believed that he would have encouraged her to uptake. Lack of family support in Trost et al's (2002) & Pentecost & Taket's (2011) studies was also demonstrated to negatively impact on individuals' uptake to an exercise programme. Findings in the present study suggest that the family can act as a driving force in PA adoption, and although not all sources of family support were shown to be positive, it does portray the influence that the family has over individuals' decisions to take up the ARS. Especially when the support is provided by a partner or spouse. Such findings align themselves with other literature that have explored adoption and maintenance of health behaviours or PA specifically (Trost et al, 2002, Pentecost & Taket, 2011, Kinnafick, et al, 2014, Kelly et al, 2016 & Morgan et al, 2016), and therefore provide more evidence to suggest that utilizing the family during the referral process to an ERS may help increase the uptake to these schemes.

The role of the health professional and ARS team

One finding that was of particular interest was the promotion of PA by the HP. Amongst participants there were conflicting accounts, whereby one participant felt the HP focused purely on a bio-medical approach, and only asked about smoking and drinking health behaviours, neglecting to ask about the individual's relationship with PA. There are a number of interpretations as to why PA might not be promoted within referring environments, although one explanation might be because it is undervalued when compared to other health behaviours (smoking & drinking), and thus is neglected. Another

explanation can be provided by Gillison et al (2014) who by interviewing HPs found that although health promotion is valued amongst HPs, time restrictions inhibit it being delivered effectively. Conversely, another participant cited that PA was promoted within her referral, noting also that she had a good relationship with her referring practitioner, which offers an alternative explanation as to the promotion of PA. Further evidence supports this latter point, as HPs who express empathy towards the individual have been found to encourage uptake by listening to how participants are feeling (Horne et al, 2010). Interestingly, although not related to the promotion of PA, some participants in this study discussed how their HP listened to their concerns and worries, citing how they felt their HP showed empathy and understanding towards them, and in some cases how this encouraged them to think positively about attending the scheme. In contrast, a participant mentioned how their HP acted quite distant towards them, and was shown to act with minimal engagement, which resulted in a more controlled motivation in their decision to take up the scheme. These accounts suggest relatedness in HP consultations may enhance more autonomous forms of motivation, especially for individuals who express reservations in taking up the scheme. Harnessing relatedness during referral appointments might therefore build stronger patient/practitioner relationships, resulting in better patient outcomes and satisfaction (Dersken et al, 2013). Additionally, given evidence that individuals are more likely to adopt behaviours from people with whom they trust and feel connected to (Ryan et al, 2008), HP consultations are a key place to deliver PA promotion. The HP expressing enthusiasm for the scheme was also found to support uptake, which is not surprising considering that other studies (Campbell et al, 2015), have cited lack of referrer enthusiasm as a barrier, highlighting the importance of the HPs belief about engaging in PA and ERS.

Although promotion of the ARS was prominent within health and PA facilities, there was a general consensus amongst participants that the lack of advertising within the Wigan Borough impacted on the individual's knowledge and awareness of the scheme. This highlights the importance that service promotion should occur outside of health institutions and within the community (DoH, 2004), as if potential participants are not exposed to the service, they cannot be expected to uptake it.

It was cited how the health services and the ARS acted in isolation from one another, and how this limited participants' understanding of the service. A suggestion to help alleviate this problem was for

ERS staff to be available to discuss the service with patients. Work by Boyce et al (2008) and Vinson & Parker (2012), stated the importance of ERS staff in building and providing support networks in order to encourage PA, but also demonstrated the importance of a multi-disciplinary team in the referral process (HP to refer and ERS staff to provide information and knowledge).

5.3 Strengths and limitations

A major strength of this research is that it has provided evidence on factors affecting uptake using qualitative methodology, which demonstrated in previous chapters, has been scarce in previous research. More specifically, underpinning with both SDT and SEM has provided a more in-depth and conceptual understanding of the research data (Reeves et al, 2008). Another strength of this research lies in the mixed sample used. Although research was required to understand why individuals do not uptake ERS following a referral to their GP, interviewing individuals who had taken up the scheme provided an insight into their experiences and what influenced them to uptake. As Stuckey et al (2013) stated, focusing on factors to inform success allows for the generation of more meaningful inventions. Although this study contributes towards the knowledge exploring factors affecting uptake to an ERS, there are limitations that should be taken into consideration when interpreting the study findings.

This study is solely based upon retrospective data from individuals with varying health conditions that were referred to the ARS between the months of October and November 2015, with interviews being conducted during February and March 2016. This lapse in time may have affected the accuracy of the responses provided by the participants, especially the intricacies of the referral process. To minimise the possible effects of selective memory, telescoping, attribution and exaggeration (Labaree, 2009), future research studies could look to interview participants closer to their time of referral to maximise the accuracy of referral accounts. In the hope to create a relaxed social environment where participants felt that they could comfortably share their referral experiences, it must not be discounted that there is a possibility that this could have led participants to respond with social desirability. It is then possible that this may impact on the trustworthiness of accounts provided (Hutchinson & Wilson,

1992). Although the questions asked were not deemed as personal or embarrassing participants were made aware at the beginning of the interview of the purpose of interview and who the research was on behalf of, and thus may have wanted to present their experiences in a positive light (Collins et al, 2005) in fear of giving a negative impression about the ARS. However, building rapport with each participant allowed us as researchers to gather a detailed and in-depth account of the individuals' experiences, thus allowing us to understand firsthand (Sabiston et al, 2009), which may not have been achieved in other circumstances.

