

**STAKEHOLDER PERSPECTIVES OF AN
EXERCISE REFERRAL SCHEME**

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Abstract

Exercise referral programmes (ERP) are a popular approach to promoting physical activity in the UK (DoH, 2001). However, there is a lack of critical awareness of process-based issues and this is limiting their potential effectiveness as a public health intervention. The overall aim of this study was to understand and critically deconstruct, using key stakeholder perspectives, the processes involved in the pragmatic implementation of an ERP situated in a large borough in the North-West of England.

A holistic and naturalistic (Patton, 2002) research design that embraced and recognised the intervention complexity was utilised in order to understand the ERP in its entirety. Combinations of physiological monitoring, survey questionnaires, semi-structured and in-depth tracking interviews were utilised to elicit health professional (questionnaire survey, n=71; semi-structured interviews, n=13), exercise professional (semi-structured interviews, n=7) and participant (retrospective cross sectional survey, n=985; semi-structured interviews, n=12) perspectives of the programme.

Results provide a critical perspective of the use of the primary health setting to promote physical activity. Health professional advice was a key factor to influence participant adoption of exercise. However, health professionals placed limited prioritisation on physical activity and often adopted unsystematic referring practices. Communication between health and exercise professionals was problematic and limited. Despite the importance of health professional advice, they occupied a small role in the design and delivery of the ERP. Exercise professionals experienced practical difficulties when attempting to communicate with health professionals and expressed concern by the lack of credibility and support they offered.

The overall adherence rate to the intervention was 34%. Participants were both a complex and heterogeneous group in terms of reasons for adopting the programme, factors associated with adherence (in the short and long term) and health benefits experienced. Participants experienced broad ranges of health benefits, including those that were physical, social, functional, and psychological in nature. Whilst exercise professionals recognised the importance of broader factors to participant's physical activity levels such factors were not monitored and were rarely considered in terms of participant care. Some population sub-groups benefited more than others did. Male participants, aged 71+ who had previously completed a programme of cardiac rehabilitation and were retired exhibited the highest percentage adherence for each category.

This study has revealed some of the basic complexities and intricacies of influencing physical activity behaviour change in individuals and of inter-professional partnership working. The study was unique in both method and focus and, as such, has advanced knowledge and understanding of ERP's in a number of ways. Qualitative methodology has permitted an understanding of process-based issues. Consequently, recommendations for future design, implementation, and evaluation are outlined. Recommendations are provided in respect of partnership working, targeting procedures, participant support and monitoring and evaluation. The findings are of significant relevance to health and exercise professionals and organisations concerned with health development and policy target delivery.

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CHAPTER 1

INTRODUCTION TO THE STUDY

1.1 EXCEL to HEALTH – exercise referral programme

“EXCEL to Health” (EXCEL) is an operational exercise referral programme (ERP) located in Sefton, Merseyside. Originally established in 1994, EXCEL stands for **Enjoy Exercise Create Enhanced Lifestyles** and is an umbrella term used to describe a range of physical activity and health awareness initiatives aimed, generally at the sedentary population and specifically at target groups such as individuals suffering from Coronary Heart Disease risk factors. EXCEL was originally established as part of a healthy alliance partnership between Sefton Metropolitan Borough Council and Sefton Health Authority (now, Sefton Primary Care Trust). The purpose of the ERP was to aid, within Sefton, the implementation of the National Service Framework for coronary heart disease (Department of Health [DoH], 2000a). In this sense, the primary aim of the programme is to reduce the incidence of coronary heart disease in the population of Sefton. Adults aged 18-65 years diagnosed as suffering from at least two coronary heart disease risk factors are eligible to participate. Coronary heart disease is one of the leading causes of death in the United Kingdom (UK) (Health Development Agency, 2001). In Sefton, 21.2% of the population were suffering from coronary heart disease before 75 years, in 1999 (Sefton Health Authority, 2001).

1.1.1 The exercise referral process

EXCEL operates according to the most common model of exercise referral as described by the National Quality Assurance Framework for Exercise Referral Systems (DoH, 2001a). Health professionals across the borough can refer

patients, who meet eligibility criteria (see appendix 1), to qualified exercise professionals. A supervised and structured programme of exercise is provided, for a period of 14 weeks. Physiological parameters such as weight, body mass index, resting blood pressure and resting heart rate are recorded at an initial assessment and monitored mid-way through and upon completion of the programme. In addition, basic demographic information such as gender, date of birth, referral reason, and referring health professional are recorded for each participant. Upon completion, participants are encouraged to continue to engage in exercise and receive a postal questionnaire at 3, 6, and 12 months post programme completion.

The Leisure Services Department (Sport and Recreational Development section) of Sefton Borough Council are responsible for the management and operation of the EXCEL programme. Sefton Leisure services employs, on a full-time basis, seven exercise professionals (one programme manager; four exercise referral officers and two support officers) in order to implement the delivery of the exercise referral programme. The project is co-ordinated, on a partnership basis, with two Sefton Primary Care Trusts (Southport and Formby and South Sefton). The primary role of the EXCEL manager is to develop the project, secure future funding, raise the profile of the programme, manage staff, and maintain relationships with health care professionals. In order to execute this role the manager primarily communicates with exercise referral officers, senior management of Sefton Council and professionals from Sefton Primary Care Trust (the EXCEL ERP commissioners). There are fifty-three (of a possible 54 surgeries registered to refer participants to EXCEL. The health professional roles

are to identify and refer suitable participants and provide medical information, in the format of a referral form (see appendix 2) about a participant. There are approximately 1000 participants per year referred to the programme. Exercise referral officers receive referral forms direct from the health professionals, conduct exercise assessments for participants referred and devise a suitable programme of exercise for the participant (see appendix 3 for example exercise programme). In this sense, the exercise referral officers must communicate with the programme manager, health professionals, participants and the exercise instructors who deliver and supervise the recommended exercise programme. The primary role of the support officers is to provide administrative assistance to the exercise referral officers. A proportion of this role involves the arrangement of participant appointments with the exercise referral officer and communication with health professionals about a participant. Therefore, the support officers are required to communicate with participants, health professionals and exercise referral officers.

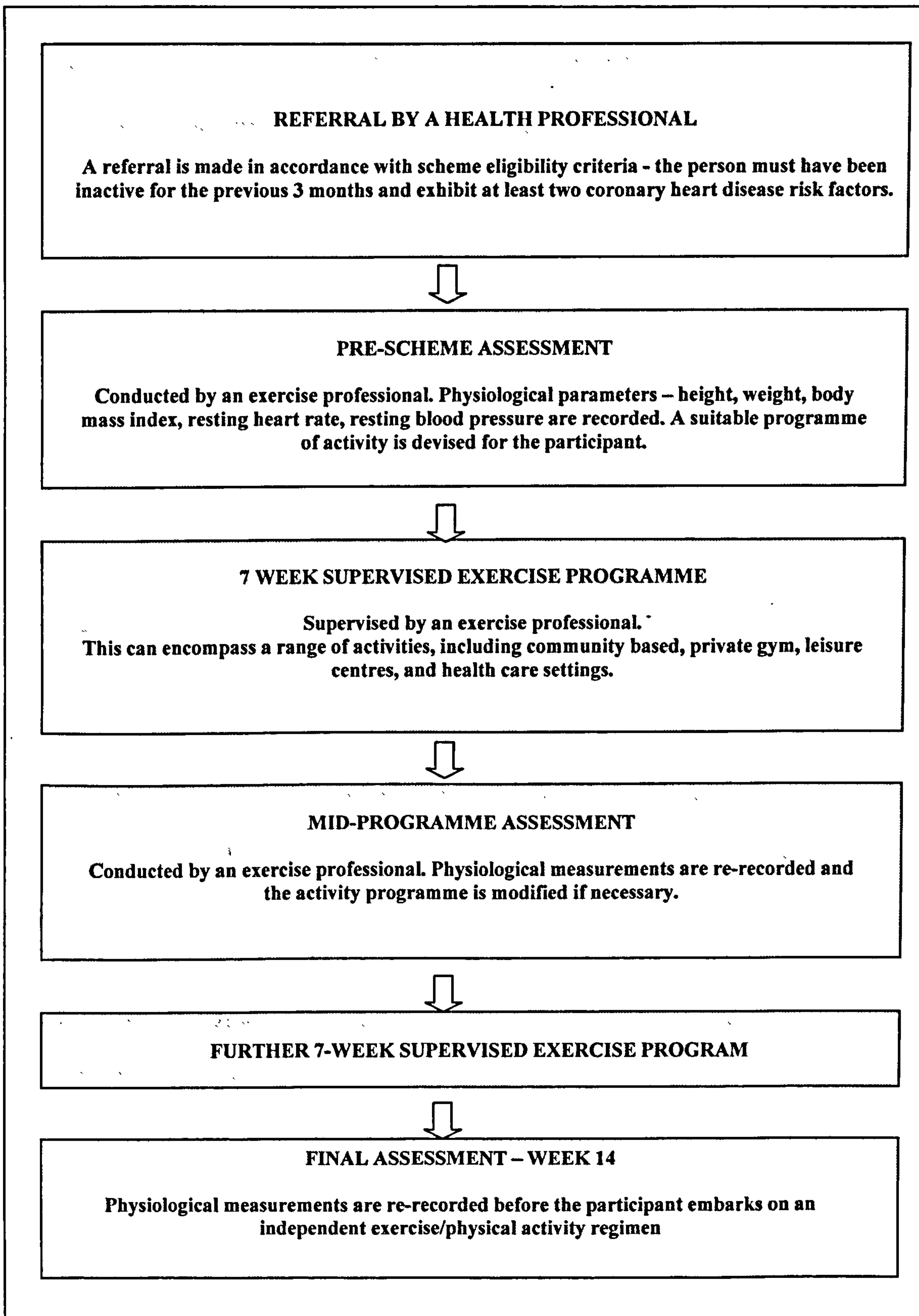


Figure 1.1 the EXCEL exercise referral process.

1.2 Introduction and background to the research

The opportunity to become involved in the evaluation of EXCEL presented itself in year 2000. The programme manager (an employee of Sefton Borough Council), at that time, approached Dr Lindsey Dugdill with the proposition of evaluating the ERP. Ongoing systems of participant monitoring were in place, which were used to produce quarterly reports for the primary funding body, the Primary Care Trust. The data collected were predominantly physiological parameters and figures concerned with programme attendance and adherence. The service providers, to provide evidence of effectiveness with which to underpin future funding bids, sought a more comprehensive evaluation.

1.2.1 Study Aims

The study reported in this thesis was implemented between August 2001 and August 2004 in Sefton, Merseyside, United Kingdom. The overall aim of this study was to understand and critically deconstruct, using key stakeholder perspectives, the processes involved in the pragmatic implementation of an ERP situated in a large borough in the North-West of England. In addition, this study aimed to provide evidence to contribute to the theory and practice of evaluation research within the promotion of physical activity. The research project involved predominantly qualitative methodology.

1.2.2 Study Objectives

The study had five key objectives:

1. To describe the EXCEL ERP.
2. To elicit the participants perspectives of the exercise referral process.
3. To elicit health professionals perspectives of the exercise referral process
4. To elicit exercise professionals perspectives of the exercise referral process.
5. To provide advice and recommendations for the successful implementation of an ERP.

1.3 Structure of the thesis

The proceeding content of the thesis is organised into six chapters. Chapter 2 details the contextual background information, and rational for the proceeding series of research studies. Chapters 3, 4, 5 and 6 outline specific details of the four research studies that formed the basis of the research. Each chapter includes; a short introduction that aims to detail background information and relevant research literature that is specific to the study, details of the methodology used for the specific study, results of the study, and a short discussion that aims to examine the key findings of the study in relation to literature detailed in the chapters preceding introduction. Chapter 7 attempts to synthesise, integrate and discuss the key findings from the studies outlined in chapters 3, 4, 5 and 6.

1.3.1 Chapter 2 – A review of the literature.

The aim of this chapter is to outline background information, both empirical and contextual, that is relevant to the overall aims of the thesis. The chapter begins with a broad summary of the political landscape that is concerned with the public health consequences of physically inactive populations in the twenty first century. The chapter then proceeds to document the political and practical rationale for promoting physical activity within the primary health care setting, of which exercise referral programmes have been suggested as the most popular method utilised in the UK. Despite the popularity of exercise referral programmes there are concerns regarding their ability to significantly influence public health. Furthermore, it is difficult to compare, contrast and reach conclusions as to programme effectiveness due to the heterogeneous nature of published evidence. Consideration is given to the public health debate concerning what constitutes appropriate evidence of effectiveness in health promotion and the predominance of experimental research methods used to evaluate the effectiveness of interventions to promote physical activity. The limitations of experimental research methods in advising practitioners of how they can improve the operational procedures is given, before studies using alternative research methods to examine the exercise referral process are considered. A restatement of the research aims and a summary of how the proceeding studies will add to both, the scientific evidence base and the pragmatic implementation of ERP's completes the chapter. Literature relevant to the aforementioned issues will be examined and critiqued throughout.

1.3.2 Chapter 3 – Describing the exercise referral programme

This chapter outlines the first study in the series. The EXCEL exercise referral programme has the potential to reach a large population group that is characterised by large demographic diversity. An understanding of the actual population that the intervention reaches (i.e. the people who commence the ERP), and the subsequent success for the population is not currently known. That considered the study had two core objectives:

1. To determine the exact population that attended (i.e. attended the initial, pre-exercise appointment), and completed (i.e. attended the final post-exercise appointment) the EXCEL ERP.
2. To explore the impact of the EXCEL ERP in terms of physical activity behaviour change (adherence) and health gain (changes in monitored physiological parameters).

The study was exploratory in nature and quantitative data collection methods formed the basis of data collection. Demographic data (year of referral; gender; postcode; name of surgery; type of health professional that made the referral; job-status; referral reason; age) and quantitative data recordings of health status (weight; height; body mass index; lung function; resting heart rate and blood pressure) were extracted from the, already existing, programme audit database, for period March 2001- March 2003 (n=985).

1.3.3 Chapter 4 – Participant perspectives of the exercise referral process

This study marks a shift in the paradigmatic position of the research. This study aimed to develop an understanding of the experience of an exercise referral programme from the participants' perspective. Specifically to determine the factors that influenced physical activity behaviour at critical stages of the exercise referral process. The objective was to assist service providers in improving adoption of, and adherence to, EXCEL to health.

The research questions for the study were as follows:

1. What were the barriers to physical activity behaviour change, for participants, prior to attending the exercise referral programme?
2. What factors influenced participant's decisions to attend the exercise referral programme in the first instance i.e., exercise adoption?
3. What factors influenced participant's decisions to adhere to the exercise referral programme (complete the 14-week intervention)?
4. What benefits do participants experience because of programme/exercise adherence?

Semi-structured interviews (n=32) were conducted with participants (n=12) at critical stages as they progress through the exercise referral process.

1.3.4 Chapter 5 – Health professional perspectives of the exercise referral process

This chapter presents the findings of a study that investigated key factors that affected EXCEL operation from the health professional's perspective. Specifically the study aimed to examine health professionals, referring practices of participants to the EXCEL programme, perceived barriers to referral, prioritisation given to referring participants to EXCEL in day to day consultations, and perceived importance of their role (both from a personal perspective and from the perspective of the profession as a whole) in the process of exercise referral. A combination of quantitative and qualitative data collection techniques and detailed content analysis was utilised in an attempt to gain an in depth understanding of health professionals' (n=144) opinions and practices towards physical activity promotion in conjunction with an ERP. Accurately completed questionnaires were received from 49% (n= 71) of targeted subjects from a total of 35 practices and consent to be interviewed was obtained from both male (n=6) and female (n=6) general practitioners, three practice nurses and one nurse clinician.

1.3.5 Chapter 6 – Exercise Professional perspectives of the exercise referral process

This study aimed to establish the exercise professionals views and perspectives in relation to:

1. Their level of communication and relationships with health professionals and EXCEL commissioners.

2. The perceived roles and responsibilities of stakeholders involved in the EXCEL ERP (including themselves)
3. Aspects of participant management that they feel are important.

Semi-structured interviews were conducted with employees of Sefton Leisure Services (n=7; one programme manager, four exercise referral officers and two support officers) that were involved directly in the delivery of the EXCEL programme.

1.3.6 Chapter 7 – Synthesis, discussion, and recommendations for practice

This chapter aims to synthesise, integrate and discuss the key findings from the studies outlined in chapters 3, 4, 5 and 6. Consideration is given to the implications of key findings in relation to both previous research; pragmatic implementation of an exercise referral programme and advancement in knowledge concerning ERP effectiveness, in terms of method and depth of knowledge. In this sense, the key findings of each chapter are discussed in relation to some of the broader conceptual issues regarding the evaluation of exercise referral programmes that were previously outlined in chapter 2. In addition, recommendations for the improvement of exercise referral programmes and for future research are outlined.

CHAPTER 2

A REVIEW OF THE LITERATURE

2.1 Physical inactivity – a twenty first century public health priority

2.1.1 Benefits of physical activity

The benefits of a physically active lifestyle in health promotion and disease prevention are widely established and extensively documented (DoH, 2004a and United States Department of Health and Human Services, 1996). The Chief Medical Officers' report "*At least five a week*" (DoH, 2004a) highlighted the importance of physical activity to health and well-being. Physically active individuals are at a reduced risk of developing coronary heart disease, cancer, diabetes and obesity (DoH, 2004a). In addition, physical activity has a beneficial influence upon musculoskeletal health and can have a significant impact upon mental health and well-being. Despite this evidence, physical activity levels in the UK are exceptionally low (DoH, 2004a).

In western society an active lifestyle is a thing of the past. Our culture is now dominated by fewer manual jobs; with sedentary past-times predominating leisure time and mechanised forms of transport are the favoured mode of travel (DoH, 2004a). The consequence is that up to 70% of the population are not active enough to enhance their health (DoH, 2004a). There is also increasing incidences of lifestyle related diseases. In the year 2001, non-communicable diseases were accountable for 60% of annual deaths and 47% of the global burden of disease (WHO, 2001). Physical inactivity is recognised as one of ten leading causes of death in developed countries (WHO, 2002) and is estimated to

cost the UK £8.2 billion annually, in direct and indirect health care costs (DoH, 2004a).

2.1.2 Understanding the political climate

A range of global and international health policy documents demonstrate the significance of “healthy lifestyle” promotion to public health in the twenty first century (Hillsdon *et al.*, 2005; DoH, 2005; DoH, 2004a; DoH, 2004b; Wanless, 2004; House of Commons Health Committee, 2004; WHO, 2004). The WHO’s “*Global strategy on diet and physical activity*” (WHO, 2004; Waxman, 2003) recognises the significant shift in the causes of disability and death in both developing and developed countries and addresses the two main risk factors for non-communicable diseases.

The public health white paper “*Choosing health: making healthy choices easier*” (DoH, 2004b) aims to improve the lifestyle behavioural choices of individuals and communities. In synergy with the WHO Global strategy for Diet and physical activity, increasing exercise behaviour and improving diet and nutrition are two such priorities. Indeed the “*Choosing Health Activity Plan*” (DoH, 2005) outlines the action that needs to be taken in order to promote physical activity in the UK. An active healthcare system has been identified as a target setting for healthy lifestyle promotion.

2.1.3 Primary Health Care

The Public Health White Paper “*Choosing health: making healthy choices easier*” (DoH, 2004b) emphasised the important role of the National Health Service in providing leadership in the promotion of physical activity. The delivery plan encourages health care professional to increase physical activity advice, both opportunistically and routinely, and to work closely with local government and private and voluntary organisations to promote physical activity (DoH, 2005). The idea that the health care professional should provide healthy lifestyle advice to patients is not a new concept. Previously, numerous policy documents have supported, and encouraged health promotion practice for the prevention of chronic diseases within the Primary Health Care setting (DoH and Welsh Office, 1989; DoH, 1996, 1997). In addition, the National Service Framework for Coronary Heart disease (DoH, 2000a) set a requirement for health professionals to identify participants who were at high risk of suffering from coronary heart disease, and provide systematic care to reduce the chances of suffering from the disease – one aspect of which is physical activity promotion.

“By April 2001 all NHS bodies, working closely with Local authorities, will – have agreed and be contributing to the delivery of local programmes of effective policies on a) reducing smoking, b) promoting health eating, c) increasing physical activity and d) reducing overweight and obesity” (DoH, 2000a, p. 20)

2.2 Promoting physical activity in primary health care

There is a strong rationale for physical activity promotion in the primary health care setting. A large and diverse range of people can be targeted for promotion of physical activity since 78% of the UK population visit their general practitioner at least once a year and visit the general practitioner surgery once every five years (Health Education Authority, 1994). The general patient population can therefore be targeted along with those at high risk of suffering a disease, and those with existing disease (Simons-Morton *et al.*, 1998). Given that the primary health care professionals are thought of as a credible source of health advice (Calnan and Johnson, 1983) are regarded as important agents for promoting behaviour change in adult populations (Little and Margetts, 1996); patients require, and are receptive, to physical activity advice from general practitioners (Godin and Shepard, 1990) and have been shown to increase physical activity in response to advice from a health professional (Lewis and Lynch, 1993).