The recruitment of DNA participants was found to be significantly more challenging than recruiting uptakers. Although during participant recruitment 21'DNAs' had responded, it was during the interview process that researchers discovered 16 of these participants had actually gone on to uptake the ARS or partner scheme. However, because qualitative research is more concerned about the quality of data gathered and understanding individuals' lived experience (Strauss & Corbin, 1998), the quantity of interviews need not always be considered a limitation. Using SDT to understand an individual's behavioural processes to uptake the ARS has been described as a strength of this research project. However, by situating this research project in SDT, it only offers one interpretation of the findings (Brocki & Wearden, 2006), and other psychological theories could also be used to understand uptake behavior, which can perhaps be taken in to consideration when looking to develop further research studies.

5.4 Implications for practice

There are a number of practical recommendations that can be made for the ARS on the basis of the results found during this study. These will be detailed below.

Advertisement of the ARS

Increasing the breadth of locations and methods that information about the ARS is advertised may work as tool to increase individuals' awareness of the scheme. A number of participants mentioned

how the service could be broadcast via newspapers or on the radio to reach a wider breadth of individuals, especially as some participants cited how they may not be inclined to pick up a leaflet. A number of participants mentioned how although they were aware of the ARS, the way that the information about the scheme was communicated, did not accurately represent the scheme. A method to ensure that information about the scheme is both appealing and representative is to use language that accurately portrays the message that wants to be portrayed.

Family support

The role of the family was shown to influence individuals' behaviour towards uptake. Interventions should look at methods of involving family members to provide support and encouragement in order to support uptake to the ARS. This could be achieved by ARS staff and HPs holding community groups to educate individuals on the health benefits of PA, informing them about the ARS and how attending the scheme can prevent and aid in the recovery of a number of health conditions, Additionally, holding public events about the scheme where families are encouraged to attend may also help increase uptake to the ARS.

Harnessing motivation

The majority of participants reported personal motivation to be a factor influencing an individual's decision to take up the scheme. Support of the needs for autonomy, competence and relatedness from the HP appeared to encourage more autonomous forms of motivation. Therefore, to support future uptake, HPs should ensure that the needs for autonomy, competence and relatedness are fostered during the referral appointment. This could be achieved by:

Autonomy support

- Coming from the patient's viewpoint
- Creating an environment where the patient feels comfortable to share their feelings
- Encouraging personal decision making
- Provision of a meaningful rationale

Competence support

- Offering activities that are suitable for the patient's needs and something that the patient feels they are capable of achieving
- Belief in the patient that they are competent to achieve their goals
- Offering structure and opportunities for participants to measure their progress

Relatedness support

- Showing empathy towards patients
- Actively listening and engaging with the patient
- Taking an interest in the patient and their needs

ARS referral appointments

In terms of booking a ALS consultation, the inflexibility of referral appointments was cited as a reason for non-uptake. Increasing the flexibility of ARS and ensuring that appointments are delivered outside of traditional working hours may help increase uptake to the scheme, especially amongst the younger population.

Physical activity and ARS promotion

As stated throughout this thesis, health environments appear to be key to promote health messages (Boyce et al, 2008 & Kinnafick et al, 2014). Health promotion activities should therefore be utilised in these environments to encourage PA engagement. Involving a multi-disciplinary team, whereby the presence of an ERS staff member in referral locations to promote the service may help increase uptake to the scheme, as it provides opportunities for individuals to have immediate contact with an ERS officer and discuss the scheme, especially considering that some participants may not always pick up a leaflet. This may provide a more seamless and informative journey to the scheme. All services where the possibility of having to either inform participants or refer them to the service, should be engaged in regular training to ensure that they are well equipped with the knowledge about the service in order to be able to provide information to members of the public when appropriate. Currently IHL have one onsite ARS staff member working in a GP surgery. This could be an idea for future interventions to promote the ARS. However, also an idea for future research could be to

understand whether having an onsite exercise professional reduces the amount of individuals who do not uptake the scheme.

5.5 Future research

Family support

The role of family support has been found to play a role in influencing individuals to uptake to an ERS, not only in the present study, but in others too (Campbell et al, 2015 & Morgan et al, 2016). Future research could explore the role of the family to understand to what extent they influence decisions to attend an ERS and to develop and test strategies for involving families in ERS. This could be done to assess the effectiveness of using family support in increasing PA levels.

Recruitment of DNA participants

Although this was one of few studies that used DNA participants, in comparison to uptaker participants we recruited significantly less participants who had not taken up the scheme. Possible explanations for this could be because they had not engaged with the service, they were less inclined to participate in the research. Additionally, because the interviews were being held in leisure centres, they may have felt uncomfortable entering these environments (not surprising if they had not taken up). Future research could explore other methodologies to recruit and retain DNA participants so ensure that their views are represented.

Understanding the relationship between needs support, needs satisfaction and resultant uptake

In order to understand the extent to which needs support and subsequent satisfaction result in uptake, further research could be conducted. Future research could use quantitative methodology to help understand the relationship between these variables in order to draw more definitive conclusions regarding the effect of needs support and satisfaction on uptake to ERS.

5.6 Conclusion

There are numerous health benefits of participating in regular and sustained PA. Exercise referral schemes aim to increase the health and wellbeing of individuals who have, or are at risk of developing, chronic medical conditions. The success of ERS however, is based upon their uptake (Pavey et al, 2012). Factors such as social support, motivation, health improvements, referrer enthusiasm and provision of information have been found in previous research to affect uptake (Gillison et al, 2014, Campbell et al, 2015 & Morgan et al, 2016), but further qualitative research has been called for to provide a deeper understanding of factors affecting participant decisions to uptake ERS (James et al, 2008). More specifically, qualitative research exploring the processes of referral from the perspective of both 'DNAs' and 'uptakers' is scarce. Therefore, this research aimed to understand the factors that affected uptake to the ARS, from the perspectives of both 'uptakers' and 'DNAs', and to explore how SDT can help explain participant decisions to uptake the scheme. This was then framed within a broader SEM model to help explain the interrelationship between participant behaviours. The results from this study indicate that both theories (SDT and SEM) offer appropriate frameworks for understanding factors influencing uptake to the ARS. In terms of the SEM, it portrays how uptake is a multi-level behavioural process and therefore requires an understanding on all levels to tackle non-uptake, as motivation may not always be enough when faced with environmental barriers. Self-determination theory provided insight into individual goals and motives for pursuing the ARS, shedding light on their behavioural regulation and how this supported their action to take up the scheme. Additionally, it demonstrated how HPs displayed positive autonomy-supportive (eg. offering rationale and meaningful choices, taking the patients perspective), competence-supportive (eg. offering activities within patients' capabilities) and relatedness-supportive (eg. actively listening, showing care) behaviours. Whilst it is not known to what extent these interactions with HPs influenced uptake, participant reports suggested positive needs support from HPs facilitated personal decision making. Further quantitative research may want to be conducted understand the relationship between needs support, needs satisfaction and uptake to ERS.

Factors influencing individuals' decisions to uptake the ARS were evident across multiple levels of the SEM, showing how factors interrelate to cause an overall outcome. This was evident for both

individuals who had taken up and disengaged from the service. Individuals who had taken up the scheme cited how factors such as motivation (individual level) and family support (interpersonal level) had influenced their decision to uptake. Disengagement with the service was believed to sometimes result from lack of needs support (interpersonal level), and at other times from organizational barriers such as work commitments and availability of referral appointments. An idea to increase uptake could perhaps focus on helping HPs foster autonomy, competence and relatedness in their daily practice as this may help to encourage more personal forms of decision making in their patients. Additionally, family support is another idea that could be utilised to help inform them of the benefits of participating in ERS. This could be achieved through support groups and mentoring classes in the community run by exercise professionals. Physical activity and ARS promotion should be delivered within and across services, in order to promote unity, oppose to services operating in their separate entities. A possible method to achieve this is by ERS staff promoting the service in the community as well as in referring facilities in order to provide information about the scheme, in the absence of HPs being able to do so. Although the delivery of PA/ARS promotion by HPs should also be considered. Exercise Referral Scheme staff should consider being regularly present within referring facilities to provide information about the scheme, in the absence that HPs are able to do so. Exercise Referral Scheme staff should acknowledge challenges that stand in people's way to take up the scheme (ie.work commitments), and devise methods to overcome these eg. acknowledge peoples' working schedules.

This study also suggested that individuals who do not uptake ERS are not necessarily physically inactive, and indicates that ERS may be more suited towards individuals who have a or are at risk of developing a medical condition and are physically inactive, rather than those who have a condition but are engaging in PA, in line with NICE guidelines (2014).

Reference list

Bartholomew, K. J., Ntoumanis, N., Ryan, R., Bosh, J. A., & Thogersen-Ntoumani, C., (2011a), *Self-Determination Theory and Diminished Functioning. The Role of Interpsonal Control and Psychological Need Thwarting*, Society for Personality and Social Psychology, 37, (11): 1459-1473

Bartholomew, K. J., Ntoumanis, N., Ryan, R. M., & Thorgersen-Ntoumani, C., (2011b), *Psychological need thwarting in the sport context: assessing the darker side of athletic experience*, Journal of Sports and Exercise Psychology, 33, (1): 75 - 102

Bedford, T., Wilson, S., & Rithcie, O., (2015), *Identifying and recruiting participants for health research: A public diaglogue for the Health Research Authority*, London: OPM Group

BNF National Centre., (2010), *UK physical activity guidelines: Review and Recommendations*, BNF National Centre Physical activity and health, (Accessed on the 8th of June, 2016)

Boyatiz, R. E., (1998), *Transforming Qualitative Information*, Sage: Cleveland

Boyce, T., Robertson, R., & Dixon, A., (2008), *Commissioning and behaviour change: Kicking Bad Habits final report*, London: The Kings Fund

Braun V., & Clarke, V., (2006), *Using thematic analysis in psychology*, Qualitative research in psychology, 3: 77-101

Braun, V., & Clarke, V., (2014), *What can "thematic analysis" offer health and wellbeing researchers?*, International Journal of Qualitative Studies of Health and Wellbeing, 9: 26152 - http://dx.doi.org/10.3402/qhw.v9.26152

British Heart Foundation National Centre., (2010), *A Toolkit for the Design, Implementation and Evaluation of Exercise Referral Schemes, Section 3: Exercise Referral Research, Loughborough*: Loughborough University

British Heart Foundation., (2015), *Physical Activity Statistics 2015*, Nuffield Department of Population Health: University of Oxford

Brocki, J. M., & Wearden, A. J., (2006), *A critical evaluation of the use of interpretative phenomenological analysis (IPA) in health psychology*, Psychology & Health, 21, (1): DOI:10.1080/14768320500230185

Buck, D., & Gregory, S., (2013), *Improving the public's health: A resource for local authorities*, London: The Kings Fund

Campbell, F., Holmes, M., Everson-Hock, E., Davis, S., Buckley-Woods, H., Anokye, N., Tappenden, P., & Kaltenthaler, E., (2015), *A systematic review and economic evaluation of exercise referral*

schemes in primary care: a short report, Health Technology Assessment, 12, (60): 1-110