2.2.1 Exercise referral programmes

Exercise referral programmes have been suggested as a good vehicle by which to promote physical activity in the primary health care setting (Fox *et al.*, 1997). Since the inception of the first ERP in year 1990 (Taylor, 1999) they have rapidly increased in number (Fox *et al.*, 1997). In 1994, approximately 200 ERP's were identified in the UK (Biddle *et al.*, 1994). Over the period of a decade, the number of ERP's in the UK was estimated to have increased by

500% (Labour Research Department, 2004). There are now approximately 816, schemes distributed throughout the UK. It is estimated that 89% of primary care trusts in the UK provide exercise on prescription for the local population (Dr Foster Limited, 2003), suggesting that there is widespread distribution throughout the UK. The North West of England is said to have the greatest number of ERP (n=112) when compared with the number existing elsewhere in the UK (Labour Research Department, 2004).

There are many variations in the way ERP's operate (Fox *et al.*, 1997), and a common model of exercise referral was outlined within the National Quality Assurance Framework (NQAF) for exercise referral systems (DoH, 2001a). Typically, an ERP involves the collaboration of health professionals with local exercise professionals. The first step in the process is the identification of participants, by a health professional, (general practitioner or practice nurse), that are suitable for referral to the programme. Participants are then referred to an exercise professional, who is supplied with the significant medical information from the health care professional. The exercise professional, often located within a leisure centre or alternative community setting, uses the medical information supplied by the health professional to devise a suitable programme of activity. The exercise programme routinely lasts for between 8 -14 weeks or alternatively for a set number of exercise sessions (Singh, 1997). The programme of activity is often delivered within a structured exercise setting such as a local leisure centre, gymnasium or alternative community setting and involves attendance at a set number of exercise sessions. The sessions may be provided free of charge or may be subsidised. A typical ERP targets participants who may be symptomatic of

heart disease (e.g. hypertensive, inactive, raised cholesterol, being a smoker) or have alternative medical conditions that would benefit from engagement in physical activity (e.g. arthritis, obesity). In addition, participants may also be referred from tertiary-based programmes such as cardiac rehabilitation or initiate the idea for a referral with their health professional and therefore enter the programme through a process of self-initiation (Hardcastle and Taylor, 2001; Lord and Green, 1995).

2.3 Determining the effectiveness of exercise referral programme

Evidence concerning the effectiveness of ERP takes the form of systematic and non-systematic reviews (Gidlow *et al.*, 2005; Hillsdon *et al.*, 2005; Morgan, 2005; Riddoch *et al.*, 1998; Fox *et al.*, 1997; Biddle *et al.*, 1994), experimental trials (Harrison *et al.*, 2004; Hillsdon *et al.*, 2002; Harland *et al.*, 1999; Stevens *et al.*, 1998; Taylor *et al.*, 1998), evaluation studies (Harrison *et al.* *In press*; Johnston *et al.*, 2005; Crone *et al.*, 2004; Thurston and Green, 2004; Carrol *et al.*, 2002; Day and Nettleton, 2001; Tai *et al.*, 1999; Hammond *et al.*, 1997; Singh, 1997; Smith *et al.*, 1996; Fielder *et al.*, 1995; Lord and Green, 1995) and qualitative investigations (Crone *et al.*, 2005; Wormald and Ingle, 2004; Crone-Grant and Smith, 1999; Stathi *et al.*, 2003; Hardcastle and Taylor, 2001; Singh, 1997).

A recently published Health Development Agency evidence briefing identified eight systematic reviews concerning the effectiveness of the promotion of

physical activity in the primary health care setting (Hillsdon *et al.*, 2005). The evidence briefing concluded that:

- *Brief advice from a health professional is likely to be effective in producing a modest, short term (6-12 weeks) effect on physical activity*
- *Referral to an exercise specialist, based in the community, can lead to longer term (>8 months) changes in physical activity.*

(Hillsdon *et al.*, 2005, p. 3)

In principle, interpretation of the aforementioned conclusions suggests that there is evidence to support the effectiveness of the most common model of exercise referral in the UK (i.e. referral to an exercise professional). However, from the eight reviews identified, 56 studies were reported, from which only six were based within the UK. Furthermore, referral to an exercise specialist was only one example of the interventions that were reviewed. Alternative interventions were included that were not characteristic of a typical UK ERP, for example; information and advice, written prescriptions for exercise, and/or self-help materials distributed by health professionals (Hillsdon *et al.*, 2005). Therefore, the significance of the aforementioned conclusions to determining the effectiveness of UK based ERP's remains equivocal.

A systematic review of the effectiveness of physical activity promotion programmes in primary health care settings reported evidence for small positive effects in increasing short-term physical activity levels, although adherence rates to interventions were ominously low (Riddoch *et al.*, 1998). Experimental and case study evidence were analysed and examined separately in order to

determine ERP effectiveness. The authors noted that the size of the effect diminished with increasing rigour and that a limitation of the evidence was the lack of long-term follow up.

A number of randomised controlled trials have attempted to monitor changes in physical activity levels (both in the short and long term) as a result of ERP participation (Table 2.1). Taylor *et al.* (1998) and Harrison *et al.* (2004) conducted randomised controlled trials with operational ERP's. Taylor *et al.* used medical records to identify and invite participants (n=345) who were aged between 40-70yrs and exhibited a risk factor for coronary heart disease (smoker, hypertensive or overweight) to take part in the study. All participants attended a baseline assessment in a health centre, received leaflets concerning the prevention of coronary heart disease and were subsequently randomised to a treatment (n=97; referral to a leisure centre for a 10 week programme of activity) or control (n=45) group. Intervention subjects engaged in significantly more minutes of moderate and vigorous physical activity at 8 weeks than control (247 v 145, p=0.02; 49 v 21, p=0.06) and more vigorous physical activity at 16 weeks (226 v 160, p=0.03). There were no significant differences between intervention and control groups upon subsequent assessments. Referral to the 10-week exercise programme resulted in short-term improvements in physical activity, reductions in sum of skinfold measurements and blood pressure. Harrison *et al.* (2004) randomised participants referred from health professionals to an intervention (n=275, usual care pathway of a referral programme) or control (n=270). Results led to a conclusion similar to that of Taylor *et al.* (1998) – that is, a referral to an ERP can result in short term improvements in physical activity

levels of participants. However, such improvements are not likely to be maintained in the long-term.

Harland *et al.* (1999) conducted a randomised controlled trial to evaluate the effect of different interventions to promote physical activity in a primary health care setting. Participants (n=523) were randomised to intervention (n =417) or control (n=103). The intervention group was subsequently randomised to one of four groups (see table 2.1 for details). A physical activity score was assigned to each participant based upon the frequency of self-reported physical activity, and a successful outcome was defined as “*moving up one or more physical activity scores from baseline to follow up*” (p. 829). The proportion of participants with improved physical activity scores was greater in the four interventions groups combined than the control group at 12 week follow up (38% v 16%, $p < 0.001$). There was no significant difference between the groups at one-year follow up.

In a study conducted by Stevens *et al.* (1998) all sedentary people, aged 45-74 yrs (n=2253) that were registered with one general practice received a mailed invitation from their general practitioner to take part in the study. Seven hundred and fourteen participants were randomised to intervention (n=363) or control (n=351) groups. Participants were classified as sedentary; low intermediate; high intermediate or active based upon self-reported recall of physical activity participation. In contrast to the previously outlined studies, at 8 months post intervention 10.6% more sedentary participants in the intervention group moved to a more active category compared with the control group.

Table 2.1 Experimental trials that have investigated the effectiveness of exercise referral programmes in the UK (studies have been included if they are UK based and are involve referral of participants from a health professional to an exercise professional for a programme of physical activity)

Authors, Publication date and Journal Title.	Study title	Study aims and main outcome measures	Participant characteristics	Intervention	Outcomes and conclusions
Stevens <i>et al.</i> (1998). British Journal of Sports Medicine	Cost-effectiveness of a primary care based physical activity intervention in 45-74 year old men and women: a randomised controlled trial.	Change in reported levels of physical activity in the eight months between completion of baseline assessment and follow up questionnaires Uptake of the intervention. Physical activity levels at follow up.	All sedentary people, aged 45-74 yrs were identified from a mailed physical activity questionnaire that was sent to all people aged 45-74 (n=2253) registered with one general practice. A total of 714 participants were randomised to intervention (n=363) or control (n=351) groups.	Intervention subjects received a mailed invite from their health professional to attend a consultation with an exercise development officer at a local leisure centre. A 10-week exercise programme was followed with a second consultation. Control sent exercise promotion materials. Eight months after randomisation all subjects received a follow up questionnaire of self-assessment of physical activity levels.	<i>Adoption</i> Thirty five percent (n=126) of participants randomised to receive the intervention attended the first consultation with the development officer. <i>Compliance</i> Ninety-one participants (25%) returned for the second consultation at the end of the 10-week exercise programme. 10.6% more sedentary participants became more active in the intervention group when compared with the control.

<p>Taylor et al. (1998) Journal of epidemiology and community health</p>	<p>Randomised controlled trial of to examine the effects of a GP exercise referral programme in Hailsham, East Sussex, on modifiable coronary heart disease risk factors.</p>	<p>To examine the effects of a GP exercise referral programme on modifiable coronary heart disease risk factors.</p>	<p>Participants (n=389) identified from medical records as smokers, hypertensive, or overweight received a mailed invite to take part in the study. A total of 142 participants (37% of baseline sample), aged between 40-70yrs were randomised to an exercise group (n=97) or control (n=45).</p>	<p>All participants (both intervention and control) received leaflets on preventing coronary heart disease and completed assessments at baseline, mid, post intervention and 3 and 6 months post scheme. Intervention participants attended an introductory session for a 10-week (20 subsidised sessions) exercise programme.</p>	<p>In total 51% of the randomised sample completed all assessments (intervention, n=41; control, n=31) Participants in the intervention group were significantly more active than the control group, for both moderate (intervention 247 minutes V control 145 minutes; p=0.02) and vigorous activity (intervention, 49 minutes V control, 21 minutes; p=0.06. At 16 weeks significant differences were observed in terms of vigorous activity (intervention, 59 minutes V control, 21 minutes; p = 0.03). There was no significant differences observed at weeks 16, 26 and 37.</p>
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<p>Harland <i>et al.</i> (1999) British Medical Journal</p>	<p>The Newcastle exercise project: a randomised controlled trial of methods to promote physical activity in primary care</p>	<p>To evaluate the effectiveness of combinations of methods to promote physical activity</p> <p><i>Main Outcome measures:</i> Self-reported physical activity. Blood pressure. Body mass index. Aerobic capacity. Smoking. Alcohol Consumption.</p>	<p>For a period of one year all patients aged 40-64 yrs were approached, within the general practice setting, by the researcher with an invite to take part in the study. Subsequently, all patients eligible to take part in the programme, identified from the population base, were sent a postal invite to take part.</p> <p>From a total of 2974 patients approached, 523 were randomised to intervention (n =417) or control (n=103)</p> <p>Aged 40-64 yrs</p>	<p>All participants received a baseline assessment; follow up questionnaire at 12 weeks and 1-year post scheme.</p> <p>Intervention group, were further randomised into one of four groups:</p> <ol style="list-style-type: none"> 1. Brief intervention (one motivational interview within 2 weeks of baseline assessment) 2. Brief intervention + financial incentive (one motivational interview within 2 weeks of baseline assessment + 30 vouchers to be exchanged for one episode of aerobic exercise in a leisure centre). 3. Intensive intervention (offered 6 motivational interviews within 12 weeks) 4. Intensive intervention + financial incentive (offered 6 motivational interviews within 12 weeks + 30 vouchers.) 	<p>82% of participants in the intervention group attended at least one interview.</p> <p>35% of the intervention V 16% of controls (p<0.001) increased their physical activity levels post scheme (12 weeks).</p>
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<p>Harrison <i>et al.</i> (2005). Journal of Public Health.</p>	<p>Does primary care referral to an exercise programme increase physical activity one year later?</p>	<p>To assess the effectiveness of a primary care referral scheme on increasing physical activity at 1 year from referral.</p>	<p>Over a 9-month period, participants referred from health professionals that met scheme inclusion criteria were randomised to intervention (n=275) or control (n=270).</p>	<p>As per typical exercise referral programme protocol: Attendance at a baseline consultation, tailored information to increase physical activity + 12 week subsidised exercise pass for a leisure centre. Final consultation at 12 weeks.</p>	<p>Eighty four percent of participants randomised to receive the intervention (232/275) attended the first exercise consultation.</p>
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2.4 Limitations of experimental research for the evaluation of ERP's.

It is difficult to compare, contrast, and reach conclusions as to the effectiveness of attempts to promote physical activity via primary health care due to the heterogeneous nature of the experimental studies reviewed. A diverse range of methods was utilised, in terms of recruitment strategies and activity programmes. In addition, wide ranges of outcome measures have been utilised as indicators of ERP success. Such factors include quantifiable physiological factors (such as height, weight, blood pressure), level of physical activity (for example, Stevens *et al.*, 1998), and/or level of uptake and adherence to the intervention.

The ability of health professionals to adequately identify and refer participants to an ERP has been questioned (Johnston *et al.*, 2005; Riddoch *et al.*, 1998; Fielder *et al.*, 1995). Referral rates by health professionals have been reported as less than one participant per general practitioner per month (Harrison *et al.*, 2004). In some instances, less than one percent of a practice population is targeted to receive the exercise referral intervention (Fox *et al.*, 1997). Evaluation may be compromised by the difficulties of conducting a randomised controlled trial (Fielder *et al.*, 1995), where the recruitment of participants is the responsibility of the health professionals. For example a randomised controlled trial of this type required a sample size of 900 participants, which equated to a referral rate of five participants, per health professional, per week, for a period of 4 months. In reality, health professionals recruited only 38 people for the study and the trial was subsequently suspended.

Both experimental and evaluation studies imply that, from the small percentage of participants that are targeted, ERP's are characterised by low levels of uptake and adherence to the intervention (Gidlow *et al.*, 2005; Riddoch *et al.*, 1998). For example, Stevens *et al.* (1998) reported the results of an experimental trial conducted in West London, UK. Approximately one third of all participants (n=126, from a potential 363) accepted an invitation (from their health professional) to attend a consultation with an exercise professional at a local leisure centre. Harland *et al.* (1999) approached 2974 participants to take part in the experimental trial, from which approximately twenty-five percent (n=734) agreed to take part in the study. Furthermore, one quarter of the participants who agreed to take part in the study (n=196, from a potential 734) did not attend the baseline assessment. Taylor *et al.* (1998) reported that only 51% of a sample of participants randomised to receive a 10-week exercise programme, returned for a health assessment.

2.5 Limitations of experimental methods for evaluating complex community interventions.

The use of experimental methods as a means to evaluate physical activity interventions (DoH, 2001a; Riddoch *et al.*, 1998; Streat, 1998) and complex community interventions (Goodstadt *et al.*, 2001; Bowler and Gooding, 1995) is a contentious issue, of which the appropriateness is questionable. Although information obtained from experimental trials will provide information as to what works in ideal conditions, problems may arise when attempting to transfer the operational characteristics of efficacy trials into real world situations where

limited resources and funding may be areas of concern (Bowler and Gooding, 1995). Experimental research, to date, has manipulated the operational processes that are characteristic of a typical ERP in the UK. A significant alteration of the process has been in; recruitment strategies; exclusion criteria used and the nature of support provided for participants. Subjects have been recruited by mailed invitation (Taylor *et al.*, 1998; Stevens *et al.*, 1998) or, alternatively, by researchers based within a practice setting (Harland *et al.*, 1999). The credibility of general practitioners, as a source of health advice, is thought to be a key factor associated with behaviour change (Stathi *et al.*, 2003; Hardcastle and Taylor, 2001; O'Neill and Reid, 1991). A common feature of studies reviewed, with the exception of Simons-Morton *et al.* (1998), is a lack of supervised exercise sessions and limited participant support beyond health professional advice. Support for exercise following advice from a health professional is a common feature of UK ERP's (DoH, 2001a). In addition, despite attempts to determine the effectiveness of physical activity promotion in primary health care, at a general level, with the exception of the study conducted by Harrison *et al.*, (2004) there have been few attempts to determine the effectiveness of ERP's that operate in accordance with National Quality Assurance Framework guidelines. It is therefore difficult to make inferences regarding UK ERP effectiveness from the results of the aforementioned systematic reviews and experimental trials.

The limitations of using experimental methods to determine the effectiveness of ERP are linked to the wider public health debate concerning what constitutes appropriate evidence of effectiveness in health promotion. And, also, what is the most appropriate methodology that should be used to obtain such evidence

(Coote *et al.*, 2004; Springett, 2001; Goodstadt *et al.*, 2001; Baum, 1995). There is a contradiction surrounding the underlying philosophy of health promotion. In contrast to the expert driven ideology of a randomised controlled trial, health promotion aims to empower participants by engaging them in the process (Peersman, 2001; WHO, 1986). Artificial randomisation of participants to a non-intervention control group is both; ethically inappropriate, denying some participants access to a service that they require, and practically impossible as it can place unrealistic constraints on the intervention design (Nutbeam, 1998). And finally, the inductive nature of experimental methods, (Patton, 2002), may restrict the ability to examine the broader more complex factors that relate to programme success and ignore additional outcomes that may accrue as a result of participation (Riddoch *et al.*, 1998).

2.6 Research methods in Sport and Exercise sciences

The over-dependence of utilising quantitative methodologies in order to understand ERP effectiveness is consistent with research design strategies that are used to gather evidence for the effectiveness of public health interventions for increasing physical activity (Hillsdon *et al.*, 2005; Eaton and Menard, 1998; Ashenden *et al.*, 1997; Hillsdon and Thorogood, 1996; Hillsdon *et al.*, 1995). Research design strategies that are associated with positivistic research doctrines, in particular the randomised controlled trial, are considered the “gold standard” of research methods that are used within the discipline of Sport and Exercise Sciences (Sparkes, 1998). The predominance of positivistic research methodologies in physical activity promotion research is reflected in the recent

evidence briefing published by the National Institute for Health and Clinical Excellence (Hillsdon *et al.*, 2005). The document aimed to outline the evidence for the effectiveness of public health interventions for promoting physical activity. However, evidence from non-experimental research trials was excluded from the review.

The promotion and understanding of physical activity, as health behaviour, is a complex process. Health behaviours are deeply embedded within, and influenced by a large range of social, environmental, and political factors (Morrow, 2001). In order to understand physical activity as a health behaviour and public health intervention it is necessary to utilise evidence derived from a wide range of areas and disciplines (behavioural sciences, sociology and psychology), using a variety of research methods. Physical activity initiatives (including ERP's), are multidisciplinary in nature and conceptually utilise principles of practice that are drawn from numerous discipline areas. These include health promotion/evaluation, in addition to sport and exercise sciences. The discipline of health promotion/health evaluation, despite the predominance of the randomised controlled trial (Peersman, 2001) has also embraced alternative research designs and methodologies. Consequently, there are a number of approaches to the evaluation of health promotion initiatives. These include rigidly structured experimental or quasi-experimental designs, in contrast to less structured, more participative forms of enquiry (Nutbeam, 1998). Qualitative research evidence provides a valuable source of information concerning the effective promotion of physical activity and may be the most effective means by

which to describe the processes that underpin physical activity interventions (McKenna and Mutrie, 2003).

2.7 Guidance for evaluating complex community interventions

Guidance from the Medical Research Council suggests that the randomised controlled trial is the optimal method to minimise bias and determine, accurately, complex intervention effects. Alternative and complimentary approaches to randomised controlled trials may be required to determine why things happen and also, how they can be replicated. On this basis, guidance from the medical research council suggests that a step-wise approach to the evaluation of complex interventions may be taken. This approach may involve an exploratory phase that aims to “identify the key components of an intervention and the underlying mechanisms that may influence intervention outcomes” (Medical Research Council, 2000, p. 3). This phase would come prior to, and possibly in replacement of, conducting a randomised controlled trial. This phase is integral since it permits an understanding of the intervention, its effects, and helps to distinguish key elements of the intervention. Therefore, a trial to change physical activity behaviour patterns, by means of an ERP, may be preceded by an exploratory investigation that aims to determine the factors that influence activity behaviour. Both quantitative and qualitative research method are important within the exploratory phase of research. In particular, qualitative research is important for understanding why something happens i.e. why and how does the ERP improve physical activity levels of participants.