Centers for Disease and Control Prevention., (2015), *The Socio-Ecological Model: A Framework for Prevention,* Centers for Disease Control Prevention, http://cdc.gov/violenceprevention/overview/social-ecologicalmodel.html (Accessed on the 25th of June, 2016)

Davidson, C. R., (2009), *Transcription: Imperatives for Qualitative Research,* International Journal of Qualitative Methods, 8, (2): 36-52

Deci, E. L., & Ryan, R. M., (1985), *Intrinsic motivation and self-determination theory in human behaviour,* New York: Plenum

Deci, E. L., Eghrari, H., Patrick, B. C., & Leone, D. R., (1994), *Facilitating internalisation: the self determination theory perspective,* Journal of Personality, 62, (1): 119-42

Deci, E. L., & Ryan, R. M., (2000a), *The "What" and "Why" of Goal Pursuits, Human Needs and Self-Determination of Behaviour,* Psychological Inquiry, 11, (4): 227-268

Deci, E. L., & Ryan, R. M., (2000b), *Intrinsic and Extrinsic Motivations: Classical Definitions and New Directions,* Contemporary Educational Psychology, (25): 54 – 67

Deci, E. L., & Ryan, R. M., (2002), *Handbook of Self-Determination Research,* Rochester, NY: University of Rochester Press

Deci, E. L., & Ryan, R. M., (2008), *Self-determination a theory: a macro theory of human motivation, development and health,* Canadian Psychology, (49): 182-185

Denzin, N. K., (2006), *Sociological Methods: A sourcebook,* Aldine Transaction: New Brunswick, New Jersey

Department of Health., (2004), *Choosing Health: Making healthy choices easier,* London: The Stationary Office

Department of Health., (2011), *Start Active, Stay Active: A report on physical activity from the four home countries' Chief Medical Officers,* London: Department of Health

Derksen, F., Bensing, J., Largo-Janssen, A., (2013), *Effectiveness of empathy in general practice: A systematic review,* The British Journal of General Practice, 63, (606): 76-84

Din, N. U., Moore, G. F., Murphy, S., Wilkinson, C., & Williams, N. H., (2014), *Health professionals' perspectives on exercise referral and physical activity promotion in primary care: Findings from a process evaluation of the National Exercise Referral Scheme in Wales,* Health Education Journal, doi: 10.1177/0017896914559785

Dugdill, L., Graham, R. C,. & McNair, F., (2005), *Exercise referral: the public health panaceas for*

physical activity promotion? A critical perspective of exercise referral schemes; their development and evaluation, Ergonomics, 48, (11-14): 1390-1410

Edmunds, J., Ntoumaris, N., & Duda, J. L., (2007), *Adherence and wellbeing in overweight and obese patients referred to an exercise on prescription scheme: A self-determination theory perspective*, Psychology of Sport and Exercise, 8, (5): 722-740

Fortier M. S., Sweet, S. N., O'Sullivan, T. L., & Williams, G. C., (2007), *A self-determination process model of physical activity adoption in the context of a randomized control trail*, Psychology of Sport and Exercise, (8): 741-757

Fortier, M. S., Duda, J. L., Guerin, E., & Teixeira, P. J., (2012), *Promoting physical activity: development and testing of self-determination theory-based intervention*, International Journal of Behavioural Nutrition and Physical Activity, 9, (20): DOI: 10.1186/1479-5868-9-20

Fox, K., Biddle, S., Edmunds, L., Bowler, I., & Killoran, I., (1997), *Physical activity promotion through primary care in England*, British Journal of General Practice, 47, 367-369

Fredrick, C. M., & Ryan, R. M., (1995*), Self-determination in sport: A review using cognitive evaluation theory*, International Journal of Sport Psychology, (26): 5-23

Gidlow, C., Johnston, L. H., Crone, D., & James, D., (2005), *Attendance of exercise referral schemes in the UK: A systematic review*, Health Education Journal, 64, (2): 168-186

Gillison, F., Osborn, M., Standage, M., & Skevington., (2009), *Exploring the experience of introjected regulation for exercise across gender in in adolescence*, Psychology of Sport and Exercise, (10): 309-319

Gillison, F., Beck, F., & Koseva, M., (2014), *An evaluation of passport to health*, University of Bath: Bath, http://www.bathnes.gov.uk/sites/default/files/p2h_evaluation_full_report.pdf (Accessed on the 5th of June, 2016)

Gunnell, K. E., Crocker, P. R. E., Wilson, P. M., Mack, D. E., & Zumbo, B. D., (2013), *Psychological need satisfaction and thwarting: A test of Basic Psychological Needs Theory in physical activity contexts*, Psychology of Sport and Exercise, (14): 599-607

Hagger, M. S., & Chatzisarantis, N. L D., (2009), *Integrating the theory of planned behaviour and self-determination theory in health behaviour: A meta-analysis*, British Journal of Health Psychology, (14): 275-302

Hanson, C. L., Allin, L. J., Ellis, J. G., & Dodd – Reynolds, C. J., (2013), *An evaluation of the efficacy of the exercise on referral scheme in Northumberland, UK: association with physical activity and predictors of engagement. A naturalistic observation study*, BMJ Open, (3): doi:10.1136/bmjopen-

2013-002849

Harrison, R. A., McNair, F., & Dugdill, L., (2005), *Access to exercise referral schemes: a population based analysis*, Journal of Public Health,. 27, (4): 326-330

Holloway, I., (1997), *Basic concepts for qualitative research*, Oxford: Blackwell Science

Horne, M., Skelton, D., Speed, S., & Todd, C., (2010), *The influence of primary care professionals in encouraging exercise and physical activity among White and South Asain older adults: experiences of young older adults*, Patient Education and Counseling, 78, (1): 97-103

Hutchinson, S., & Wilson, S. K. (1992), *Validity threats in scheduled semistructured research interviews*, Nursing Research, 41, 117-119

Ingledew, D. K., & Markland, D., (2008), *The role of motives in exercise participation*, Psychology and Health, (23): 807-828

Isaacs, A., Critchley, J., Tai, S., Buckingham, K., Westley, D., Harridge, S., Smith, C., & Gottlieb, J. M., (2007), *Exercise Evaluation Randomised Trail (EXERT): a randomised trail comparing GP referral for leisure centre-based exercise, community-based walking and advice only*, Health Technology Assessment, 11, (10): http://www.journalslibrary.nihr.ac.uk/__data/assets/pdf_file/0007/64654/FullReport-hta11100.pdf (Accessed on the 12th of June, 2016)

Inspiring Healthy Lifestyle, (2016), *Inspiring Healthy Lifestyles, Referral Scheme*, Inspiring Healthy Lifestyles, http://www.getactivewiganandleigh.co.uk/active-living-programmes/referral-scheme/ (Accessed on the 28th of June, 2016)

James, D. V. B., Johnston, L. H., Crone, D., Sidford, A. H., Gidlow, C., Morris, C., & Foster, C., (2008)., *Factors associated with physical activity referral uptake and participation*, Journal of Sports Science, 26, (2): 217-224

Johansson, M., Harting, T., & Staats, H., (2011), *Psychological benefits of walking: Moderation by company and outdoor environment*, Applied Psychology Health and Wellbeing, (3): 261-280

Kelly, S., Martin, S., Kuhn, I., Cowan, A., Brayne, C., & Lafortune, L., (2016), *Barriers and Facilitators to the Uptake and Maintenance of Healthy Behaviours by People at Mid-Life: A Rapid Systematic Review*, Plos One, http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0145074 (Accessed on the 10th of June, 2016)

Khan, E B., Ramsey, L. T., Brownson, R. C., Heath, G. W., Howze, E. H., Powell K. E., Stone, E. J., Rajab, M. W., & Corso, P., (2002), *The effectiveness of interventions to increase physical activity. A systematic review,* American Journal of Preventative Medicine, 22, (4): 73-107

Khanam, S., & Costarelli, V., (2008), *Attitudes towards health and exercise of overweight women,* Perspectives in Public Health , 128, (1): 26-30

Kinnafink, FE., Thorgersen-Ntoumani, C., & Duda, J. L., (2014), *Physical Activity Adoption to Adherence, Lapse, and Dropout: A Self-Determination Theory Perspective,* Qualitative Health Research, 24, (5): 706-718

Klein,, I. P., De Matos, D. G., Leitao, J. C., Cid, L., & Moutao, J., (2015), *Self-Determination and Physical Exercise Adherence in the Contexts of Fitness Academies and Personal Training,* Journal of Human Kinetics, (46): 241-249

Labaree, R. V., (2009), *Organizing Your Social Sciences Research Paper: Limitations of the Study,* USC Libraries, http://libguides.usc.edu/writingguide/limitations (Accessed on the 29th of June, 2016)

Lapadat, J. C., (2000), *Problematising transcription: purpose, paradigm and quality,* Social Research Methodology, 3, (3): 2013-2019

Lee, I.-M., & Buchner, D. M. (2008). *The importance of walking to public health,* Medicine and Science in Sports and Exercise, 40: S512–S518. doi:10.1249/ MSS.0b013e31817c65d0

Lee, I., Shiroma, E. J., Lobelo, F., Puska, P., Blair, S. N., & Katzmarzyk, P. T., (2012), *Effect of physical activity on major non-communicable diseases worldwide: An analysis of burden of disease and life expectancy,* Lancet, (380): 219-229

Markland, D., & Ingledrew, D. K., (2007*), The relationships between body mass and body image and relative autonomy for exercise among adolescent males and females,* Psychology of Sport and Exercise, (8): 836-853

Markland, D., & Tobin, V. J., (2010), *Need support and behavioural regulations for exercise amongst exercise referral scheme clients: The mediating role of psychological need satisfaction,* Psychology of Sport and Exercise, (11): 91-99

McDonough, M. H., & Crocker, P. R. E., (2007), *Testing Self-Determined Motivation as a Mediator of the Relationship Between Psychological Needs and Affective and Behavioural Outcomes,* Journal of Sport and Exercise Psychology, (29): 645-663

McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K., (1988), *An ecological perspective on health promotion programs,* Health Education Quarterly, 15, (4):351-377

Mehtala, M. A. K., Saakslahti, A. J., Inkiness, M. E., & Poskiparta, M. E. H., (2014), *A socio-ecological approach to physical activity interventions in childcare: a systematic review,* International Journal of Behavioural Nutrition and Physical Activity, 11, (22): doi: 10.1186/1479-5868-11-22

Moore, G. F., Raisanen, L., Moore, L., Din. N. U., & Murphy, S., (2013), *Mixed-methods process evaluation of the Welsh National Exercise Referral Scheme,* Health Education, 133, (6): 476-501

Morgan, O., (2015), *Approaches to increase physical activity: reviewing the evidence for exercise-referral schemes,* Journal of the Royal Institute of Public Health, (119): 361-370