The WHO working group on health promotion evaluation (1998), defined evaluation as “*the systematic examination and assessment of the features of an initiative and its effects, in order to produce information that can be used by those who have an interest in its improvement or effectiveness*” (p.3). A distinction can be made between process and impact/outcome evaluation (Israel *et al.*, 1995). Process evaluation serves to “*describe the actual activities implemented in the intervention and the extent of participant exposure, identify and describe participants and elucidate the internal dynamics of program operations*” (Israel *et al.*, 1995, p. 369). In contrast, impact/outcome evaluation aims to determine the effect of an intervention in achieving changes in “*mediators such as knowledge, attitudes, beliefs, and behaviour of the target group or the effects of the programme on health status, morbidity, and mortality*” (Israel *et al.*, 1995, p. 369). The difference between impact and process based evaluation can be distinguished by the nature of the research question. Impact evaluation may ask does the intervention have the required effect? Process evaluation may ask, what are the reasons behind the effect? (Nutbeam *et al.*, 1998).

2.8 Challenging quality of delivery

Positivist research methodologies have dominated review articles concerning the evaluation of ERP’s (Hilldson *et al.*, 2005; Morgan, 2005; Riddoch *et al.*, 1998). Ultimately, the choice of research method(s) should depend upon the nature of what is being evaluated (Springett, 2001); the nature of the evaluation (impact or

process) and the specific research question(s) (Tai and Illfe, 2000). The focus of experimental research has been to determine if the intervention increases physical activity and not how the intervention has increased physical activity. There have been repeated requests for further research (Riddoch *et al.*, 1998; Smith and Illfe, 1997; Illfe *et al.*, 1994) and suggestions that alternative methodologies should be used to understand how participants experience such programmes (Gidlow *et al.*, 2005; Stathi *et al.* 2003; DoH, 2001a; Hardcastle and Taylor, 2001; Riddoch *et al.*, 1998; Fox *et al.*, 1997). Studies that have utilised alternative research methods have been inadequately recognised in academic literature and circles; however, there has been increasing recognition of the value of such studies in recent years. A number of review articles have embraced research that has used methods other than experimental trials (Gidlow *et al.*, 2005; Thurston and Green, 2004). For example, Gidlow *et al.* (2005) utilised the results of both experimental and non-experimental trials in order explore attendance at UK ERP's. Thurston and Green (2004) propose that sociological principles should be considered when attempting to understand exercise behaviour in relation to an ERP. It is suggested that "*any study of adults propensity towards sustainable physical activity needs to be viewed as an aspect of their lives in the round*" (p. 379) and that perspectives from different perspectives should be "synthesised" in order to understand participant experiences. This viewpoint is unique to a field of research that has predominantly utilised principles of practice that are drawn from psychological and physiological disciplines.

There are a number of studies that have attempted to understand the “real world” process of exercise referral without experimental manipulation of the programme. Such studies have been termed “evaluation” studies based upon the non-experimental nature of the methodology adopted (Table 2.2). Evaluation studies have provided valuable information concerning the exercise referral process from the perspective of service providers, health professionals, and participants. The finer details of each study will be discussed within the specific introduction to each chapter (the relevance of information from each study to the subsequent chapter of the thesis is outlined in table 2.2). However to provide a broad overview, such studies provide an insight into the characteristics of participants that are referred, subsequently adopt and then adhere to the exercise programme (Harrison *et al.*, 2004; Tai *et al.*, 1999; Smith *et al.* 1996a; Lord and Green, 1995). The determinants of exercise adherence for participants (Tai *et al.*, 1999) and reasons for relapse (Harrison *et al.*, 2004) are also explored. In addition, referring professional (practice nurses, general practitioners and practice managers) perceptions of the ERP have also been explored using qualitative research techniques (Smith *et al.*, 1996). Such studies are relevant to the “effectiveness” debate surrounding ERP’s and begin to distinguish some process-based issues; however, the methodological rigour of such studies is questionable.

Table 2.2 Evaluation trials that have examined the effectiveness of exercise referral programmes in the UK

Authors, Publication date and Journal Title.	Study title and research aims	Study aims, methods and main outcome measures	Intervention	Outcomes and conclusions	Relevance to thesis.
Lord and Green. (1995) Health Education Journal	Exercise on prescription: does it work?	<i>Methods</i> Pluralistic real world evaluation (Quantitative and qualitative) <i>Outcome measures</i> Primary compliance. Compliance at scheme completion (10 weeks) and 6 months post scheme. Reasons for participant relapse. Health Improvements. Self completion postal questionnaires were administered at baseline, scheme completion (10 weeks) and post scheme (6 months).	Participants referred to the scheme following a routine cardio-vascular screening appointment with a health professional. An assessment was conducted with a community health and fitness officer where a 10 week (30 sessions) exercise programme was devised. Participants were asked to contribute the price of a prescription (£4.75) to the scheme.	Between October 1992 and October 1993 a total of 419 participants were referred to the scheme. <i>Uptake rate</i> (i.e. attendance at a a baseline assessment was 60% (n=252) . <i>Compliance</i> 10 weeks = 34% (85/252) 6 months = 68% (58/85) <i>Reasons for drop-out</i> Interruptions to routine (illness, injury, holidays)	Chapter 3. Chapter 4.
Fielder <i>et al.</i> (1995) Health Education Journal	Lessons from a pilot study on prescribing exercise	Describes the design and piloting of an RCT and discusses the difficulties of running such a trial. The aim of the trial was to assess the relative effectiveness of verbal advice only, prescription + verbal	Health professionals identified participants for randomisation to a) usual verbal advice from a GP, b) advice + written prescription, c) advice written prescription and attendance at local leisure centre (to receive a health assessment and a personalised exercise programme). All participants were given a questionnaire to complete at baseline and after three months.	Recruitment rates to the intervention were low and as a consequence the trial was suspended. <i>Reasons for low recruitment by health professionals</i> ; the trial added several minutes onto a consultation; the trial was not a priority in health professionals minds and therefore	Chapter 5.

<p>Smith <i>et al.</i> (1996) British Journal of Healthcare management.</p>	<p>Prescription for exercise in primary care: is it worth it?</p>	<p>advice and prescription with the introduction of a formal exercise programme. Real world evaluation Characteristics of participants attending the scheme. Questionnaires and descriptive information.</p>	<p>Health professionals from 14 practices referred participants to the scheme. Participants attended a baseline assessment and completed SF 36 health status questionnaire; current exercise habits questionnaire and a psychological measure of health beliefs.</p>	<p>they forgot to recruit.</p>	<p>Chapter 3. Chapter 4.</p>
<p>Hammond <i>et al.</i> (1997) Health Promotion International</p>	<p>Exercise on prescription: guidelines for health professionals</p>			<p>Over a 10 month period two hundred and eleven participants were referred to the scheme. <i>Characteristics of participants attending the scheme.</i> Twice as many women than men attended the scheme, a wide range of ages started the scheme of which 53% were aged 45 yrs and over. <i>Uptake</i> Forty six percent (98/211) <i>Compliance</i> Thirty nine percent (38/98)</p>	<p>Chapter 5.</p>
<p>Tai <i>et al.</i> (1999) Journal of the Royal Society of medicine</p>	<p>Promoting physical activity in General Practice; should prescribed exercise be free</p>	<p>Real world evaluation (Quantitative) <i>Aims</i> To identify potential predictors to the exercise programme, to test the hypothesis that free or low-cost access to a leisure centre influences adherence to exercise.</p>	<p>Between 1995 and 1996 general practitioners from 10 practices could refer participants to a local leisure centre for a 10 week programme of activity (20 session). A charge equivalent to that of an NHS prescription was made. Participants attended a baseline assessment for a fitness assessment and were counselled on exercise. Demoagraphic data were collected, in addition to information concerning attitude towards health; past and present fitness and exercise behaviour and perceived barriers to exercise (assessed using the</p>	<p>Over an 18 month period 152 people began the exercise programme (women, n=108; men, n= 44). <i>Compliance</i> Twenty two percent (n=33) Adherers were significantly older (mean age; adherers 49.8 yrs; no adherers, 43.6 yrs). <i>Determinants of adherence</i></p>	<p>Chapter 3. Chapter 4.</p>

			<p>London Health and Fitness Questionnaire) Upon completion of the programme participants were re-assessed.</p>	<p>Lack of money (participants who perceived lack of money to be a barriers to exercise were 4 times more likely to drop-out than those who did not perceive money as a barrier. No knowing about local exercise facilities (participants who did not previously know about exercise were 3.5 times more likely to complete the programme than those that did).</p>	
<p>Day and Nettleton. (2001) Health Bulletin</p>	<p>The Scottish Borders general practitioners exercise referral scheme (GPRS)</p>	<p>Real world evaluation (Quantitative – questionnaires) To provide a description of the Scottish Borders exercise referral scheme. To establish whether short-term improvements in physical activity were maintained 3-5 years post-scheme completion. <i>Method</i> A semi-structured questionnaire to assess self-reported level of physical activity.</p>	<p>Participants (n=324) that were referred to the scheme between years 1994-1996 were sent a semi-structured questionnaire.</p>	<p><i>Response rate</i> Forty percent (n=129) Over 40% of respondents remained sufficiently active to raise their heartbeat and breathing rate at least twice a week.</p>	<p>Chapter 3. Chapter 4.</p>
<p>Carrol <i>et al.</i> (2002) Health Technology Assessment</p>	<p>Promoting physical activity in South Asian Muslim women through “exercise on prescription”</p>				
<p>Crone <i>et al.</i> (2004)</p>	<p>Maintaining Quality in Exercise Referral Schemes: A Case Study</p>	<p>To describe a case study of an exercise science support service for an exercise referral</p>	<p>The proactive management service is outlined the aim of the service is to provide a link between all key stakeholders involved in the delivery of an</p>	<p>There is anecdotal evidence from leisure service providers that there were improvements in the scheme.</p>	<p>Chapter 6.</p>

<p>Primary Health Care Research and Development</p>	<p>of Professional Practice.</p>	<p>programme.</p>	<p>exercise referral programme (leisure providers, health professionals and participants). The aim is to provide quality assurance for the programme. There are three elements to the service; Central management service (further details are outlined by Jonston <i>et al.</i>, 2005); training workshops for exercise professionals and consultancy for leisure providers.</p>	<p>The importance of a co-ordinated approach to maintaining quality in exercise referral programmes is outlined.</p>	
<p>Johnston <i>et al.</i> (2005) Health Education Journal</p>	<p>The nature of all inappropriate referrals' made to a county wide physical activity referral scheme: Implications for practice.</p>	<p><i>Aim</i> To evaluate the impact of a centralised referral mechanism upon the number and type of inappropriate referrals made to an exercise referral scheme. <i>Method</i> An explanatory single case research design.</p>	<p>The centralised referral mechanism involves an exercise scientist acting as an intermediary between the referring health professional and the leisure provider. The aim is to improve the quality assurance of the programme and to ensure all unsuitable participants are removed from the programme.</p>	<p>Total number of referrals over a 17 month period was 2285 participants (females, n=1638; males, n=1217) Four hundred and fifty eight referrals (16 percent of referrals) were removed as a result of the CRM. Reasons included; medical reasons (n=135); classified as already active (n=74); psychosocial reasons (n=41) and not ready for exercise (n=208).</p>	<p>Chapter 3. Chapter 4. Chapter 5.</p>
<p>Harrison <i>et al.</i> (2005)</p>	<p>Access to exercise referral schemes – a population based analysis</p>	<p>To provide detailed information on the types of participants accessing an exercise referral scheme. <i>Methods</i> Prospective data were collected from a patient register for referrals.</p>	<p>Health professionals referred participants to attend an appointment with a health trainer at a local leisure centre. A programme of activity was provided a subsidised programme of activity for a period of 12-weeks. At the end of 12 weeks the participant is reassessed.</p>	<p>Between January 1998 and December 2002, 6610 participants were referred to the scheme from 125 general practices (female, n=4018; male, n=2592). <i>Uptake</i> Seventy nine percent of participants attended the initial appointment. <i>Characteristics of participants who began the scheme</i> Participants referred for fitness or mental health were more likely to attend. Participants in the youngest and oldest age groups were least likely to attend.</p>	<p>Chapter 3. Chapter 4.</p>

2.9 Obtaining stakeholder perspectives using alternative methodological designs

There is currently a large policy agenda surrounding the attainment of health service users perspectives in service development. Consultation action, in relation to the Department of Health, provides an opportunity for stakeholder groups to contribute to the development of Public Health Policy. For example, a consultation for improving public health formed an integral aspect of the Public Health White Paper “*Choosing Health: Making Healthier choices easier*” (DoH, 2004B). The consultation provided an opportunity for all health service users and providers to contribute to a debate concerning how opportunities for health improvement could be achieved (DoH, 2004c). Stakeholders’ perspectives can make an important contribution to in health policy development, and also health services intervention design. Qualitative research methods can be used effectively in order to gain stakeholder perspectives, and have recently been used to determine public health opinions about their own health, the nations health and also influences upon health (Opinion Leader Research, 2004).

Previously, it has been suggested that the success of an ERP may depend upon the characteristics of the key personnel involved (Fox *et al.*, 1997). However, there is a dearth of evidence that has examined the process of an ERP from the perspectives of all key stakeholders involved. Key stakeholders involved in the practical implementation process of exercise referral include; participants, health professionals and exercise professionals (DoH, 2001a). Information obtained from key professionals and participants with regard to their attitude towards the exercise referral service and opinions of programme processes at an operation

level may have implications for their involvement. and subsequent improvement/modification of the referral process. In addition, obtaining stakeholder opinions and working practices of the services to which they refer can be a valuable means of improving a service.

2.9.1 Lay expertise and knowledge

Popay and Williams (1996) present an argument for the application of lay knowledge to public health research. The authors outline the requirement for a *“more systematic dialogue within scientific research, between researchers and policy makers, and between professional and lay experts”* (p. 760). Lay knowledge is particularly relevant to public health interventions in the twenty first century. For example, it is argued that an intervention that aims to promote and enhance physical activity must consider physical activity behaviour within the context of an individual’s life circumstances (Thurston and Green, 2004).

The focus of qualitative research to date that has investigated the exercise referral process has been to understand participant perspectives and experiences (Table 2.3). Investigations typically involved a combination of both female and male participants, aged between 30 and 80 years old, who were at various stages of the referral process (see table 2.3 for specific detail). Crone-Grant and Smith (1999) and Hardcastle and Taylor (2001) interviewed the same participants at multiple time points of the intervention, in contrast to Singh (1997) and Stathi *et al.* (2003) who interviewed participants once during the intervention period.

The aforementioned qualitative investigations have also provided an insight into the experiences of participation in an ERP and the specific factors that influence such experiences. Results suggest that in addition to improvements in physiological indices, participants experience a wide range of health outcomes (that are mental, social and personal in nature) because of participation in an ERP (Crone *et al.*, 2005; Stathi *et al.*, 2003; Hardcastle and Taylor, 2001; Singh, 1997).

Table 2.3 Qualitative investigations of participant perspectives of the exercise referral process in the UK

Authors, Publication date and Journal Title	Study title	Study aims and main outcome measures	Outcomes and conclusions	Relevance to thesis.
Crone <i>et al.</i> (2005) Health Education Research	"I feel totally at one, totally alive and totally happy": a psycho-social explanation of the physical activity and mental health relationship"	<p>Eighteen participants, recruited from 3 different exercise referral programmes (5 males; 13 females; mean age 55.5 yrs).</p> <p>Study 1 (n=6; Male, n=1; Female, n=5)</p> <p>Study 2 (n=7; Male, n=1; Female, n=6)</p> <p>Study 3 (n=5; Male, n=3; Female, n=2)</p> <p>For studies 1 and 2 participants took part in a pre and post intervention focus group, in addition, 1 respondent from each group was selected for in-depth interviewing.</p> <p>For study 3, participants near completion of the scheme took part in a one to one interview.</p>	<p>Results demonstrate the importance of context specific constructs (social network, environment, culture and social support) to participant's experiences of an exercise referral programme and mental health.</p> <p>Three outcomes emerged as a result of scheme participation. These include a sense of belonging, a sense of purpose and physical health.</p> <p>Results highlight the importance of social constructs to mental health.</p>	Chapter 4

<p>Wormald and Ingle (2004) Health Education Journal</p>	<p>GP exercise referral schemes: Improving the patient's experience.</p>	<p><i>Study Aim</i> To explore patients' perceptions of the exercise referral scheme.</p> <p>30 participants who had attended at least one exercise session (male, n=10; females, n=20). Focus groups x 6.</p>	<p>A wide range of benefits were reported by participants (physical and psychological).</p> <p>Social support and supervision from the exercise leader was important in maintaining participants' motivation and adherence to the scheme.</p> <p>Access to the scheme was restricted due to a lack of awareness from primary care staff. Self referral was evident.</p>	<p>Chapter 4</p> <p>Chapter 5.</p>
<p>Hardcastle and Taylor (2001) Journal of Ageing and Physical Activity</p>	<p>Looking for more than weight loss and fitness gain: psychosocial dimensions among older women in a primary-care exercise referral scheme.</p>	<p><i>Study Aim</i> To explore participants accounts of their past and current physical activity experiences and perceptions of the determinants of physical activity.</p> <p><i>Method and participants</i> 15 female participants; aged between 50-80 years old. All interviewed at three time points; initial, mid (at 5 weeks) and end point (10 weeks after initiation) of the exercise programme.</p>	<p>Some participants entered the scheme through a process of "self initiation".</p> <p>Participants felt accountable to their health professional to attend the exercise programme.</p> <p>Social support, in the form of exercise professional advice and encouragement was important in the early phases of the exercise programme in ensuring that participant's experiences are positive.</p> <p>Participants reported a lack of encouragement from GPs in promoting physical activity.</p>	<p>Chapter 4</p> <p>Chapter 5.</p>

<p>Crone-Grant and Smith (1999) Journal of Sport Sciences</p>	<p>Broadening horizons: A qualitative enquiry into the experience of patients on an exercise prescription scheme</p>	<p><i>Study Aim</i> To investigate the physiological and psychological experiences of participants on a GP referral to a leisure centre</p> <p><i>Method</i> Focus groups x 2. Pre-intervention (n=5; 1 male, 4 females; aged between 30-65 years old) Post-intervention (n=3; 3 females; aged 38-65 years old)</p>	<p>The main issues of importance to a positive experience for participants of an exercise referral scheme were the need for social support and a cultural scene.</p> <p>Participants cited feelings of apprehension and anticipation of beginning a programme of activity.</p>	<p>Chapter 4</p>
<p>Stathi <i>et al.</i> (2003) Journal of The Royal Society for the promotion of health</p>	<p>The experiences of older people participating in exercise referral schemes.</p>	<p><i>Study Aim</i> To offer insights into how physical activity is situated in notions of successful ageing of people participating in an exercise referral scheme and to inform GPs and health professionals about specific issues emerging from participation.</p> <p><i>Method</i> Thirteen participants (female, n=5; male, n=8); age ranges 63-79, at various stages of the exercise referral process.</p> <p>Participants chose to take part in an individual or group semi-</p>	<p>Participants cited a range of personally valued health benefits. These included better physical and mental function; feelings of accomplishment and success).</p> <p>General practitioner recommendation was important in influencing participant's decision to start and continue the exercise programme.</p> <p>Participants differed in their preferences for the mode of physical activity.</p> <p>Professional help and support was critical for helping</p>	<p>Chapter 4</p>

Singh (1997) Journal of Management in Medicine	Why are GP exercise schemes so successful (for those who attend)?	structured interview.	<p><i>Study Aim</i> To evaluate the GP exercise scheme, its organisation and participants.</p> <p><i>Method</i> Thirteen participants (female, n=11; male, n=2) All participants took part in one semi-structured interview (time- point not recorded)</p>	<p>participants overcome fears/barriers of exercising.</p> <p>Attendance at an exercise referral scheme is both popular and enjoyable for those that attend.</p> <p>Participants state that the “functional us of their bodies” improved as a result of participation in exercise.</p> <p><i>Exercise referral population</i> One general practice (2 general practitioners” referred 100 participants to the scheme in an 18-month period (the total number of referrals accounted for 3% of the population base).</p>	Chapter 4
Smith <i>et al.</i> (1996) Health Education Journal	Exercise as Therapy. Results from group interviews with general practice teams involved in an inner London “prescription for exercise scheme”.	<p><i>Study Aims</i> To determine health professionals:</p> <ul style="list-style-type: none"> • Reasons for referring to the Scheme • Perceived health benefits to Patients • Criteria for selection of Patients to the scheme 	<p>Health professionals utilise the scheme as a therapeutic option for patient care (as opposed to primary prevention)</p> <p>Health professionals are cautious in their interpretation of referral criteria due to concerns regarding liability.</p> <p>There was limited knowledge of</p>	Chapter 5	

		<p><i>Method.</i> Group based semi-structured interviews (n=10). Twenty three members of general practice teams (general practitioners, n=16; practice nurses, n=2; practice managers, n=4, receptionist, n=1)</p>	<p>the health benefits of exercise.</p>	
<p>Gould <i>et al.</i> (1995) Health Education Journal</p>	<p>Promoting physical activity in primary care: measuring the knowledge gap.</p>	<p><i>Study Aim</i> To identify attitudes to and knowledge about the health benefits of physical activity.</p> <p><i>Participants</i> General Practitioner trainers (n=20) and practice nurses (n=19).</p> <p><i>Method</i> Semi-structured interviews</p>	<p>Specific knowledge about the health benefits of physical activity was poor.</p> <p>Health professionals received limited training in issues concerning the health benefits of physical activity.</p>	<p>Chapter 5</p>

2.9.2 Health Care Professionals

Health professionals are the primary gatekeepers for clients entering the exercise referral process and hence play a pivotal role in current ERP delivery. However, health professional opinions, attitudes, and working practices about physical activity promotion in primary health care using an ERP have rarely been investigated. Fielder *et al.* (1995) reported poor recruitment rates of participants, by health professionals to an evaluation trial of an ERP. Qualitative research methods were used in order to identify health professional's barriers to referring participants. Promotion of physical activity required an increase in consultation time and was a low priority for health professionals. In addition, Smith *et al.* (1996) and Gould *et al.* (1995a) have examined health professional attitudes and opinions about the health benefits of exercise and engagement in exercise promotion. Smith *et al.* (1996b) conducted group interviews in order to examine health professionals (general practitioners, n=16; practice nurses, n=2; practice managers, n=4, receptionist, n=1) reasons for joining an ERP, perceived health benefits, criteria for selection and the subsequent referral of patients. Health professionals expressed limited knowledge of the health benefits of exercise and utilised the programme as a therapeutic option for patient care rather than for primary prevention of coronary heart disease. Gould *et al.* (1995a) conducted semi-structured interviews with both general practitioners and practice nurses. Results suggested that specific knowledge about the health benefits of physical activity was poor and that health professionals received limited training in issues concerning the health benefits of physical activity. The quality of the research method used for both studies is questionable based upon the fact that both studies

have reported, in very limited detail, the specific aspects of the research method (McKenna and Mutrie, 2003). In addition the results reveal very little about the actual mechanisms used to select participants for referral, the barriers to referring participants to an ERP and health professionals self perceived role in the referral of patients.

2.10 Chapter summary

To summarise, over the last decade there has been a large proliferation of ERP's in the UK (Labour Research Department, 2004). Despite their apparent popularity with participants, and professionals (Fielder *et al.*, 1995) and increasing government endorsement (DoH, 2005; Health Education Authority, 1996) their ability to significantly influence population public health is open to debate (Illfe *et al.*, 1994 and Riddoch *et al.*, 1998). There is insufficient evidence of ERP success that can substantiate both the large proliferation of programmes or government endorsement of them.

Concerns regarding the effectiveness of ERP's are related to a wider public health debate. Despite conclusive evidence concerning the health benefits of physical activity and the development of physical activity guidelines, there have been little improvements in exercise behaviour at a population level. An understanding of the design and implementation of the most effective, community based physical activity interventions in the UK is limited (Hillsdon *et al.*, 2005; Morgan, 2005; McKay *et al.*, 2003; Farnham and Mutrie, 1998).

Evaluation of ERP's have predominantly focused upon understanding effectiveness and not process based issues (Johnston *et al.*, 2005). Experimental studies, utilising strategies and methods allied to positivist research paradigms, have advanced our understanding of physical activity promotion in primary health care based upon quantifiable outcomes. Attrition in ERP's is high (Gidlow *et al.*, 2005) and level of uptake and adherence varies in accordance with participant characteristics (Taylor *et al.*, 1998). However, a key limitation of experimental data is there is no explanation of why these trends occur (Wimbush and Watson, 2000). In this sense, such studies are restricted in their ability to advise practitioners as to how they can improve the operational procedures of ERP. Arguably, knowledge of the outcomes of an intervention may be of limited use unless they can be linked to the processes that led to such outcomes (Kemmer, 2001). The major challenge facing health and exercise professionals and organisations concerned with health development and policy target delivery is how to facilitate long-term behaviour change in the population (McKay *et al.*, 2003). In order to replicate effective interventions it is essential to understand the processes underlying their successful application. However, there remains an inadequacy of methodologically sound attempts to understand the process of exercise referral in its entirety.

A key research question that remains unanswered in the context of an ERP is; what is it about the ERP's that make them successful or unsuccessful for the stakeholders involved? There is a lack of critical awareness of what really works (i.e. what is it about the ERP that leads to sustained behaviour change?) and this is limiting their potential as a delivery mechanism for physical activity.

Understanding peoples' experiences and the social contexts that strengthen and support physical activity behaviour is important for successful replication and dissemination of information (Nutbeam, 1998). This research aims to assist both the academic community, in understanding how participants experience physical activity, and also how practitioners working to promote physical activity understand programme operation and regard ERP effectiveness.

2.11 Research aim and objectives

The overall aim was to critically deconstruct the process, impacts and outcomes of EXCEL from the perspectives of the key stakeholders (health professionals; exercise professionals and participants), in order to inform and improve future practice.

The study had five objectives:

1. To describe the EXCEL exercise referral intervention.
2. To elicit the participants perspectives of the exercise referral process.
3. To elicit health professionals perspectives of the exercise referral process
4. To elicit exercise professionals perspectives of the exercise referral process.
5. To provide advice and recommendations for the successful implementation of an ERP

2.12 Research Design

A naturalistic research design was employed in order to evaluate the EXCEL ERP (Patton, 2002; Lincoln and Guba, 1984). In an evaluation study that attempts to understand the ERP in its entirety, it is argued that the research design has to adopt a holistic approach that embraces and recognises the intervention complexity rather than strip away the layers as a randomised controlled trial would (Wimbush and Watson, 2000). Qualitative strategies of enquiry embrace subjectivity and context (Stearn, 1998; Denzin and Lincoln, 1994; Lincoln and Guba, 1985) and as a consequence offer the opportunity to deal more effectively with evaluation of physical activity interventions. Examining an ERP utilising alternative methods allows an understanding of process-based issues. A multi-method, pluralistic approach, incorporating both outcome and process was elected (Beattie, 1995).

The terms multi-method, mixed-methods and mixed models (Patton, 2002) have been used to describe the process of combining qualitative and quantitative approaches within a research study (Tashakkori and Teddlie, 2003). The appropriateness of combining methodological approaches is, however, a contested issue within academic research circles. Guba and Lincoln (1994) highlight a series of contrasts between “positivist” and “naturalist” (also referred to as interpretivist and constructivist approaches) approaches to research in terms of ontology, epistemology, axiology, generalisations, causal linkages and inductive/deductive logic. They argue that compatibility between qualitative and

quantitative approaches is impossible due to the incompatibility of the paradigms that underlie the methods.

Despite such concerns, a pragmatic school of thought has emerged (Data, 1994; Patton, 1990). Pragmatists argue that a multi-method approach is appropriate for evaluation research, for several practical reasons. Firstly, evaluators and researchers utilise both paradigms; secondly funding agencies have supported both paradigms, and thirdly both paradigms have influenced public health policy (Datta, 1994). In addition, this approach enables multiple layers of data to be gathered which can be triangulated to add trustworthiness to the findings (Dugdill *et al.*, 2005). A multi-method research design may be used in order to confirm findings from different types of data or expand upon understanding from one method to another (Creswell, 1994).

Patton (1990), suggests that within a “mixed-model” approach to research aspects of qualitative and quantitative paradigms may be mixed across three stages of the research process, (a) design (naturalistic or experimental), (b) measurement (qualitative data or quantitative data) and (c) analysis (content or statistical). In addition, Tashakkori and Teddlie (1998) outline three broad approaches to “mixed- method” research design. These include “equivalent status designs”, “dominant, less-dominant designs” or “designs for multi-level use of approaches” (for further details see Tashakkori and Teddlie, 1998, p. 43). A “*dominant – less dominant*” mixed method approach was utilised within the subsequent series of research studies. Methods and assumptions that are consistent with the naturalistic paradigm characterised the predominant approach

to the research study. However, a small aspect of the research design utilised principles of practice drawn from a quantitative research paradigm.

This research involved the completion of four empirical studies and was characterised by two clearly distinct phases. Multiple methods were utilised in a sequential manner (Tashakkori and Teddlie, 1998). The research was conducted in a “real-world” setting. In accordance with Patton’s categorisation (outlined above), phases 1 and 2 both encompassed a research design that could be described as “naturalistic” in nature (Patton, 1990). The phases may, however, be distinguished by the measurement and analysis tools that were utilised. The initial “exploratory” phase (study one) encompassed and utilised principles of practice from a quantitative approach to research. This outcome orientated phase aimed to describe and examine the effects of the programme (i.e. physiological change) (Naidoo and Wills, 2000). Quantitative data (physiological monitoring and survey questionnaires) was used in order to describe the participant base of EXCEL and describe the outcomes that result from scheme participation. The follow up “explanatory” phase (studies 2, 3 and 4), using key stakeholder perspectives, aimed to “*elucidate and understand the internal dynamics of how the programme operated*” (Patton, 2002, p. 159). On the basis that context, depth and understanding were important, a qualitative approach was adopted for this phase of the research.

To summarise, a naturalistic/real-world approach was elected for the research design. Combinations of quantitative and qualitative data “*multiple sources of converging evidence*” (Yin, 1994, p. 93) were used to answer the research questions. Quantitative data was used to determine if the intervention resulted in

positive health outcomes. Qualitative data was used in order to determine how the programme influenced the attainment of positive health outcomes.

2.13 Ethical Approval

Ethical approval was obtained from the Research and Graduate School Ethics Committee of Liverpool John Moores University. All participants provided informed consent and all procedures were in accordance with regulations and guidelines approved by the ethics committee.

CHAPTER 3

STUDY ONE – DESCRIBING EXCEL

3.1 Chapter introduction

The aim of EXCEL is to reduce the incidence of Coronary Heart Disease in the population of Sefton. This aim is broad in nature, as is the referral criteria for the programme (see appendix 1). This point considered, the EXCEL ERP has the potential to reach a large population group that is characterised by large demographic diversity. An understanding of the actual population that the EXCEL ERP reaches (i.e. the people who commence the programme), and the subsequent success for the population is not currently known.

Previously the demographic characteristics of participants who have attended ERP's, in terms of age, gender, and referral reason have been described. In some instances, at least twice as many females as males have attended the programmes (Harland *et al.*, 1999; Tai *et al.*, 1999; Stevens *et al.*, 1998; Smith *et al.*, 1996a; Lord and Green, 1995) and participants from a wide range of age groups have attended. Although the defined age categories differed between programmes – a general finding was that the youngest and oldest age categories represented the smallest number of participants that attended the ERP's (Smith *et al.*, 1996a; Lord and Green, 1995).

The overall success of ERP's (defined as the level of adherence to the intervention) and the population sub-groups that experience the most success have been described. Approximately one quarter of all participants who commenced an ERP subsequently completed (Lord and Green 1995; Wealden District Council, 1995; Tai *et al.* 1999). In contrast, Taylor *et al.* (1998) reported

an adherence rate of 41%, in the experimental group of a randomised controlled trial and Harland *et al.* (1999) reported an adherence rate of 61%. Compliance to a 10-week programme of exercise (defined as those participants who attended the 10-week consultation and were still exercising) improved progressively with age (Lord and Green, 1995). Fifteen percent of participants categorised as aged less than 35yrs complied with intervention protocol, in comparison to 44% of participants categorised as aged 55+. Tai *et al.* (1999) reported that the mean age of participants that completed an exercise referral intervention was significantly higher than those that did not, 49.8yrs and 43.6yrs, respectively.

This exploratory study had two core objectives. Firstly, to determine the exact population that attended, and completed the EXCEL ERP and, secondly to explore the impact of the programme in terms of physical activity behaviour change (adherence) and health gain (changes in monitored physiological parameters).

3.2 Research Questions:

1. What are the demographic profiles of participants who attend EXCEL?
2. What are the demographic profiles of participants who complete and do not complete EXCEL?
3. Do physiological parameters significantly improve after a 14-week programme of physical activity?

4. What are the trends in the referring practices of health professional surgeries?
5. What type of health professional is most successful in achieving participant adherence?

3.3 Methodology

3.3.1 Data source

The primary data source was the, already existing, programme audit database. Quantitative data sets were extracted, retrospectively from the database. Exercise referral officers were required to complete an electronic data file for all participants who started the programme. For each participant, demographic information was recorded; this included name, address, job status, and referring general practitioner. A health profile for each participant was also completed, this included referral reason, in addition to the measurement and recording of a number of physiological parameters; weight; height; body mass index; lung function; resting heart rate and blood pressure. For participants who attended the programme, a health profile was also completed at weeks 7 (mid-way) and 14 (end point) of the programme. To record and monitor participant data, a fitness programme called FITECH (<http://www.fitech.co.uk/DesktopDefault.aspx?tabid=1>) was used. Data was extracted directly from this programme for period March 2001- March 2003. Some data are missing due to inaccuracies in recording.

3.3.2 Data organisation

Data was exported directly from FITECH into a Microsoft Windows Excel file. The transfer of data from FITECH to Excel produced data in a one person per column format. This was an inappropriate format SPSS (statistical package for Social Sciences) for windows, which operates on a one person per row format. SPSS permits flexibility for data categorisation and analysis, and therefore on this basis a decision was made that SPSS would be the most appropriate analysis programme. Therefore the data was organised into an appropriate, one person per row, format prior to transfer into SPSS (version 10).

3.3.2.1 Categorical data – demographic profile

Demographic information constituted predominantly categorical data; this data was therefore “coded” (i.e. numerical values were assigned to reflected the categorical variables). In total nine participant profiles were “coded”. These included; year of referral; gender, postcode; name of surgery; type of health professional; job-status; referral reason; age and whether the participant adhered to the programme or not (adherence was denoted on the basis that the participant had a health profile recorded at the start and end of the programme).

3.3.2.2 Numerical data – health profile

With the exception of referral reason all data recorded for the health profile (e.g. weight; height; body mass index; lung function; resting heart rate and blood pressure) was numerical data.

3.3.3 Statistical analysis and descriptive statistics

Statistical analysis was carried out using SPSS for windows. Changes in physiological parameters from pre to post exercise programme were compared. Data did not meet parametric assumptions; therefore, a Wilcoxon signed ranks test was used. A description of starters and adherers was executed via the descriptive statistics function in SPSS.

3.4 Results

3.4.1. Profile of participants who commenced the programme

The first objective of the study was to explore the demographic characteristics (age; gender; referral reason and job status) of participants who started the EXCEL ERP and the reasons for referral of participants. Over a two-year period (March 2001- March 2003) 985 people started the ERP. Females comprised 64% (n=614) of the participant population, in comparison males that comprised 36% (n=344) of the population. The age of participants starting the programme was wide ranging. Age category 46-60 years was the most popular category that comprised 36% (n=356) of the total population. The youngest (18-30) and oldest (71+) age groups comprised the lowest categories. They accounted for 5.7% and 12.7% of the total population, respectively. Almost equal number of participants comprised age categories 31-45 years (20.7%; n=204) and 64-70 years (23.2%; n=229). Table 3.1 also describes the participant base in consideration of referral reason. Participants were referred to the programme for wide ranging reasons; however, some referral reasons were more prevalent than others. Overweight was the most common referral category (37% of total population; n=366), followed (with a large margin) by controlled hypertension (12.6%; n=124) and thirdly by individuals who had previously suffered a coronary event and subsequently undertaken a programme of cardiac rehabilitation (9.7%; n=96). Just over a third of the population were retired (39%; n=384). Over half of the population (63%; n=625) did not work, in comparison to 27% (n=360) who worked in either full or part-time occupations.

Table 3.1. Profile of participants starting and subsequently completing the programme

	Participant base		Adherence	
	(n)	%	n	% relative to sample size at baseline
Total	985	100	348	
Gender				
Male	366	37.2	152	41.5 (152/366 *100)
Female	614	62.3	195	31.8 (195/614)
Missing data points	5	.5	1	
Age group (years old)				
18-30	56	5.7	13	23.2 (13/56*100)
31-45	204	20.7	45	22.1
46-60	356	36.1	129	36.2
64-70	229	23.2	97	42.4
71+	126	12.7	60	47.6
Missing data points	14	1.4	4	
Referral Reason				
Obesity/overweight	366	37.2	123	33.6
Controlled Hypertension	124	12.6	47	37.9
Post MI following cardiac rehabilitation/CaBG	96	9.7	60	62.5
Anxiety/Stress/Depression	85	8.6	23	27.1
Inactive	72	7.3	19	26.4
Diabetic (Type II medicated)	52	5.3	24	46.2
Family History of CHD	51	5.2	16	31.4
Angina	41	4.2	20	48.8
Post CABG	20	2	9	45
Hyperlipidaemia	16	1.6	5	31.3
Other	27	2.7	10	37
Missing data points	55	8.6	12	
Job Status				
Retired	352	35.7	154	43.8
Fulltime	200	20.3	69	34.5
Unemployed	155	15.7	36	23.2
Part-time	106	10.8	24	22.6
Housekeeper	54	5.5	29	53.7
Medically retired	32	3.2	11	34.4
Signed off work	32	3.2	12	37.5
Other	14	1.4	3	21.4
Missing Data points	40	.8	10	25

(Other =; Peripheral Vascular Disease; Osteoarthritis; Smoker; Diabetic (Type I); Asthma; Arthritis. Individually they comprise <1% of participant base)

(Other = <1% of participant base; Student; Self-employed; Voluntary work; Carer)

3.4.2 Profile of participants who completed the programme

Adherence to the programme (over 14 week period) during 2001-2003 was 35% (n=348). A greater number of male participants completed the programme 44% (n=150) than female participants 31.8% (n=198). A trend in adherence was observed with age. Examination of age data in table 3.1 indicates progressively increasing adherence rates to the programme with increasing age. In this sense, age category 18-30 years exhibited the lowest adherence rate of 23.2% (n= 13) in contrast to age category 71+ who exhibited the highest percentage adherence at 47.6% (n=60).

A diverse spread of adherence was observed, when examined in relation to referral reason. Adherence ranged from 31% (n=5) for participants referred with hyperlipidaemia to 63% (n=60), for participants referred following a cardiac rehabilitation programme. Adherence for the most popular referral category, overweight, was 34%. A similar spread of adherence was observed with job status, statistics ranged from 23% adherence for the working part-time category to 54% for the “housekeeper” category. The category of retired participants yielded a 44% adherence statistic and the full time category yielded an adherence figure of 35%, which was 12% higher than the part time category at 23%.

3.4.3 Influence of health professional on ERP success

Between 2001-2003, 74% (n=727) of participants who commenced the programme were referred by a general practitioner. Nineteen percent (n=182) of

participants that commenced the programme had been referred by a practice nurses (19%,) and five percent (n=47) by a cardiac rehabilitation nurse. However, adherence rates were highest for participants referred by cardiac rehabilitation nurses (57% adherence rate). Participants referred by practice nurses had a 45% adherence rate compared to participants referred by General Practitioners, who had an adherence rate of 32%.

Table 3.2 Referral numbers, by health professionals and subsequent adherence to the programme (other = Health visitor; Locum; Community Dietician)

	Participant base		Adherence	
	(n)	%	n	% relative to original sample size
Total	985	100	348	
Health Professionals				
General Practitioner	727	73.8	230	31.6 (230/727*100)
Practice Nurse	182	18.5	82	44.3 (82/182*100)
Cardiac Rehabilitation Nurse	47	4.8	27	57.4 (27/47*100)
Other	5	.5	1	20 (1/5*100)
Missing data points	24	2.4		

3.4.4 Referral rates by health professionals

For organisational purposes, referral rates by health professionals have been organised into six categories, ranging from 1-10 participants to 51+ participants (see table 3.3). Presenting the data in this way also permitted an understanding of the trends in referral from the various referring sites. Fifty surgeries, from a possible 53, that were registered with the programme, chose to refer participants over the two-year period. There was a large degree of variance in the number of participants that each practice referred. For example, twenty surgeries each referred between 1-10 participants within the 2-year period (2001-2003). In contrast, two surgeries each referred >51 participants in the two year period. In this sense two surgeries referred a total number of participants (n=110) that was greater than the combined number of participants referred by twenty surgeries (n=87).