Morgan, F., Battersby, A., Weightman, A. L., Searchfield, L., Turley, R., Morgan, H., Jagroo, J,. & Ellis, S., (2016), *Adherence to exercise referral schemes by participants – what do providers and commissioners need to know? A systematic review of barriers and facilitators,* BMC Public Health, (16): 227 DOI 10.1186/s12889-016-2882-7

Morton, K. L., Biddle, S. J. H., & Beauchamp, M. R. (2008), *Changes in self-determination during an exercise referral scheme,* Public Health, (122): 1257-1260

Mullan, E., & Markland, D., (1997), *Variations in self-determination across the stages of change for exercise in adults,* Motivation and Emotion, (21): 349-362

Murphy, S., Raisanen, L., Moore, G., Tudor Edwards, R,. Linck, P., Hounsome, N., Williams, N., Din, N. U., & Moore, L., (2010), *The evaluation of the National Exercise Scheme in Wales,* Cardiff: Welsh Government

National Institute for Health and Clinical Excellence (NICE)., (2006), *A Rapid Review of the Effectiveness of ERS to Promote Physical Activity in Adults,* London: National Institute of Health and Clinical Excellence

National Institute for Health and Clinical Excellence (NICE)., (2014), *Exercise referral schemes to promote physical activity: NICE public health guidance,* London: National Institute for Health and Care Excellence

Ng, J. Y. Y., Ntoumanis. N., Thogerson-Ntoumani, C., Deci, E. L., Ryan, R. M., Duda, J. L., & Willaism, G. C., (2012), *Self-Determination Theory applied to health contexts: A meta-analysis,* Perspectives on Psychological Science, (7): 325-340

National Health Service., (2015), *Physical activity guidelines for adults,* NHS, http://www.nhs.uk/Livewell/fitness/Pages/physical-activity-guidelines-for-adults.aspx (Accessed on the 8th of June, 2016)

Ochs, E., (1979), *Transcription as theory,* In: Ochs, E., & Schiefflin, B. B.., (Eds), (1979), Developmental pragmatics, New York: Academic

Ollerenshaw, J. A., & Creswell, J. W., (2002), *Narrative Research: A Comparison of Two Restorying Data Analysis Approaches,* Qualitative Inquiry, 8, (3): 329-347

Patrick, H., (2014), *Ascending mount Maslow with oxygen to spare: a self-determination theory perspective,* Psychological Inquiry, (25): 101-107

Pavey, T. G., Anokye, N., Tayor, A. H., Trueman, P., Moxham, T., Fox, K. R., Hillsdon, M., Green, C., Campbell, J. L., Foster. C., Mutrie, N., Searle, J., & Taylor, R. S., (2011), *The clinical effectiveness and cost-effectiveness of exercise referral schemes: a systematic review and economic evaluation,* Health Technology Assessment, 15, (44)

Pavey, T,. Taylor, A. Hillsdon, M., Fox, Campbell, J., Foster, C., Moxham, T., Mutrie, N., Searie, J., & Taylor, R., (2012), *Levels and predictors of exercise referral scheme uptake and adherence: a systematic review,* Journal of Epidemiology & Community Health, 66, (8): 737-744

Peat, J., Mellis, C., Williams, K., & Xuan, W., (2002), *Health Science Research: A Handbook of quantitative methods,* London: Sage

Pelletier, L. G., Fortier, M. S., Vallerand, R. J., & Bri, N. M., (2002), *Associations among perceived autonomy support, forms of regulation, and persistance : A prospective study,* Motivation and Emotion, 25, (4) : 279-306

Pentecost, C., & Taket, A., (2011), *Understanding exercise uptake and adherence for people with chronic conditions: a new model demonstrating the importance of exercise identity, benefits of attending and support,* Medicine & Health, 26, (5): 908-922

Public Health England., (2013), *Health Impact of Physical Inactivity*, Public Health England, http://www.apho.org.uk/resource/view.aspx?RID=123459 (Accessed on the 8th of June, 2016)

Public Health England (2015), *Wigan Unitary Authority, Health Profile 2015,* Public Health England, www.apho.org.uk/resource/view.aspx?RID=171637 (Accessed on the 25th of June, 2016)

Rahman, R. J., Thogersen-Ntoumani, C., Thatcher, J., & Doust, J., (2011), *Changes in need satisfaction and motivation orientation as predictors of psychological and behavioural outcomes in exercise referral,* Psychology of Health, (26): 1521-1539

Reeves, S., Albert, M., Kuper, A., & Hodges, D. B., (2008), *Why use theories in qualitative research?,* BMJ, 337, doi: http://dx.doi.org/10.1136/bmj.a949

Rodgers, W. M., Hall, C. R., Duncan, L. R., Pearson, E., & Milne, M. I., (2010), *Becoming a regular exerciser: Examining change in behavioural regulations among exercise initiates,* Psychology of Sport and Exercise, 11, (5): 378-386

Rosland, A. M., Heisler, M., & Piette, J. D., (2012), *The impact of family behaviors and communication patterns on chronic illness outcomes: a systematic review,* Journal of Behavioural Medicine, 35, (2): 221-239

Rosenbaum, S., Tiedeman, A., Sherrington, C., Curtis, J., & Ward, P. B., (2014), *Physical Activity Interventions for People With Mental Illness: A Systematic Review and Meta-Analysis,* The Journal of Clinical Psychiatry, 75, (9): 964-974

Ryan, R. M., Frederick, C. M., Lepes, D., Rubio, N., & Sheldon, K. M., (1997), *Intrinsic Motivation and Exercise Adherence,* International Journal of Sport Psychology, (28): 335-354