Table 3.3 Distribution of number of participants referred by surgery

Number of participants referred	Number of surgeries	Total number of participants referred	% of overall sample size (n=985)
1-10	20	87	8.8 (87/985*100)
11-20	17	254	25.7 (254/985*100)
21-30	6	162	16.4 (162/985*100)
31-40	5	181	18.3 (181/985*100)
41-50	3	129	13.1 (129/985*100)
51+	2	110	11.1 (110/985*100)
Missing		62	6.2 (62/985*100)

3.4.5 Physiological change during an ERP

Table 3.4 indicates median scores for physiological parameters pre and post intervention. The change in median scores reveals that systolic and diastolic blood pressure had decreased by 4mmHg and 3mmHg, respectively, over the 14-week exercise period. These changes, although small, were shown to be statistically significant ($p < 0.05$). Although statistically significant, the health benefits that would accrue from such small physiological changes are questionable; however, the trends seen are all in a positive direction. Resting heart rate and body mass index showed a negligible decrease post intervention.

Table 3.4 Median scores for a range of physiological measures pre and post intervention

	Median Score (Pre)	Median Score (Post)	Interquartile Range (Pre)	Interquartile Range (Post)
Resting Heart Rate (Bpm)	70.50	69.00*	15.75	16.00
Systolic Blood Pressure (mmHg)	138.00	133.50*	26.00	22.00
Diastolic Blood Pressure (mmHg)	82.00	79.00*	14.00	13.00
Weight (kg)	85.00	84.50	21.00	20.87
Body Mass Index (kg/m ²)	30.41	29.99*	7.04	7.25
Peak Flow	430.00	450.00	149.50	135.00
Forced Vital Capacity	2.88	2.84	1.14	1.18
Forced Expiratory volume	2.41	2.40	.95	.94

*Significant ($p < 0.05$)

3.5 Chapter Discussion

The primary aim of this study was to describe the participant base of EXCEL, and to examine the outcomes of the programme in terms of behaviour change (adherence to the intervention) and health improvement (change in physiological parameters). The most common population sub-groups (from pre-defined categories of gender; age; referral reason and job status) at programme commencement were described as female (n=614); aged between 46-60yrs (356); overweight (n=366); retired individuals (n=384). Sixty three percent of participants who commenced the EXCEL ERP were female. Such results were comparable to an ERP situated in inner city London whereby it was reported that male participants who commenced the ERP were outnumbered by female participants by two to one (Smith, 1996). Female participants accounted for 79% of participants who commenced an ERP situated in Stockport (Lord and Green, 1995).

A third of participants (35%; n=348) who commenced the EXCEL ERP (i.e. attended a pre-exercise assessment), subsequently completed (i.e. attended a final assessment at 14 weeks). This adherence rate is slightly higher than that reported by similar, non-experimental trials. For example, Tai *et al.* (1999) reported an adherence rate of 22% and Lord and Green (1995), reported a 25% adherence rate to a 10-week programme of activity. Results from experimental trials reported slightly higher adherence rates than the EXCEL ERP. For example, Taylor *et al.* (1998) reported an adherence rate, in the experimental group; of 41% and Harland *et al.* (1999) reported an adherence rate of 61%.

Results indicated that some population sub-groups benefit from EXCEL more than others. From each descriptive category, male participants; aged 71+; who had previously completed a programme of cardiac rehabilitation and were retired exhibited the highest percentage adherence for each category. Age related improvements of adherence are consistent with results obtained from previous studies (Tai *et al.*, 1999; Lord and Green; 1995). Although the proportion of females attending an initial assessment was greater than males, a higher percentage of male participants completed the programme. It is unclear from this data why men adhere more readily than women do. This may be due to the type of conditions men are predominately being referred for. It is not surprising that cardiac rehabilitation groups adhere well as they have usually, already undergone tertiary-based exercise programmes and may have already formed a peer group before entering the ERP. In addition, with a critical life event such as a cardiac episode, the incentive to exercise may be much higher in the individual – and hence the potential for behaviour change and adherence is much higher. The processes that under-pin the cardiac rehabilitation process need to be understood and replicated for other groups entering the ERP, which are much less likely to adhere such as the overweight or those with a mental illness. Adherence to the ERP is variable across age. The older age groups, post-retirement are most likely to attend and adhere. This may be for several reasons; firstly, the ERP classes may be best suited to the exercise requirements of the older age groups and may not be very exciting, relevant, or interesting enough to younger people. Secondly, the time demands of younger people (work and study) may prevent them getting to class as often. Thirdly, the interest in health maintenance may be less important to the young.

Although improvements in health parameters were negligible, trends were in the direction of health improvement. Body mass index, resting heart rate and blood pressures, both systolic and diastolic were the only parameters to indicate improvements that reached statistical significance (table 3.4). Currently, physiological parameters are the only health outcomes that are monitored. It is likely that physiological parameters represent only one domain of health outcomes that participants experience because of programme participation.

The data obtained outlined the referring trends of surgeries and professionals, and the subsequent adherence of participants referred from them. Although general practitioners referred 74% of the participants who commenced the programme, participants referred by a cardiac rehabilitation nurses exhibited the highest percentage adherence at 57%. Previously, studies have reported a four-fold difference in completion rates of participants referred by different general practitioners (Smith, 1996).

Between March 2001 and March 2003, two surgeries, alone, referred 110 participants to the programme. This accounted for 11% of total referrals over this period. In contrast, over the same period, twenty surgeries altogether referred 87 participants to the programme. This accounted for 9% of the participant base. This result indicated that two surgeries alone referred more participants than 20 surgeries added together and is suggestive of an inefficient targeting strategy by programme stakeholders.

The data outlined above describe what population the programme is targeting, the trends in referral rates, and whom the programme is most successful for in terms of adherence and health outcomes. In terms of the evaluation process this data alone, despite its importance, does not provide an insight as to why these trends are occurring.

The data obtained from this chapter will assist service providers in understanding exactly whom they are providing the service for and which groups benefited most (in terms of adherence and physiological outcomes). This data may assist service providers in considering programme effectiveness and future targeting strategies. It is essential however that this data is supplemented with some explanatory studies that examine the process of the programme.

CHAPTER 4

PARTICIPANT PERSPECTIVES OF THE EXERCISE REFERRAL PROCESS

4.1 Chapter Introduction

The key findings obtained from study one clearly demonstrated that, in terms of health behaviour change and health gain, population sub-groups experienced the ERP in different ways. The data presented in study one does not; however, indicate the reasons why some population subgroups adhered more than others and why some groups exhibited greater health gain.

Understanding the barriers to adoption of exercise should be the first step for interventions that aim to promote exercise (Drew, 1996). Barriers to physical exercise in older participants are reported as being mainly internal to the individual and psychological in nature (O'Brien Cousins and Janzen, 1998). Safety and limited time are barriers that have been identified in the older population (O'Brien Cousins, 2000; Finsch, 1997). Additional barriers include not feeling the sporty type; lack of medical supervision (O'Brien Cousins, 2003); physical health problems (Cohen-Mansfield *et al.*, 2003; Booth *et al.*, 2002 and Godin *et al.*, 1994) and cost (Booth *et al.*, 1997).

Advice from a health professional is thought to be an important factor in a participant's decision to adopt exercise (O'Neill and Reid, 1991). A questionnaire survey administered to a randomly selected sample of insufficiently active Australian adults (n=2298), aged 18-78 years, reported that health professionals were preferred sources of advice for exercise (Booth *et al.*, 1997). A pleasant and energetic leadership style that is characterised by a high level of social interaction; and a group environment that is comfortable, relaxed,

and interactive enhanced enjoyment of a single session of exercise and exerted a positive influence upon intention to continue with the exercise (Fox *et al.*, 2000). Individually tailored exercise advice (Keele-Smith and Leon, 2003; Kreuter *et al.*, 1999) that accounts for personal exercise preferences (in terms of social opportunity, cost, setting and professional involvement) (Cohen-Mansfield *et al.*, 2004) can also result in greater levels of exercise. Exercise behaviour is potentially reinforced when participants perceive and enjoy such benefits (Sharpe *et al.*, 1997).

The factors previously outlined are factors that influence exercise behaviour in general populations. Five studies have investigated, specifically, participants' experiences and perspectives of the exercise referral process (Crone *et al.*, 2005; Wormald and Ingle, 2004; Stathi *et al.*, 2003; Crone-Grant and Smith, 1999; Singh, 1997). During the early stages of the exercise referral process participants expressed feelings of apprehension at commencing a programme of exercise. Participants felt intimidated by the equipment within the gym environment (Wormald and Ingle, 2004) and in addition articulated feelings of self-consciousness, lack of confidence in body image (Crone-Grant and Smith, 1999), embarrassment, fear of injury, and concerns about exercising in a leisure centre with a young profile of clientele (Stathi *et al.*, 2003).

Advice from a health professional was a reason for participants to start an ERP (Stathi *et al.*, 2003). Stathi *et al.*, (2003) have previously reported that professional help and support was important for helping participants to overcome initial barriers to exercise and to become accustomed to an unfamiliar

environment. Social support both from exercise instructors and family and fellow exercisers has been identified as an important component of the participant experience during an ERP (Wormald and Ingle, 2004; Harcastle and Taylor, 2001). A positive approach and attitude from exercise professionals was important both, during the early phases of the ERP (Stathi *et al.*, 2003) and during the latter stages (Wormald and Ingle, 2004). Wormald and Ingle (2004), reported that the personalised, supportive and supervised nature of the intervention encouraged participants to adhere to the intervention.

Broad ranges of outcomes that are of personal importance to participants have been identified in studies to date. Such outcomes include improvements in; physiological indices, mood and well-being (Wormald and Ingle, 2004; Stathi *et al.*, 2003); social integration; personal development and ability to perform daily functional tasks (Stathi *et al.*, 2003; Crone-Grant and Smith, 1999; Harcastle and Taylor, 2001).

In summary, there are a small number of studies that have examined participant perspectives of the exercise referral process in UK populations. Such studies have advanced understandings of participants overall experience of an ERP and more specifically factors that influence decisions to adopt and maintain exercise. The predominant methodologies adopted to elicit participant perspectives have been qualitative. The methods utilised have included focus groups (Wormald and Ingle, 2004; Crone-Grant and Smith, 1999) interviews (Harcastle and Taylor, 2001; Singh, 1997) or a combination of both (Crone *et al.*, 2005; Stathi *et al.*, 2003). Wormald and Ingle (2004); Stathi *et al.* (2003); Crone-Grant and Smith

(1999) and Singh (1997) have utilised qualitative methodologies with participants that are at different stages of the exercise referral process. There are only two studies to date that have interviewed the same sample of participants as they have progressed through the ERP (Crone *et al.*, 2005; Hardcastle and Taylor, 2001). Hardcastle and Taylor (2001) interviewed the same sample of participants at the beginning, mid and end stage of the ERP. Crone *et al.* (2005) administered pre and post intervention focus groups to exercise referral participants. There is no study to date that has examined exercise behaviour post-programme, and as a consequence, limited understanding of the exercise patterns of participants after the referral period has ended. Process based models of exercise behaviour change such as “The Transtheoretical model of behaviour change” (Marcus and Simkin, 1994) and “The Natural History Model of Exercise” (Sallis and Hovell, 1990) demonstrate the dynamic and complex nature of exercise behaviour (Buckworth, 2000). It is likely, therefore, that different determinants will influence behaviour at different time points during the exercise referral process.

4.2 Study Aims

This study aimed to develop an understanding of the experience of an ERP from the participants’ perspective. Specifically to determine the factors that influenced exercise behaviour at critical stages of the exercise referral process. The objective was to assist service providers in improving adoption of and adherence to EXCEL.

4.3 Research Questions

The research questions were as follows:

1. What were the barriers to behaviour change, for participants, prior to attending the ERP?
2. What factors influenced participants decisions to attend the ERP in the first instance i.e., exercise adoption.
3. What factors influenced participant's decisions to adhere to the ERP (complete the 14-week intervention).
4. What benefits do participants experience as a result of programme adherence?

4.4 Method

A descriptive approach to the study of participants' experiences of an ERP was sought. Context, depth, and understanding were key factors of importance for answering the research questions of this study. Therefore, on this basis a qualitative method was utilised.

4.4.1 Methodology

The main research method used was the semi-structured interview (Patton, 2002). This method is extensively used in qualitative research (Denzin and Lincoln, 1994) and is one that allows "*an interactional exchange of dialogue*" (Mason, 2002, p.62) between the researcher, and the participant.

4.4.2 Interview questions and topic guide

In order to ensure that the same basic line of enquiry was explored with each participant a thematic approach to the interview was taken (Mason, 2002, p.62). A series of pre-determined questions, in the form of an interview guide (Patton, 2002) was used (see figure 4.1 and 4.2 for example questions). Gaskell (2000) suggested that interview topics should be based upon a review of the established literature, preliminary research findings, suggestions made by experienced colleagues and researcher intuition. These factors considered, the topics and questions that were incorporated were based upon; knowledge and experience of the EXCEL ERP; a review of the established literature; and preliminary research findings. This study was conducted two years into the evaluation process. During

the two-year period prior to this study, the researcher had worked as an administration officer on the programme and as an exercise instructor within one of the referral venues. In addition, the researcher had also completed a nationally recognised “exercise referral” qualification and attended numerous conferences that focused on exercise referral. The main issues that were explored were in accordance with the key research questions.

A fundamental assumption of qualitative research is that the participants’ perspective of the phenomenon unfolds as the participant views it (as opposed to how the researcher views it) (Marshall and Rossman, 1995). This was an important aspect of the current study, and therefore flexibility in the interview guide was exercised. This allowed the participants to structure their responses how they wished and facilitated the development of additional, sometimes unexpected issues.

1. Why have you been referred to the programme?
2. Can you describe your state of health?
3. How do you expect the scheme to change your health?
4. What are your goals?
5. Why do you want to be more physically active?
6. Have you attempted to become more physically active in the past year? If yes, why did you stop?
7. How did you feel when your GP advised you to become more active?
8. Do you have any worries with regard to taking up the programme?

Figure 4.1 A sample of interview questions that were administered in the initial interview with a participant.

1. How has the programme changed your health?
2. What do you think are your main achievements?
3. What factors helped you adhere to the programme?
4. Are there any aspects of the programme process, location, exercise, or people that have made the programme a negative experience?
5. What is the importance of the social aspects of the programme?
6. What is the importance of the physiological measures that have been taken?

Figure 4.2 A sample of interview questions administered at the programme completion interview.

4.4.3 Participants and sampling methods

The sample for this study was drawn from participants engaged in the ERP between January 2003 and August 2003. Twelve community-living participants with age ranges from 46 years - 67 years volunteered to take part in a semi-structured interview on at least two occasions whilst engaged in the ERP. Participants had been referred to the programme for a range of reasons.

4.4.4 Procedure

All participants were interviewed on at least two occasions whilst enrolled on the ERP. The interview method is dependent upon a participant's ability to interact, verbalise, conceptualise and remember information (Mason, 2002). In this sense, tracking interviews were used as a means to relax participants and for the researcher to clarify concepts and understanding of key issues. The timing and number of interviews varied for each participant. Participants were approached following their initial assessment with the exercise referral officer. The aims of the research were explained and participants were asked if they would be willing to take part in the study. All of those approached agreed to take part. Following reassurances of patient confidentiality and anonymity, participant's willingness to engage in the study was obtained via written consent. The interviewee determined the date, time, and venue of the meeting. In most cases, an initial interview took place immediately after the initial assessment. Interviews were conducted on site of the exercise programme in a private area, free from interruptions and distractions. The interviews were conducted in a relaxed and informal manner. Interviews lasted between twenty and sixty minutes.

4.4.5 Data analysis

Interviews (n=32) were recorded using a cassette recorder and were subsequently transcribed verbatim by the primary researcher (Rebecca Graham). Transcripts and audio recordings formed the medium for analysis of data. This enabled detailed inspection of critical points of the conversations (Silverman, 2000) and avoided inaccurate recollection of conversations (Flick, 2002).

The objective of data analysis was to elicit participant experiences of the ERP, building an organised system of categories from the unstructured data (Côté *et al.*, 1995, p.6). Using the interview guide as a “*descriptive analytical framework*” (Patton, 2002, p.376) category labels were applied to interview transcripts using a “cut and paste”, procedure, as outlined by Krane (1997). This is a process whereby quotations from interview transcripts were copied and grouped together into a new word document with similar quotations. Data were coded according to factors that were deemed relevant to the key research questions. Close reading of the text allowed expansion of the themes and incorporation, where appropriate, of sub-themes (Miles and Huberman, 1994). The interview guide increased comparability of the data (Flick, 2002). In this sense, a combination of inductive analysis; discovering patterns, themes and categories, and deductive techniques; analysis according to an existing framework were used to generate categories, themes and patterns (Marshall and Rossman, 1995).

4.4.6 Presentation of the data

Findings have been presented visually using a hierarchical tree diagram as outlined by Miles and Huberman (1994). The ordering principle of the display is the general conceptual themes developed in accordance with the key research questions. An assumption of qualitative analysis is that knowledge is socially constructed. In this sense, in addition to researcher analysis and interpretation themes were described using direct quotes from respondents, allowing participants to speak for themselves (Krane *et al.*, 1997). Participant quotations have been colour coded according to what stage of the ERP that they were at when responding (see figure 4.3). In addition, a quote is preceded by a short code that enables the reader to determine; the participant number; gender; the interview number with the participant (i.e. the quote may have been extracted from the first, second, third or in some instances fourth interview with the participant). The corresponding line number of the transcript from which the quote has been extracted is included (figure 4.4).

RED TEXT = INITIAL PHASES OF THE EXERCISE PROGRAMME
GREY TEXT = DURING THE EXERCISE PROGRAMME
GREEN TEXT = END STAGES OF THE EXERCISE PROGRAMME
BLUE TEXT = POST EXERCISE PROGRAMME

Figure 4.3 Key for determining the participant's stage of progress through the programme when responding.

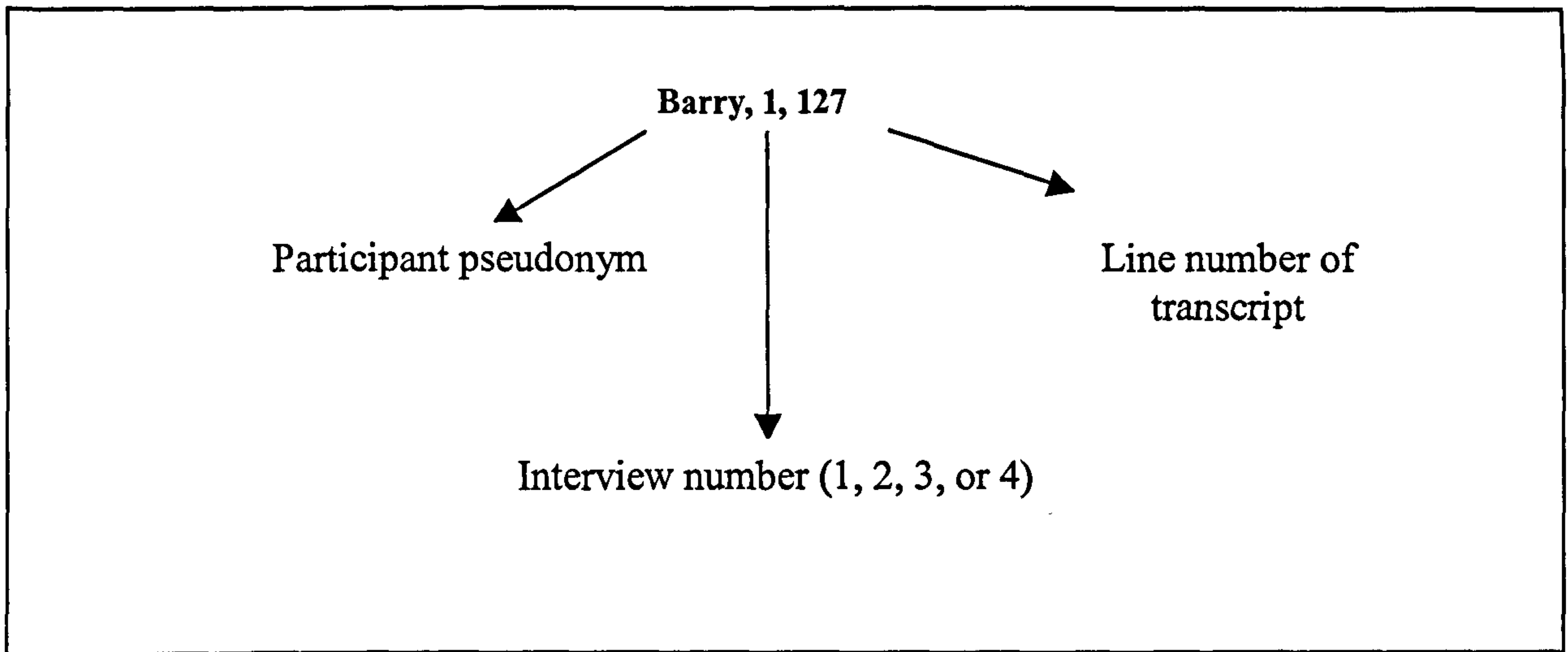


Figure 4.4 Key for understanding the code preceding participant's quotes.

4.5 Results

Findings of the study are structured and presented in accordance with the key research questions outlined on page 75. In this sense the; barriers to exercise adoption; factors influencing participants decision to start the EXCEL ERP; factors influencing participants decision to adhere to the EXCEL ERP and the key health benefits of importance to participants are outlined. Figures 4.5 through 4.8 present an overview of the factors that emerged from raw data collection. This is then followed by a descriptive summary of the key factors of importance from each section.

Table 4.1 Participant details

	Gender	Age	Referral Reason	Interviews
Pauline	Female	64	Coronary Obstructive Pulmonary Disorder.	Initial, 14 and post programme
Iain	Male	68	Overweight Raised blood pressure	Initial, 14 week and post programme
Barbara	Female	57	Overweight Inactive	7 week, 14 week, and post programme.
Cathy	Female	58	Cardiovascular attack	Initial, post programme
Christine	Female	67	Post cardiac rehabilitation	Initial, 14 week and post programme
Dave	Male	64	Post Myocardial Infarction	14 week, post programme
Lynne	Female	59	Raised blood pressure	7 week and 14 week
Alan	Male	57	Hypertension	Initial, 10 weeks and post programme
Julie	Female	46	Raised cholesterol, raised blood pressure	Initial, 14 week and post programme
Edward	Male	56	Raised cholesterol	Week 11, post programme
Susan	Female	66	Raised blood pressure Raised Cholesterol	Initial, 14 and post programme
Paul	Male	77	Hypertension Stroke	Initial and 7 week

BARRIERS

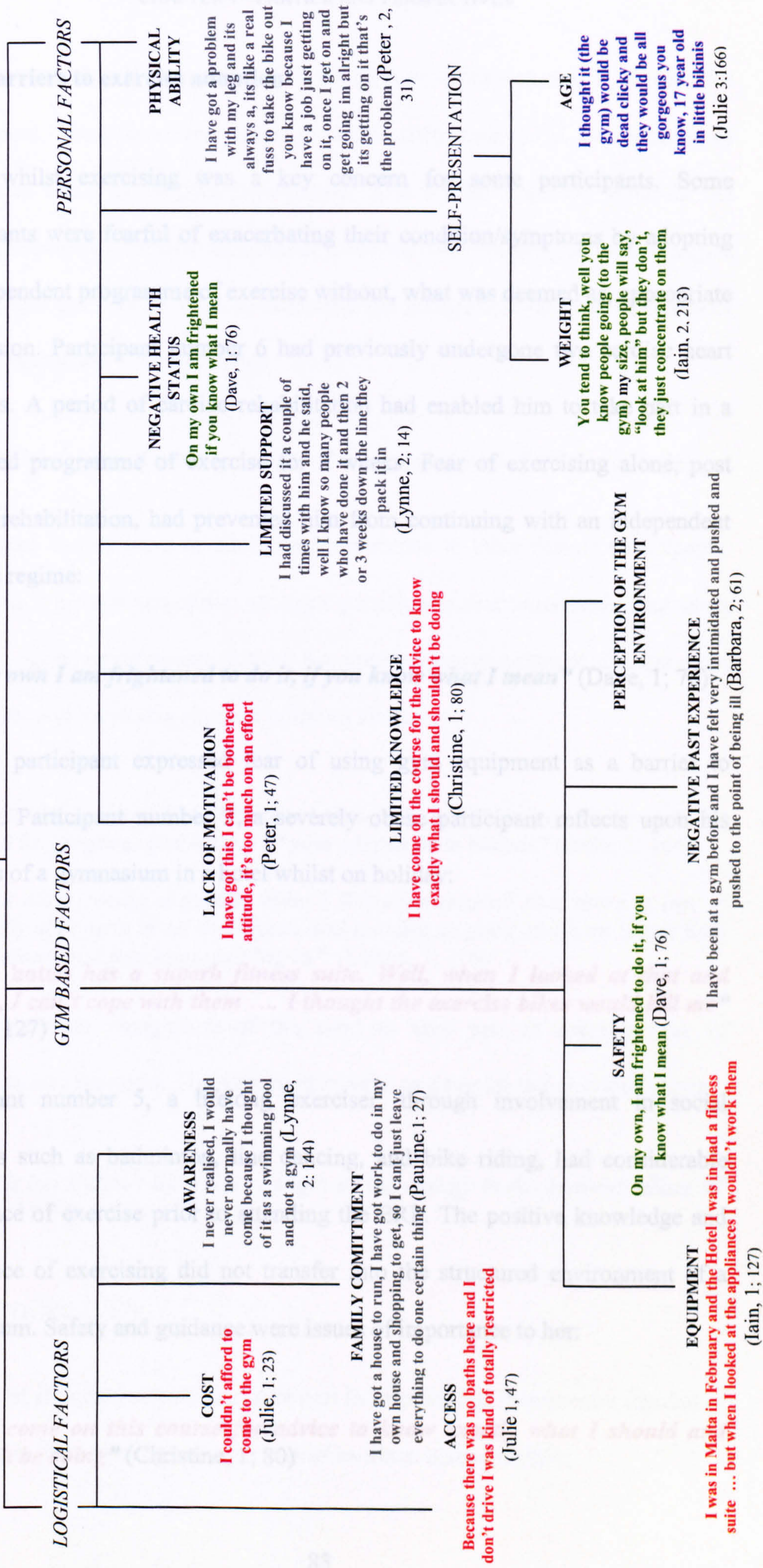


Figure 4.5 Hierarchical tree diagram representing barriers to initiating an ERP

4.5.1 Barriers to exercise adoption

Safety whilst exercising was a key concern for some participants. Some participants were fearful of exacerbating their condition/symptoms by adopting an independent programme of exercise without, what was deemed as, appropriate supervision. Participant number 6 had previously undergone two cardiac heart bypasses. A period of cardiac rehabilitation had enabled him to take part in a structured programme of exercise for 8 weeks. Fear of exercising alone, post cardiac rehabilitation, had prevented him from continuing with an independent exercise regime:

“On my own I am frightened to do it, if you know what I mean” (Dave, 1; 76)

Another participant expressed fear of using gym equipment as a barrier to exercise. Participant number 2, a severely obese participant reflects upon his thoughts of a gymnasium in a hotel whilst on holiday:

“It (the hotel) has a superb fitness suite. Well, when I looked at that and thought, I can’t cope with them I thought the exercise bikes would kill me” (Iain, 1; 127)

Participant number 5, a lifelong exerciser, through involvement in social activities such as badminton, line dancing, and bike riding, had considerable experience of exercise prior to attending the ERP. The positive knowledge and experience of exercising did not transfer into the structured environment of a gymnasium. Safety and guidance were issues of importance to her:

“I have come on this course for advice to know exactly what I should and shouldn’t be doing” (Christine, 1; 80)

Self-presentation, whilst exercising in the gym environment, was a concern for participants. Such concerns were predominantly related to perceptions of appearance whilst in the gym environment. This barrier was a key issue for the female participants. Participant number three had previously exercised in a gym environment but was nervous of attending the programme because of her self-perception that she was overweight.

“I felt a bit nervous of coming because I am so overweight” (Barbara, 1; 74)

Age related factors were of additional importance to other female participants. There was a general perception amongst participants that individuals exercising within a gym environment would be predominantly younger in age than themselves and inevitably (in their opinion) slimmer:

“I thought the gym would be like that I thought it would be dead clicky and they would all be gorgeous you know, 17 year olds in little bikinis” (Julie, 2; 166)

“Being a oldie really, a golden oldie I felt embarrassed that there is lots of beautifully slim girls in all their lycra and looking so good and here is me, fatty coming along and you know joining in” (Lynne, 1; 109)

Despite personal recognition of the need to take part in exercise lack of motivation was recognised by some participants as a barrier to behaviour change.

“I knew it but I didn’t have the strength or the energy to do anything about it” (Barbara, 1; 59)

“I don’t have the will to do it really ... I have got this, I can’t be bothered attitude” (Alan, 1; 47)

The cost of attending a facility to take part in exercise had prevented a number of participants from starting a programme of exercise independently:

“I couldn’t afford to come to a gym, so although it was a nice idea I just couldn’t kind of do it” (Julie, 1; 23)

A number of barriers often clustered together that prevented a participant from starting a programme of exercise. For example, despite a strong desire to start a programme of activity, participant number 7 felt that she could not start a programme of exercise due to the combined issues of cost and limited family support;

“When I look at gyms they are just so expensive and you have to pay 12 months in advance which is beyond us ... my husband was very reluctant, I had discussed it a couple of times with him and he said, I know so many people who have done it and then two or three weeks down the line they pack it in and they have lost all that money” (Lynne, 1; 11)

Figure 4.6 Factors associated with a participant's decision to adopt the exercise programme

ADOPTION

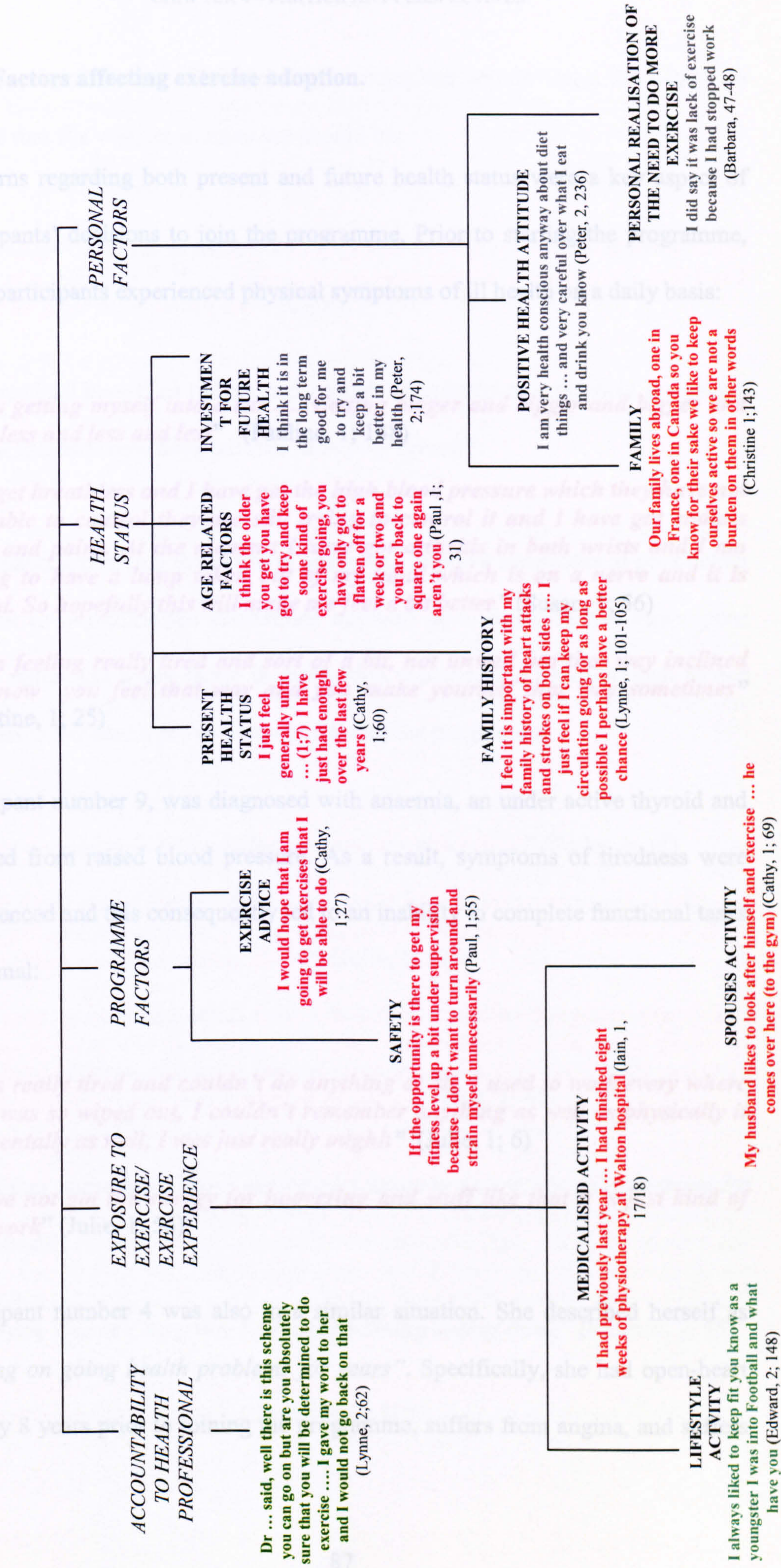


Figure 4.6 Factors associated with a participant's decision to adopt the exercise programme

4.5.2 Factors affecting exercise adoption.

Concerns regarding both present and future health status were a key aspect of participants' decisions to join the programme. Prior to starting the programme, some participants experienced physical symptoms of ill health on a daily basis:

“I was getting myself into a rut Getting bigger and bigger and bigger and doing less and less and less” (Pauline, 1; 148)

“I do get breathless and I have got the high blood pressure which they have not been able to control they are still trying to control it and I have got endless aches and pains. At the moment I have got arthritis in both wrists and I am waiting to have a lump taken out of my hand which is on a nerve and it is painful. So hopefully this will make me feel a bit better” (Susan, 1; 56)

“I was feeling really tired and sort of a bit, not unwell but that way inclined you know you feel that way and you make yourself that way sometimes” (Christine, 1; 25)

Participant number 9, was diagnosed with anaemia, an under active thyroid and suffered from raised blood pressure. As a result, symptoms of tiredness were experienced and this consequently led to an inability to complete functional tasks as normal:

“I was really tired and couldn't do anything at all, I used to walk every where and I was so wiped out, I couldn't remember anything as well as physically it was mentally as well, I was just really oughh” (Julie, 1; 6)

“I have not got the energy for hoovering and stuff like that it is just kind of hard work” (Julie, 1; 56)

Participant number 4 was also in a similar situation. She described herself as *“having on going health problems for years”*. Specifically, she had open-heart surgery 8 years prior to joining the programme, suffers from angina, and suffers

from menieres disease. The inability to complete certain tasks, led Cathy to believe that she was not as fit as she should be:

“When I get up in the morning, I have got no energy it takes me a while to get going of a morning^(1; 12) ... Saturday we went out for a walk and I just feel I should be fitter than what I am” (Cathy, 1; 17)

She described herself as having had enough of experiencing physical symptoms of ill health and some days felt like “*dumping herself*”.

Participants articulated the desire to attempt to improve symptoms of poor health in order to overcome the restrictions imposed upon them. In this sense, poor health status was a key factor in motivating somebody to seek/act upon advice from his or her health professional and attend the programme:

“Just to be able to do some activities without feeling tired” (Cathy, 1; 17)

“Every day kind of feeling better and being able to do more I would just like to get up and carry on, if I say I’m going to do something I would like to be able to finish it without sitting down” (Julie, 1; 52)

“Last year we were at Lake... for our holidays, I would have given anything to walk up some of the mountain trails but you couldn’t so you could go up by chair lift and it was too much even to walk down but if I was fitter I would be able to walk down and that’s what its all about” (Paul, 1; 61)

In addition, some participants expressed a desire to exercise as an investment for future health:

“Anything that can keep me, I am not declining sort of thing” (Edward, 1; 55)

“I don’t want to be sitting in a wheelchair do I in another ten years. I just want to be active and keep going” (Christine, 1; 110)

“I just think it is probably in the long term good for me, to try and keep a bit better in my health, when I have been doing virtually nothing” (Alan, 2; 183)

The desire to improve present and future health status may be related to participants increased awareness of expected, age related, declines in health:

“At 57 ... if I don't do something now” (Barbara, 3; 77)

“I just think that I am not getting any younger obviously and perhaps I should take a bit of heedence and perhaps do something to get me a bit more mobile” (Alan, 1; 30)

“I am 59 and I can even feel now, you know myself starting to stiffen up and if I keep on” (Cathy, 2; 174)

Dave wanted to improve his health status, not necessarily, because he was experiencing symptoms of ill health on a daily basis but because of his previous occurrence of cardiac events:

“I had the cardiac quadruple bypass eight years ago, and then a couple of the grafts blocked up again so I had to go in and have another one^(1;5) With having the first bypass and I thought maybe having to have the second bypass may have been my own fault” (Dave, 2; 18).

Other participants started the exercise programme in order to support their

A family history of disease was also a factor that motivated some participants to adopt (and possibly adhere to the programme). In this sense, participants who spoke of family history were investing for their future health:

mode of exercise also changed, from lifestyle related to structured gym based

“I feel it is important with my family history of heart attacks and strokes on both sides it is very important and also my family line, my grandmother my aunty, my mother all had Alzheimer's and I just feel if I can keep my circulation going for as long as possible I perhaps have a better chance” (Lynne, 1; 101)

“All my family, my parents have died of heart failure or stroke and I thought I don't want to go down that road at my age” (Barbara, 1; 49)

“I am hoping if I can keep on with the exercise it (health) wont go any worse you know, because we have got like a history of arthritis in our (family) my sister has had two hip replacement and her thumb joint, my Mother she needed a hip joint, so there is arthritis in our family, I have got the spondilitis err, and I have noticed I am having problems with arthritis so I am hoping that if I can keep on with this it will keep it at bay you know, which it is supposed to isn't it you know” (Cathy, 2; 175)

Endorsement of the programme may have been facilitated by an interest in exercise from a participants' spouse. For Alan, his wife in particular acted as a source of motivation and encouragement for him:

“My wife pressurises me... “she just encourages me to come you know and she likes to come herself, she agrees with it and thinks I ought to do it, that's it really nothing complicated really she just keeps egging me on I suppose” (Alan, 1; 5)

This participant admitted that the exercise was a chore to him and that he lacked motivation. Without the support of his wife this participant may not have started the programme.

Other participants started the exercise programme in order to support their spouse. Christine, in conjunction with her partner, had led a very active lifestyle. Exercise was a social activity. However, her husband had suffered from bowel cancer and consequently they were forced to stop exercising for a while. Their mode of exercise also changed, from lifestyle related to structured gym based activities. In order to encourage her husband to continue with the activity, she wanted to start again:

“I think probably, maybe I want to get back to a bit of fitness so I can join him to encourage him to keep going as well” (Christine, 1; 128)

The ability to interact in an active way with grandchildren motivated some participants to start the programme:

“I just want to be active and keep going, I have got grandchildren, I want to be happy with them and active with them” (Christine, 1; 111)

“Altogether we have got 13 Grandchildren, we have got 6 young one and I go out with them and I try to keep up with them and take them to the shore and things like that but I get out of breath, well I want to be able to fetch my fitness level down so I can take more exercise with them” (Paul, 1; 43)

“Fitter as well for my grandchild” (Lynne, 2; 90)

Other participants expressed the need to be active in order to maintain their health to care for their spouse:

“I need to do something because I am a carer At the end of the day and I need to be fit for my husband and for my family” (Lynne, 1; 100)

“I have got an invalid husband so I have got to be on the go all the time looking after him as well” (Pauline, 1; 71)

A number of participants attended the programme because of the supervisory nature of the exercise programme. Dave and Paul illustrate this point. Dave as

mentioned previously had cardiac bypass surgery on two separate occasions. He stressed that he enjoyed the cardiac rehabilitation programme because there was supervision at all times:

“Under that thing there was always a nurse there, a fully trained cardiac nurse so they knew how far you can go so if they pushed you a little bit further they had everything there” (Dave, 1; 76)

He requested that his general practitioner refer him to the programme because of an advertisement for the programme in a local shopping centre. This was one

year prior to his actual start date. Whilst waiting for the programme the participant did not try to begin a programme of exercise independently. This is suggestive, based on other comments, that he did not feel safe to do so.

Paul had wanted to start an exercise programme before his general practitioner had referred him to the programme, but was concerned about the limited knowledge a gym instructor may have had about his health status.

“As far as I was concerned I could go to fitness direct or one of them and there is no one there who knows my symptoms or specialises for it whereas at this time I am coming under supervision someone has a rough idea what I am supposed to do or not to do I don’t want to turn around and strain myself unnecessarily because under supervision they can turn around now they can check your blood pressure your heart beat” (Paul, 1; 11)

Some participants felt that they had a responsibility to their health professionals to follow up their referral and engage in the programme.