Ryan, R. M., & Deci, E. L., (2000), *Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being,* American Psychologist, 55, (1): 68-78

Ryan, R. M., & Deci, E. L., (2002), *Overview of Self-Determination Theory: An Organismic Dialectical Perspective,* In: Deci, E. L., & Ryan, R. M., (Eds), (2002), Handbook of Self-Determination Research, Rochester, New York: Rochester University Press

Ryan, R. M., Patrick, H., Deci, E. L., & Willaims, G. C., (2008), *Facilitating health behaviour change and its maintenance: Interventions based on Self-Determination Theory,* The European Health Psychologist, (10), http://selfdeterminationtheory.org/SDT/documents/2008_RyanPatrickDeciWilliams_EHP.pdf (Accessed on the 9th of June, 2016)

Ryan, R, M., Williams, G. C., Patrick, H., & Deci, E. L., (2009), *Self-determination theory and physical activity: The dynamics of motivation in development and wellness,* Hellenic Journal of Psychology, (6): 107-124

Sabiston, C. M., McDonough, M. H., Sedgwick, W. A., & Crocker, P. R. E. (2009), *Muscle gains and emotional strains: Conflicting experiences of change among over- weight women participating in an exercise intervention program,* Qualitative Health Research, 19, 466–480. doi:10.1177/1049732309332782

Scully, D., Kremer, J., Meade, M. M., Grahman, R., & Dudgeon, K., (1998), *Physical exercise and psychological well being: a critical review,* British Journal of Sports Medicine, 32: 111-120

Sebire, S., Standage, M., & Vansteenksite, M., (2009*), Examining goal content in the exercise domain: Intrinsic versus extrinsic goals and cognitive, affective and behavioural outcomes, and psychological satisfaction,* Journal of Sport and Exercise Psychology, (31): 189-210

Shaw., R. L., (2010), *Embedding reflexivity within experiential qualitative psychology,* Qualitaitve research in psychology, 7, (3): 233-243

Shaw, R., Gillies, M., Barber, J., MacIntyre, K., Harkins, C., Findlay, I. N,. McCloy, K., & Scoular, A., MacIntyre, P. D, (2012), *Pre-exercise screening and health coaching in CHD secondary prevention: A qualitative study of the patient experience,* Health Education Research, 27, (3): 424-436

Shenton, A. K., (2004), *Strategies for ensuring trustworthiness in qualitative research projects,* Education for information, (22): 63-75

Silva, M. N., Markland, D., Vieira, P. N., Coutinho, S. R., Carraca, E. V., Palmeira, A. L., Minderico, C. S., Matos, M. G., Sardinha, L. B., & Teixeira, P. J,. (2010), Helping overweight women become more active: Need support and motivational regulations for different forms of physical activity, Psychology of Sport and Exercise, (110): 591-601

Sorensen, J. B., Kragstrup, J., Skovgaard, T., & Puggaard, L., (2008), *Exercise on prescription: A randomized study on the effect of counselling vs counselling and supervised exercise,* Scandinavian Journal of Medicine and Science in Sports, 18, (3): 288-297

Sowden, S. L., Breeze, E., Barber, J., & Raine, R., (2008), *Do general practices provide equitable access to physical activity interventions?,* British Journal of General Practices, 58, (555): doi: 10.3399/bjgp08X342237

Standage, M., Sebire, S.J., & Loney, T., (2008*), Does exercise motivation predict engagement in objectively assessed boutts of moderate-intensity exercise? A self-determination theory perspective,* Journal of Sport and Exercise Psychology, (30): 337-352

Stevens, W., Hillsdon, M., Thorogood, M., & McArdle, D., (1998), *Cost effectiveness of a primary care based physical activity intervention in 45-47 year old men and women: a randomised controlled trail,* British Journal of Sports Medicine, 32, (3):236-241

Strauss, A., & Corbin, J., (1998), *Basics of Qualitative Research: Second Edition: Techniques and Procedures for Developing Grounded Theory,* Thousand Oaks, CA, US: Sage Publications

Stuckey, H. L., Boan, J., Kraschnewski, J. L., Miller-Day, M., Lehman, B. E., & Sciamanns, C. N., (2013), *Using Positive Deviance for Determining Successful Weight-Control Practices,* Qualitative Health Research, 21, (4): 563-579

Taylor, A. H., Doust, J., & Webbon, J., (1998), *Randomised control trail to examine the effects of a GP exercise referral programme in Hailsham, East Sussex, on modifiable coronary heart disease risk factors,* Journal of Epidemiology and Community Health, 52, (9): 595-601

Teixeira, P. J., Carraca, E., V., Markland, D., Silva, M., N, & Ryan, R., M. (2012), *Exercise, physical activity, and self-determination theory: A systematic revie*w, International Journal of Behavioural Nutrition and Physical Activity, (9): 78

Thogerson-Ntoumani, C., & Ntoumanis, N., (2006), *The role of self-determined motivation in the understanding of exercise-related behaviours, cognitions and physical evaluations,* Journal of Sports Science, (24): 393-404

Tobi, P., Estacio, E. V., Seesaghur, A., Nabingi, S., & Crawley, J., (2009), *Evaluation of Healthwise Exercise Referral Scheme,* London: Institute for Health and Human Development University of East London

Tocque, K., Hotchkiss, J, Caunce, J., (2011), Wigan JSNA 2011 – *Population Profile,* https://www.wigan.gov.uk/Docs/PDF/Council/Strategies-Plans-and-Policies/HealthAndSocialCare/JSNA/JSNA-PopulationProfile.pdf (Accessed on the 28th of June, 2016)