“I don’t like letting the side down kind of thing you know, is somebody says you have got to go three times per week, I will go three times a week if possible” (Edward, 1; 102)

“He had given me a chance, he had given me the opportunity to help myself and I can’t let him down, I cant let myself down ... I always feel as though I cant let people down” (Barbara, 2; 52)

“First of all Doctor ... said if I send you on this course you are going to carry on with it wont you, it’s a 14 week course, you will carry on and. I gave my word to her (GP) and I would never go back on that” (Lynne, 2; 62)

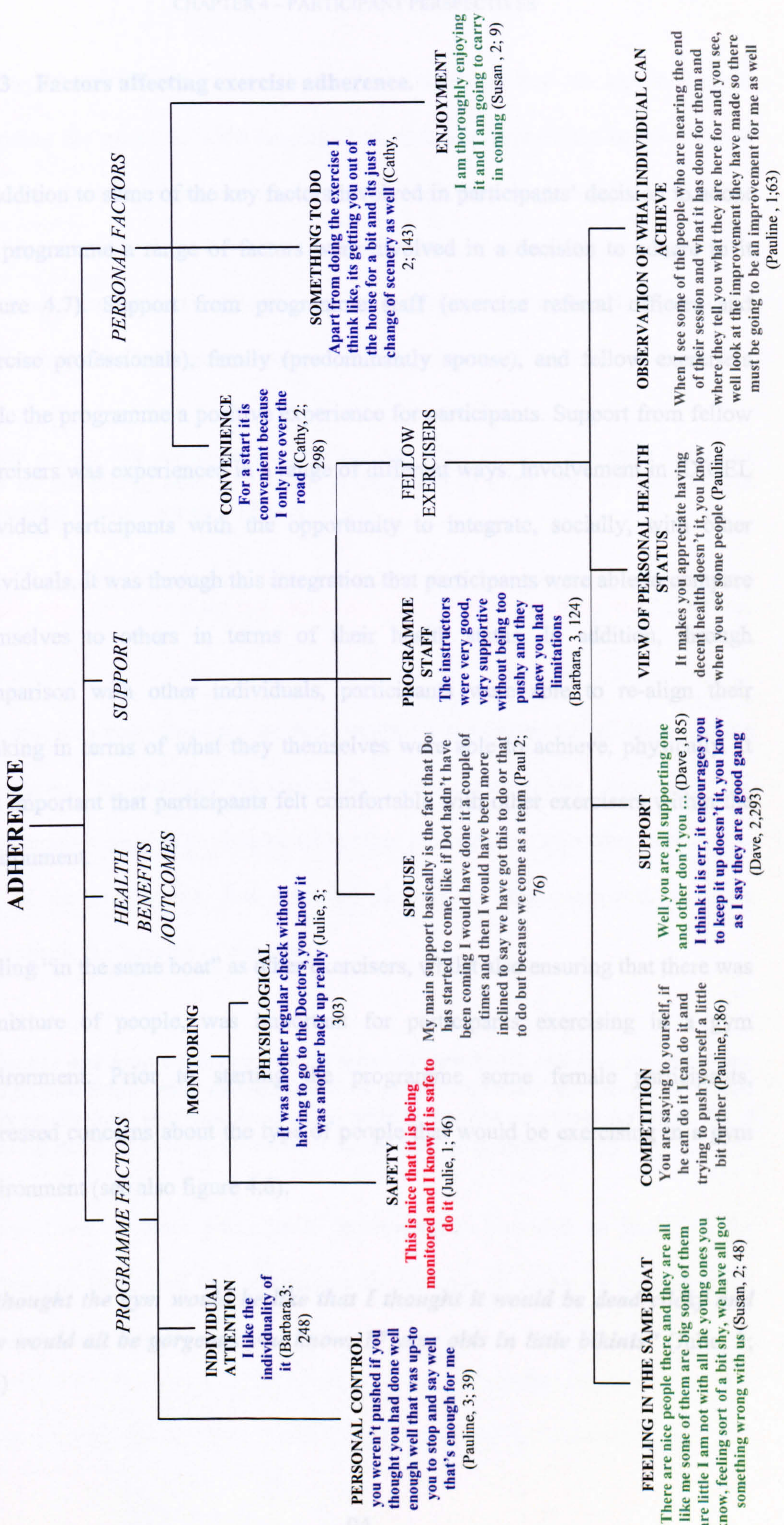


Figure 4.7 Factors associated with a participant's decision to adhere to the exercise programme

4.5.3 Factors affecting exercise adherence.

In addition to some of the key factors involved in participants' decision to adopt the programme a range of factors were involved in a decision to adhere to it (figure 4.7). Support from programme staff (exercise referral officers and exercise professionals), family (predominantly spouse), and fellow exercisers made the programme a positive experience for participants. Support from fellow exercisers was experienced in a range of different ways. Involvement in EXCEL provided participants with the opportunity to integrate, socially, with other individuals. It was through this integration that participants were able to compare themselves to others in terms of their health status. In addition, through comparison with other individuals, participants were able to re-align their thinking in terms of what they themselves were able to achieve, physically. It was important that participants felt comfortable with other exercisers within the environment.

Feeling “in the same boat” as other exercisers, whilst also ensuring that there was a mixture of people, was important for participants exercising in a gym environment. Prior to starting the programme some female participants, expressed concerns about the type of people that would be exercising in a gym environment (see also figure 4.6):

“I thought the gym would be like that I thought it would be dead clicky and they would all be gorgeous you know, 17 year olds in little bikinis” (Julie, 3; 166)

Having started the programme there was a realisation that the type of people attending the gym was wide ranging. Participants expressed the opinion that it was important that there was a mixture of people attending, with some that the participant could relate to in terms of health status or age. Some participants felt encouragement from exercising in a group environment this gave some people an incentive to attend the programme:

“They are all like me some of them are big some of them are little I am not with all the young ones you know, feeling sort of a bit shy, we have all got something wrong with us” (Susan, 2; 48)

“Well it is nice because you have got a mixture of people you have got some people who are older than me and some who are younger than me” (Pauline, 1; 134)

The group exercise provided an opportunity for participants at all stages of the programme to interact. Consequently, some participants beginning the programme were able to observe what other participants (who were nearing the end of the programme) had achieved physically. This confirmed, to some individuals, the benefits of exercise:

“There is one man comes in and he must be nearly 80, you can see his arms, how fit, you know when you see some old people and their skin hangs he is not, he is really firm and you know, you should see the exercises he does. So it proves it must do some good mustn’t it, you know” (Cathy, 2; 199)

Observations of other participants’ achievements provided an incentive for participants beginning the programme to continue in order to improve their personal health status:

“Now when I see some of the people who are nearing the end of their session and what it has done for them and where they tell you what they are here for and you see, well look at the improvement they have made so there must be going to be an improvement for me as well” (Pauline, 1; 63)

“Because you saw people with varying disabilities and all sorts of things and you just thought “Oh if they can do that I can do that” and its just to encourage people really” (Julie, 3; 341)

Participants were able to compare their health to the health of other individuals.

In this sense, participants re-aligned their concerns regarding their own health status and in some instances changed their perspective of the severity of their personal illness:

“I think it opens your eyes really to see that you’re not the only one isn’t it, there is other people and some of them are worse off than you^(1; 53) you go into a place like that and you start saying to yourself, you are feeling sorry for yourself because you have got a bad chest and you cant do this and you cant do that and then somebody comes besides you and they tell you what they have got and you say “Stupid Idiot” they have got worse than you so what are you feeling sorry for yourself” (Pauline, 3; 102)

Some participants were very keen for their spouse to participate in some form of physical activity. In some cases, a participant’s spouse was eligible for the programme and this provided a support mechanism for them:

“My main support basically is the fact that Dot has started to come, like if Dot hadn’t have been coming I would have done it a couple of times and then I would have been more inclined to say we have got this to do or that to do but because we come as a team, because we virtually do everything together as a team we go out drinking, whatever it may be like go for our meals together” (Paul, 2; 76)

“My husband is a keen keep fit person He is the one who encourages me he will motivate me^(2; 46) ... he will give me a kick start every now and then” (Christine, 2; 153)

Beyond the social factors of the programme, the routine of exercising in a structured environment was a reason for participants to “get out of the house”.

“I don't really know to be honest, I don't feel any worse for it, I suppose I just have done my best like I should have done, but I don't know how much weight I've gained” (Alan, 2; 49)

“Apart from doing the exercise I think like, it's getting you out of the house for a bit and it's just a change of scenery as well” (Cathy, 2; 143)

“I am only sitting there watching television and it gives you something to do because apart from going shopping once a week, I go out to my shop of a morning for a paper that's the only exercise I probably get like you know” (Edward, 2; 111)

Physiological monitoring provided a source of motivation for participants to attend the programme. Physiological monitoring, at the beginning, mid-way through and at the end of the programme, may have contributed to the reason why some people adhered because they felt it was a useful health check up:

“It was another regular check without having to go to the Doctors, you know it was another back up really” (Julie, 3; 314)

“It gives you an incentive to come because you wouldn't know about your cholesterol stuff like that until you got measured or weighed or what have you on the machines” (Edward, 1; 177)

The thought of regular assessments provided motivation for some participants:

“They measure your blood pressure and all that kind of stuff, so that is all monitored which is good, so that is checked at the beginning in the middle and at the end it was another regular check without having to go to the Doctors, you know it was another back up really” (Barbara, 3; 314)

Some participants' felt that their health had improved based upon how they felt subjectively (see outcomes – feeling better/functional factors/tiredness/energy) for others, this was not the case. They had not subjectively experienced any improvements for themselves (e.g. Edward and Alan). By viewing the results of the physiological testing participants were able to objectively see that they had improved physiologically:

“I don’t really know to be honest, I don’t feel any worse for it, I suppose it must have done you know I don’t think I have lost much weight by it either, I have not eaten any more because of it ^(2; 37). I suppose its good for me but it’s sometimes not measurable how good or bad it is for you” (Alan, 2; 49)

“And now that I have seen that it is doing me good even though I don’t feel as though it is. It’s great” (Edward, 1; 108)



Figure 4.8 Outcomes of importance to participants enrolling in the E33P

OUTCOMES

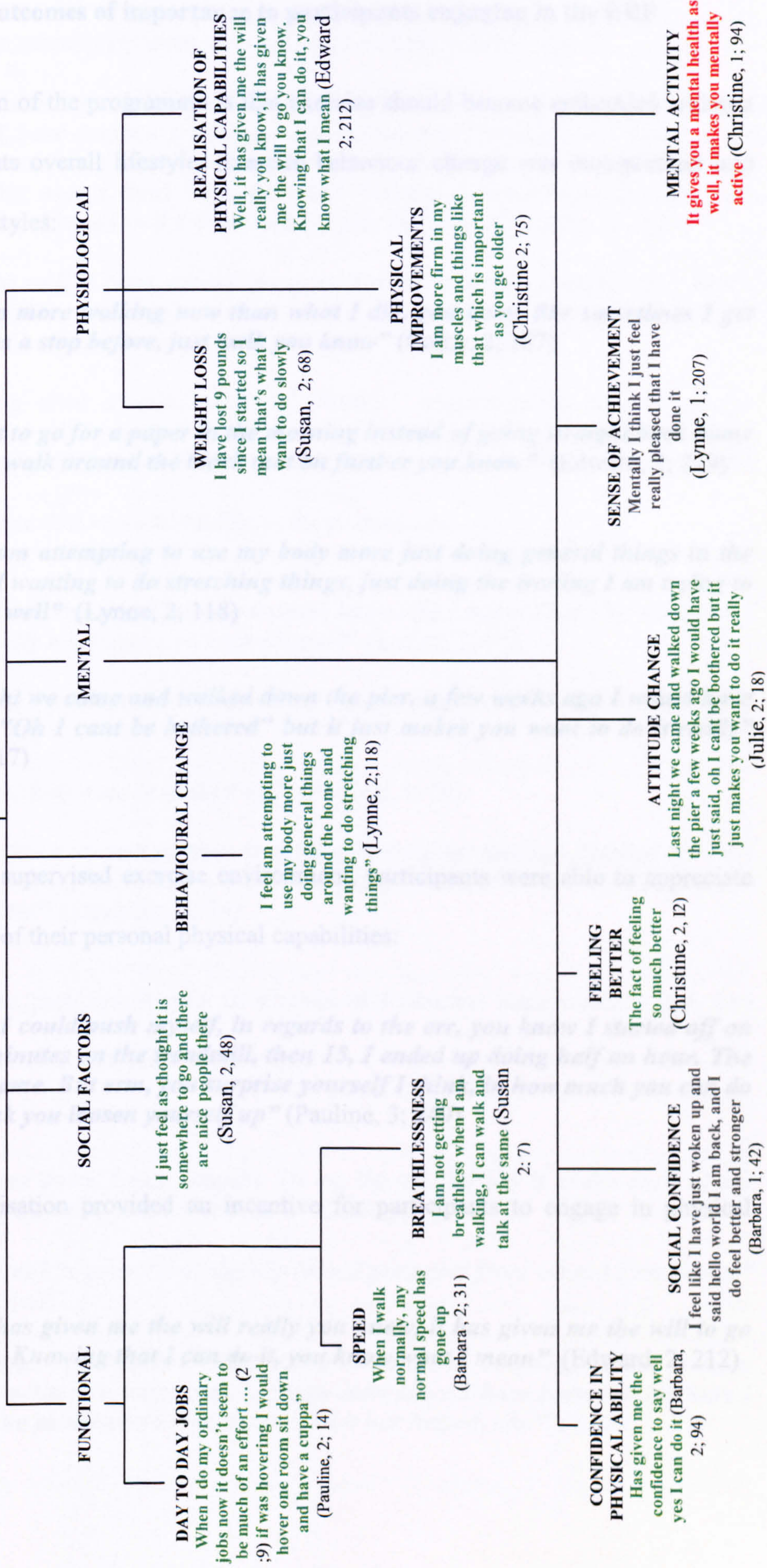


Figure 4.8 Outcomes of importance to participants engaging in the ERP

4.5.4 Outcomes of importance to participants engaging in the ERP

In addition, some participants changed other aspects of their lifestyle:

A key aim of the programme is that exercise should become embedded within a participant's overall lifestyle. Exercise behaviour change was incorporated into daily lifestyles:

"I thought well, I have started the gym, I need to stop (smoking) so I have"
"I also do more walking now than what I did, you know like sometimes I get off the bus a stop before, just walk you know" (Cathy, 2; 187)

Participants cited a wide range of "health" improvements because of the programme:

"If I want to go for a paper in the morning instead of going straight back home I go for a walk around the block that bit further you know" (Edward, 2; 229)

Improvement that was attributable to the programme:

"I feel I am attempting to use my body more just doing general things in the home and wanting to do stretching things, just doing the ironing I am trying to stretch as well" (Lynne, 2; 118)

"Godness knows how many diets I've tried that I have actually lost weight, so I am pleased" (Lynne, 2; 91)

"Last night we came and walked down the pier, a few weeks ago I would have just said "Oh I can't be bothered" but it just makes you want to do it really" (Julie, 2; 17)

"I have lost half a stone to start off" (Pauline, 1; 76)

"I was inclined to start putting on a bit of weight but that has levelled out now you get older" (Christine, 2; 74)

Within a supervised exercise environment, participants were able to appreciate the limits of their personal physical capabilities:

In addition, participants refer to a range of functional improvements that they have experienced:

"I learnt I could push myself, in regards to the err, you know I started off on about 5 minutes on the treadmill, then 15, I ended up doing half an hour. The bike the same. But erm, you surprise yourself I think, in how much you can do and I think you loosen yourself up" (Pauline, 3; 249)

"I can bend down I can actually lift my leg up and put it at the back of me"
 Such realisation provided an incentive for participants to engage in physical activity:

"Well, it has given me the will really you know, it has given me the will to go you know. Knowing that I can do it, you know what I mean" (Edward, 2; 212)

terrible trouble, you know with my legs. Now since I have been coming here I have had no problems so that has proved it has helped, like" (Cathy, 2; 22)

*"You know with having the scar here (on the sternum), I was always be
get that far"*
In addition, some participant changed other aspects of their lifestyle:
(Dave, 2; 80)

*"Since I have been doing it I have realised like, well my lifestyle has changed
because I have stopped smoking I am eating more healthy, you know I am
more aware now of what I am eating, whereas before I used to love cakes and
all that but now I think "Oh God no" because I don't want to, and with
stopping smoking as well I don't want to pile the weight"* (Cathy, 2; 382)

*because the minute you lie down the pain was all pressured on your chest and
down*
"I thought well, I have started the gym, I need to stop (smoking) so I have"
(Cathy, 2; 68)

*moment, 8 and a half weeks and I used to get it at least once a
week in the night and of a day time"* (Paul, 2; 43)

Participants cited a wide range of "health" improvements because of the
Participants conceptualised their physiological improvements in relation to their
programme participation. Participants readily quoted "weight loss" as a health
ability to complete functional, day-to-day tasks. Participants compared their
improvement that was attributable to the programme:

functional ability post programme to how they felt when engaging in functional

*"It's the first time in 20 years, goodness knows how many diets I've tried that I
have actually lost weight, so I am pleased"* (Lynne, 2; 91)

complete:

"I have lost 9 pounds since I started so I mean that's what I want to do slowly"
(Susan, 2; 68)

"When I do my ordinary jobs now it doesn't seem to be too much of an effort"

"I have lost half a stone to start off" (Pauline, 1; 76)

*"I was inclined to start putting on a bit of weight but that has levelled out now
and I am more firm in my muscles and things like that which is important as
you get older"* (Christine, 2; 74)

"I do a lot of gardening, I used to find that hard but now it is a lot easier"

In addition, participants refer to a range of functional improvements that they
feel has been a result of the programme:

Some participants expressed a desire to improve their health in order to interact
with Grandchildren. Because of programme participation, they were able to fulfil

*"I can bend down I can actually lift my leg up and put it at the back of me
which I couldn't do when I first went"* (Susan, 2; 5)

"I think that has gone down slightly (blood pressure) from when I first started"

(Susan, 2; 146)

*me who is always lugging at the back now, whereas if we went
out I was always at the back and someone had to always go and say with me or*

*"Well it has certainly worked for my circulation, because I used to have
terrible trouble, you know with my legs. Now since I have been coming here I
have had no problems so that has proved it has helped, like"* (Cathy, 2, 22)

"I can keep up with my Grandchildren better" (Susan, 2, 77)

“You know with having the scar here (on the sternum), I was always be walking around because it was hurting to stand up, but now, I can get that far” (Dave, 2; 86)

“Have found that since I have been on it now that I used to wake up in the night with these angina pains and like I would be sitting on the bed and the wife would go down and get erm, bicarbonate of soda (D: no an aspirin) an aspirin in water and it would be about half an hour before I could lie down because the minute you lie down the pain was all pressured on your chest and since coming here I haven’t had any recurrence now that is for the last 8 weeks at the moment, 8 and a half weeks and I used to get it at least once a week in the night and of a day time” (Paul, 2; 43)

Participants conceptualised their physiological improvements in relation to their ability to complete functional, day-to-day tasks. Participants compared their functional ability post programme to how they felt when engaging in functional tasks prior to joining the ERP. Daily tasks were easier for participants to complete:

“When I do my ordinary jobs now it doesn’t seem to be too much of an effort” (Pauline, 2; 9)

“I just feel I have got more energy, totally, from just doing general things ... I can hang the washing out a bit quicker and just silly little things like that” (Julie, 2; 37)

“I do a lot of gardening, I used to find that hard but now it is a lot easier” (Susan, 2; 124)

Some participants expressed a desire to improve their health in order to interact with Grandchildren. Because of programme participation, they were able to fulfil

this aspiration:

“I am not the one who is always lagging at the back now, whereas if we went out I was always at the back and someone had to always go and stay with me or the grandchildren would run ahead saying “come on Nan, come on Nan” so I find I am walking faster now when I go out doing my shopping and that I can get around quicker now” (Pauline, 1; 93)

“I can keep up with my Grandchildren better” (Christine, 2; 77)

Improved walking speed and improved “breathing” during walking was also attributed to programme participation:

“If I was walking up a bit of a hill or if I was walking too fast well, if Dot was walking too fast I couldn’t keep up I had to slow down and get my puffer out, well now I don’t have to do that” (Paul, 2; 49)

“I am not getting breathless when I am walking, I can walk and talk at the same” (Susan, 2; 7)

“Having had the heart problem, you get breathless when doing certain things but I must admit that has improved” (Christine, 2; 107)

“I find I am walking faster now when I go out doing my shopping and that I can get around quicker now” (Pauline, 1; 93)

“When I walk normally, my normal speed has gone up” (Barbara, 2; 31)

“I can walk better; when I was in Southport I used to get the bus from one end to the other. Now I walk everywhere” (Iain, 2; 278)

“I just feel better walking taller you know, walking better and moving around better I really do” (Paul, 2; 71)

Participants also cited social and mental benefits. Greater social confidence, improved attitude concerning physical activity, experiencing a sense of achievement and “feeling better” were amongst the benefits cited by participants.