Torst, S. G., Owen, N., Bauman, A. E., Sallis, J. F., & Brown, W., (2002), *Correlates of adults' participation in physical activity: review and update,* Medicine of Sports Science and Exercise, 34, (12): 1996-2001

Trochim, W. M. K., (2006), *Research Methods Knowledge Base: Deduction & Induction,* http://www.socialresearchmethods.net/kb/dedind.php (Accessed 23rd of June, 2016)

Vallerand, R. J., (2007), *Intrinsic and Extrinsic Motivation in Sport and Physical Activity,* In: Tenembaum, G., & Eklund, R., C. (Eds), (2007), *Handbook of Sport Psychology, (3rd Edition),* New Jersey: John Wiley & Sons

Vansteenkiste M., Sierens. E., Soenens, B., Luyckx, K., & Lens, W., (2009), *Motivational profiles from a self-determination theory perspective: the quality of motivation matters,* Journal of Educational Psychology, (101): 671-688

Vansteenkiste M., Niemiec, C. P., & Soenen, B., (2010), *The development of five mini-theories of self-determination theory: An historical overview, emerging trends, and future directions,* In: Urdan, T. C., & Karabenick, S. A., (Eds), (2010), *The decade ahead: Theoretical Perspectives on Motivation and Achievements,* (Advances in Motivation and Achievement, Volume 16 Part A) Emerald Group Publishing Limited, pp.105 – 165

Van Teijlingen, E. R., & Hundley, V., (2001), *The importance of pilot studies,* University of Surrey: Guildford

Victorian Curriculum and Assessment Authority., (2010), *Social-Ecological Model,* http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=6&ved=0ahUKEwjBpJSIi9LNAhWlJ8AKHbtqAdsQFggyMAU&url=http%3A%2F%2Fwww.vcaa.vic.edu.au%2Fdocuments%2Fvce%2Fphysicaledu%2Fsocialecologicalmodelandphysicalactivity.doc&usg=AFQjCNFHRUbv3D4nCvdxIOiolxRe8k5UrQ (Accessed on the 23rd of June, 2016)

Vinson, D., & Parker, A., (2012), *Exercise, service and support client experiences of physical activity referral schemes (PARS),* Qualitative Research in Sport, Exercise and Health, 4, (1): 15-31

Weman-Josefsson, K., Lindwall, M., & Ivarsson, A., (2015*), Needs satisfaction, motivational regulations and exercise: moderation and mediation effects,* International Journal of Behavioural Nutrition and Physical Activty, 12, (67): DOI 10.1186/s12966-015-0226-0

Williams, N. H., Hendry, M., France, B., Lewis, R., & Wulkinson, C., (2007), *Effectiveness of Exercise referral schemes to promote physical activity in adults: Systematic Review,* British Journal of General Practice, (57): 979-986

Wilson, P., Mack, D., & Grattan, K., (2008), *Understanding motivation for exercise: a self-determination theory perspective*, Canadian Psychology, 49, (3): 250-256

World Health Organization., (2010), *Global Recommendations on Physical Activity for Health,* World Health Organization, : http://whqlibdoc.who.int/ publications/2010/9789241599979_eng.pdf (Accessed on the 8th of June, 2016)

World Health Organisation., (2015), *The Ecological Framework,* World Health Organisation, http://www.who.int/violenceprevention/approach/ecology/en/ (Accessed on the 25th of June, 2016)

World Health Organisation., (2016), *Physical activity,* World Health Organisation, http://www.who.int/mediacentre/factsheets/fs385/en/ (Accessed the 30th of June, 2016)

Yu, C., Rouse, P. C., Van Zanten, J. V. JCS., Metsios, G. S., Ntoumanis, N., Kitas, G. D., & Duda, J. L., (2015), *Motivation-related predictors of physical activity engagement and vitality in rheumatoid arthritis patients,* Health Psychology Open, 2, (2): doi: 10.1177/2055102915600359

Appendices

Appendix 1. Transcription guidelines

Transcription guidelines

- Label each file name with participant code, date of interview, and status of participant (uptaker/DNA)
    - Eg. 01, 9 Feb, DNA
- In the header of the word document please write participant code, who interviewed the participant (if known), who did the transcription, the number of people present and the length of the transcription
    - Eg. P1, **Interviewer: SB, Transcriber: SB, Num. people present: 2, Call length: 27.31**
- Initial researchers 'R1' and participants 'P1'. If more than this number of researchers/participants continue numbering system eg. R2, R3, R4…
- Ensure transcripts read from left to right (researcher/participant initials on the far left hand side)
- Tab (enter key) to start each section of new text. Use the 'normal' style on word, this should provide a good spacing between each line
- Use no punctuation throughout and ensure all words are written down how they are said (even if not grammatically correct)
- If a word/section of text is inaudible, open bracket and type inaudible in capitals and record the time from when it was inaudible.
    - Eg. (INAUDIBLE 20.03-20.07)
- … indicates someone being interrupted. Put these at the point of interruption (to indicate the point where the individual was interrupted) and at the beginning of text where the individual who interrupted started speaking (indicates interruption)
    - Eg. R1: So can you tell me…

    - P1: …well the other day I went

- If names are mentioned throughout the interview please use square brackets to who highlight who this person is. If you aren't sure please place a ? inside the brackets instead

    - Eg [physiotherapist] referred me to the active living referral scheme following physio for my bad knee

    - [?]

- When an obvious laugh is heard in the transcript please record this as (LAUGHS)

        - Eg …and then i fell over and really hurt my knee (LAUGHS)