Almost all participants that were interviewed expressed the opinion that they “felt better” for engaging in the programme:

“I feel like I have just woken up and said “Hello World I’m back” (Barbara, 1; 42)

“I feel younger” (Susan, 2; 123)

“I just feel absolutely great” (Iain, 2; 12)

It was difficult to ascertain exactly how or why the participants felt better having attended the programme. It was likely that the physiological and functional factors outlined above did have some role. Some participants felt a sense of achievement for having attended the programme and this was likely to influence how participants felt:

“I feel as though I have achieved something because I feel better” (Pauline, 2; 100)

“Mentally I think I just feel really pleased that I have done it I feel I have achieved something” (Lynne, 1; 207)

“I just did feel good that I was just doing something you know You would feel bright because you were going out and doing something useful” (Julie, 3; 62)

“I think it gives you like a sense of achievement as well, you know when you finish that course like, you think “God you know”” (Cathy, 2; 195)

“It is nice because you have got a mixture of people you have got some people who are older than me and some who are younger than me, but we have that bit of a rapport between us, you know and we get on the bike and we say “we are off to high town now, come on all on your gears”, So we make a laugh of it you see” (Pauline, 1; 120)

“We have gone and built up a programme of work so that you get your jobs done in the house then come here, do your work here and then when you go home you are ready then to do something else” (Pauline, 2; 61)

After the official 14-week period of activity, participants can no longer attend the organised group exercise sessions. The change in time and routine made it difficult for Pauline to continue with a programme of activity:

4.5.5 Participants exercise behaviour post programme

A number of participants (n=6) were interviewed 3-6 months after they had completed the official 14-week programme of activity. At the point of interview one participant (Cathy) had continued with the exercise, two participants had exercised again, however, felt that she needed some support in order to take the first step again. Alan) had ceased to exercise for a period of time and had subsequently resumed their programme of exercise.

Cathy continued to exercise in the same setting (a public gym). She was able to create a support mechanism in that her sister had begun to attend the sessions with her. Pauline and Barbara stopped exercising for different reasons to that of Cathy. Pauline had exercised in a group environment for the duration of the 14-weeks. During this time, social factors were particularly important to her, as was, due to family commitments, the development of a routine:

"I was quite sad really because it made you do it in a way, you didn't give excuses which I suppose sometimes we all, when its up to yourself, we all say – "It is nice because you have got a mixture of people you have got some people who are older than me and some who are younger than me, but we have that bit of a repartee between us, you know and we get on the bike and we say "we are off to high town now, come on all on your gears". So we make a laugh of it you see" (Pauline, 1; 120)

"We have gone and built up a programme of work so that you get your jobs done in the house then come here, do your work here and then when you go home you are ready then to do something else" (Pauline, 2; 61)

"I would dilly dallying around, I would go once and then I would miss and then I would go again and as I say I was too poorly to go anyway" (Barbara, 3; 435)

After the official 14-week period of activity, participants can no longer attend the organised group exercise sessions. The change in time and routine made it difficult for Pauline to continue with a programme of activity:

“When the 14 weeks finished and I had to refer to the other (time) it was, it was throwing it out of err, it was almost like having a flat tyre, you know, there was that something missing and I was, I did keep it up for a while but” (Pauline, 3; 236)

During the post-programme interview Pauline had expressed a desire to start exercising again, however, felt that she needed some support in order to take the first step again:

“I think it is just the initial stop, if I had someone I could go with the first time. You see I came here on my own and I knew no one” (Pauline, 3; 435)

In contrast to Pauline, Barbara had exercised in a gym environment without a group-based focus. Once the initial 14-week period of exercise had finished Barbara, whilst accepting that the support had to be withdrawn at some point in order to make way for other people, describes herself as feeling “quite sad”. She refers to the removal of accountability once the programme had finished:

“I was quite sad really because it made you do it in a way, you didn’t give excuses which I suppose sometimes we all, when its up to yourself, we all say – well I wont go today I will go tomorrow” (Barbara, 3; 89)

As a result, exercise became intermittent in nature, and this coupled with a knee injury meant that eventually participation stopped completely:

“I would dilly dallying around, I would go once and then I would miss and then I would go again and as I say I was too poorly to go anyway” (Barbara, 3; 25)

A number of participants had ceased to exercise, but had subsequently resumed a programme of activity. Two of these participants (Alan and Iain) had taken part

in exercise of an individual nature, whilst one had exercised in a group situation (Dave).

Participant number 6 had stopped exercising due to illness:

“There are times when I haven’t been up to it after Christmas I just got a cold and it must have been nearly two months before I could shake it off” (Dave, 2; 257)

Alan and Iain spoke of continuing with the exercise for a period before participation ceased completely:

“I completed the whole course and for a few weeks afterwards I carried on with it and then it drifted into intermittent and then towards Christmas it went off all together” (Alan, 3; 5)

“The same day that I completed the scheme I enrolled in the gym on a twelve month membership and I had done quite well until after, well Christmas I didn’t go to the gym as often which I have been sorry about” (Iain, 2; 7)

It was evident from the post-programme interviews that these participants were able to resume participation in exercise after a period of non-participation.

4.6 Chapter Discussion

This study aimed to provide an insight into participant experiences of involvement in the EXCEL ERP. The study has enabled, in the first instance, an understanding of the key barriers to adoption of exercise; an understanding of factors that may influence participants' decisions to first of all start and subsequently adhere to a 14-week programme of physical activity; and an appreciation of the outcomes of personal significance to participants. In addition, the tracking nature of this study has allowed an understanding of participants' experiences both as they progress through a programme of exercise referral and beyond.

Barriers to exercise adoption were identified in those participants who, prior to referral to the ERP, had made a decision that they needed to increase their levels of physical activity. Barriers to referral were categorised as factors that were personal to the participant (negative health status, self-presentation, lack of motivation, limited support, limited knowledge of exercise); gym based factors (safety, negative past experience, equipment, perception of the gym environment); and logistical factors (limited access, lack of finance, family commitments, and lack of awareness of facilities). A broad range of factors were identified that influenced participants' decisions to start and subsequently adhere to the exercise programme. These included factors that were related to participants' health status, factors personal to participants (including exercise history); influence of health professionals and factors related to the programme itself. As a result of participation in the EXCEL programme participants

experienced a wide range of physiological, functional, social, and mental health benefits. In addition, some participants incorporated behavioural changes to their general lifestyle. In some instances, participants experienced some of the benefits whilst still on the programme, and this may have acted as a source of motivation for adherence.

A broad range of factors contributed to participant trepidation of starting the exercise programme. Such factors were categorised according to whether they were logistical (e.g. limited access, awareness or funds for exercise); personal (e.g. limited motivation, concerns over self-presentation or concerns regarding health status) or gym based factors (e.g. fear of equipment, safety; or a negative exercise experiences previously within a gym environment). The results of this study support the findings of previous research that was specific to exercise referral populations. Participants of the EXCEL programme felt intimidated by the equipment within the gym environment similar to the findings of Wormald and Ingle (2004). Participants also experienced feelings of self-consciousness and lack of confidence in body image during the early stages of the programme, findings similar to that of Stathi *et al.* (2003) and Crone-Grant and Smith (1999). The results of this study also support the findings of research conducted from elderly populations that were unspecific to an ERP, that safety concerns (O'Brien Cousins, 2000) and limited funding (Booth *et al.*, 1997) are barriers to exercise. Limited time has been previously reported as a barrier to exercise in non-exercise referral populations (for example, O'Brien Cousins, 2000; Johnson *et al.*, 1990). Nevertheless, has not previously been reported as a barrier to exercise in a population of exercise referral participants. The findings of this study are

suggestive that limited time for exercise was not a barrier to physical activity. An examination of the barriers to exercise reported in this study would support the findings of Buckworth (2000) that participants who perceive their health to be poor are unlikely to adopt and adhere to an exercise programme. However, in the instance that participants were offered a supervised programme of exercise upon recommendation from a health professional (i.e. a referral to the EXCEL programme), participants were willing to participate.

Advice from a health professional was a key factor affecting a participant's decision to start a programme of activity. A finding that has also been reported by Stathi *et al.* (2003). Participants expressed a desire to begin a programme of exercise in order to ameliorate symptoms of ill health that affected them daily in a functional and mental way, and to prevent the onset of ill health in the future. Previously, medical supervision has been outlined as important for engagement in physical activity in later life (O'Brien Cousins, 2003). The supervisory nature of this programme was a key reason for participants to begin a programme of exercise and hence the results of the current study would support such findings.

EXCEL programme participants articulated the social benefits of exercising in a group situation. Group exercise provided support and encouragement for participants and contributed to an enjoyable experience whilst exercising. Enjoyment has previously been identified as a factor that influences a participant's decision to take part in exercise (Fox *et al.*, 2000). It was important that participants were exercising with "appropriate" people – i.e. those that were in a similar situation and were of a similar age to themselves. Support from a spouse was an important reason for some participants to continue with the

exercise programme. The personalised nature of the programme was articulated as a positive aspect of the exercise referral experience. Keele-Smith and Leon (2003) and Kreuter *et al.* (1999) reported, previously, that individually tailored advice that accounts for personal exercise preferences could result in greater levels of adherence. In consideration of such results, the personalised nature of the programme adds to the likelihood of participant's adherence.

The majority of participants that were interviewed had reached retirement age. This life stage is characterised by a diminished sense of purpose, reduced social contact and a disruption in typical daily routine (Roberts, 1999). The results of this study suggest that, for some participants, the ERP was "something to do". The outcomes articulated by participants were wide ranging in nature, and included outcomes that have been reported previously for exercise referral participants (Wormald and Ingle, 2004; Stathi *et al.*, 2003; Hardcastle and Taylor, 2001; Crone-Grant and Smith, 1999). Findings that are unique to this study include the fact that participants realised their physical capabilities and gained greater confidence in them. Participants articulated personal preferences for exercise throughout the ERP, in terms of type of activity, support and provision, feedback. Improved health both (physical and mental) was signified by feeling better, possessing greater functional ability, and greater energy than when participants began the programme.

Interviews that were conducted post programme provided an insight into the transitional period from a supervised programme of exercise to an independent programme once the referral period was complete. Whilst some participants were

capable of continuing the exercise programme independently, others, evidently, were unable to independently initiate a programme of exercise after a period of relapse. It is important that factors of importance to participants be accounted for post programme. For some participant's, factors such as; cost; safety; family commitments and lack of motivation, although successfully addressed whilst participating in the programme, once again become issues for participants upon programme completion. In order to ensure continued participation, post programme, it is important that such factors be adequately addressed whilst participants are enrolled on the programme.

Result of this study support previous suggestions by O'Brien Cousins (2000, p. 291) that "*exercise leaders and health professionals should not assume that one programme is suitable for all people*", and also add credence to the National Quality Assurance Framework recommendations that exercise referral participants should be provided with an individualised programme of exercise (DoH, 2001a). The results of this study suggest that an individualised programme of exercise should be based upon the social, psychological, and behavioural factors of personal importance to participants in addition to any pathological and physical requirements. Exercise professionals should also consider and demonstrate an appreciation for the role of physical exercise in the context of the participants overall lifestyle and circumstances, and should consider the exercise preferences of each participant (Cohen-Mansfield *et al.*, 2004; Thurston and Green, 2004). Social interaction was an important aspect of programme participation and participants should therefore be offered the opportunity for group or individual based exercise. The wide-ranging health benefits reported by

participants, outline support for the suggestions by Stathi *et al.* (2003) that a focus on physiological health may deflect from the broader, more holistic benefits that accrue from such programmes. The varied nature of exercise behaviour post programme suggests that a flexible approach to the intervention should be adopted. Clearly, some participants do not become independent exercisers post programme and struggle to cope with a period of relapse. Current programme design means that participants remain enthusiastic about a programme of exercise at 14-weeks; they are then left alone to experience the negative aspects of exercising alone and overcoming relapse. In order to increase the likelihood of participants continuing with an exercise regime post-programme, programme providers should consider adopting a delivery model similar to that previously outlined by Singh (1997). Singh (1997) details a programme situated in south-west London that allows the participants to complete their exercise at their own pace, and as such do not impose a set number of exercise sessions upon participants.

CHAPTER 5

HEALTH PROFESSIONAL PERSPECTIVES OF THE EXERCISE REFERRAL PROCESS

5.1 Chapter introduction

Health professionals are the primary gatekeepers for clients entering the exercise referral process and hence play a pivotal role in current programme delivery. An examination of the reasons why, and the mechanisms of how health professionals refer participants to an ERP is essential to successful programme implementation (Taylor, 2003). Information obtained, in terms of operation and programme processes; at the primary care level may have implications for health professional involvement and subsequent improvement/modification of the referral process.

Despite increasing political requirements for healthcare professionals to provide exercise advice to patients (DoH, 1999a; DoH, 2001a; DoH, 2004b) at a practical level, evidence would suggest some disparity in the volume of health promotion and more specifically exercise promotion by general practitioners. This evidence comes from rates recalled by primary health care patients (Glasgow *et al.* 2001); observational studies (Anis *et al.*, 2004) and also health practitioner self-reported levels of engagement in physical activity promotion (McAvoy *et al.*, 1999; Coulter and Schofield, 1991). Glasgow *et al.* (2001) conducted a cross-sectional telephone survey of a patient population (n=1818) in order to determine the level of provision for physical activity advice. Only 28% of the sample received advice for physical activity. Direct observations of doctor patient interactions suggest that health professionals provide physical activity advice in 20-25% of patients visits (Anis *et al.*, 2004). In the UK, in some health professional populations, the total time spent engaged in physical activity promotion accounts for only 16% of general practice clinical time (McAvoy *et al.*, 1999). In addition,

out of all options for advice concerning lifestyle behaviour (i.e. dietary, smoking cessation, sensible alcohol intake and exercise), exercise was that which was least likely to be discussed in general practice (Anis *et al.*, 2004; Coulter and Schofield, 1991). There is however, some evidence to suggest that chronologically there has been increasing acceptance of physical activity promotion in primary health care and increasing engagement in such practices (McAvoy *et al.*, 1999; McKenna *et al.*, 1998). McKenna and Vernon (2004), using a postal questionnaire established that 47% of general practitioners from one UK health district regularly promoted government physical activity guidelines for health.

Health professionals, attitudes, opinions and working practices with regards to their engagement in physical activity promotion and preventive activity have been examined in both UK (McKenna *et al.*, 2004; Lawlor *et al.*, 1999; McKenna *et al.*, 1998; Gould *et al.*, 1995a; Coulter and Schofield, 1991) and non-UK populations (Anis *et al.*, 2004; Kennedy and Meeuwisse, 2003; Glasgow *et al.*, 2001; Swinburn *et al.*, 1997; Bull *et al.*, 1997). There is evidence to suggest that in the UK health professionals are enthusiastic and have a positive attitude towards disease prevention (McAvoy *et al.*, 1999) but they also have reservations about their own personal involvement in such practices (Williams and Calnan, 1994). There is varied opinion as to what level of knowledge health professionals possess concerning the health benefits of physical activity. The results of two qualitative investigations reported that health professional knowledge of the health benefits of physical activity to be poor (Smith *et al.*, 1996b; Gould *et al.*, 1995a). In contrast, however a more recent investigation

utilising alternative research methods reported that level of knowledge was good (Lawlor *et al.*, 1999).

Previously studies have reported a range of barriers that inhibit health professionals' willingness to provide lifestyle advice to patients. Health care professionals have consistently identified lack of time to promote physical activity during general practice consultations, as a barrier to its promotion. This finding is consistent for; practice nurses as well as general practitioners (Burns *et al.*, 2000); different regional areas within the UK; South-Western regions (McKenna *et al.*, 1998); Oxford (Coulter and Schofield, 1991) and Bradford (Lawlor *et al.*, 1999) and also in relation to studies that have been conducted in Australia and the United States of America (Abramson *et al.*, 2000; Walsh *et al.*, 1999; Bull *et al.*, 1995; Williford *et al.*, 1992). Additional factors that have been identified as barriers to physical activity promotion in primary health care have included; lack of confidence in the efficacy of health promotion in general practice (Gould *et al.*, 1995a; Bull *et al.*, 1995; Williford *et al.*, 1992); a perceived limited ability to modify patients' lifestyle (McKenna and Vernon, 2004; Steptoe *et al.*, 1999); lack of confidence in counselling skills (Gould *et al.*, 1995a); a perceived lack of patient motivation towards health behaviour change (McAvoy *et al.*, 1999; Calnan and Williams, 1993b); insufficient education with regards to exercise at medical school (Kennedy and Meeuwisse, 2003; Williford *et al.*, 1992) and concerns that patients will suffer from a myocardial infarction or cardiac arrest during the advised programme of activity (Morey and Sullivan, 2003).

Some studies have attempted to determine what factors (for example participant characteristics; health care professional and primary health care cultural factors) and under what circumstances and situations health care professionals will promote physical activity. Results from a study utilising a questionnaire survey (n=1014), and qualitative research techniques (n=174) suggest that health care professionals are more likely to discuss physical activity during health checks than during routine consultations (Lawlor *et al.*, 1999; Coulter and Schofield, 1991). Health professionals are also more likely to discuss such issues with patients that present with symptoms relevant to physical activity promotion, such as weight control (Sims *et al.*, 2004). Health professionals personal exercise preferences can be associated with levels of physical activity promotion in patients, unfit general practitioners are less likely to promote physical activity to their patients (Abramson *et al.*, 2000 and Sherman and Hershman, 1993) and those in a high stage of change (action or maintenance) are more likely to promote physical activity in their patients than those in a lower stage of change (pre-contemplation, contemplation or preparation) according to results reported by McKenna *et al.* (1998).

To date knowledge and understandings of health professionals practices, attitudes and opinions with regards to physical activity promotion have been derived predominantly from studies that have utilised quantitative research methodologies (for example Abramson *et al.*, 2000 ; Walsh *et al.*, 1999; Bull *et al.*, 1997). However, prescribing behaviour concerning pharmacological interventions has been described by Grant and Dowell (2002, p. 634) as “a *multifactorial and idiosyncratic process*”. Multifactorial in the sense that “a

range of personal, social and logistical influences, in addition to those that are purely medical and pharmacological” (Jacoby *et al.*, 2003, p. 120) must be considered when deciding upon an appropriate intervention for patients. Advice concerning lifestyle-orientated interventions will require similar, if not more, consideration of the factors previously outlined. In this sense therefore, qualitative research methods, characterised by an emphasis on “context” specific information, are recognised as both important and appropriate approaches to research within the primary health care setting (Barbour, 1995). Such methods permit an explanatory investigation into health care professional’s practices with regard to physical activity promotion. Qualitative research methods have been utilised previously in order to determine variations in general practitioner prescribing practices of both pharmacological treatments for the prevention of coronary heart disease (Byrne and Campbell, 2003; Kedward and Dakin, 2003; Jacoby *et al.*, 2003) and lifestyle orientated treatments (Swinburn *et al.*, 1997; Smith *et al.*, 1996b; Gould *et al.*, 1995a).

Previously, only a small number of studies concerning health professionals’ attitude, opinion, and practices of physical activity promotion in primary health care have utilised semi-structured interviews as a key research methodology (Gould *et al.*, 1997; Gould *et al.*, 1995a; Swinburn *et al.*, 1997 and Smith *et al.*, 1996). There are however only two studies to date that have analysed health professionals’ perspectives of physical activity promotion in relation to a UK based ERP (Smith *et al.*, 1996; Gould *et al.*, 1995a).

5.2 Study Aims

Study one outlined that in the two-year period between March 2001 and March 2003 50 surgeries, from a possible 54, referred participants to the programme. There was, however, a large degree of variance in the way in which health professionals referred. The aim of the study was to investigate key factors that affected programme operation from the health professional's perspective. Specifically the study aimed to examine health professionals; referring practices of participants to the EXCEL ERP; perceived barriers to referral; level of prioritisation given to referring participants to EXCEL in day to day consultations; and perceived importance of their role (both from a personal perspective and from the perspective of the profession as a whole) in the process of exercise referral.

5.3 Methodology

This study adopted a unique multi-method approach. A combination of quantitative and qualitative data collection techniques and detailed content analysis was utilised in an attempt to gain an in depth understanding of health professionals' opinions and practices towards physical activity promotion in conjunction with an ERP. A postal survey was combined with semi-structured interviews to target health professionals (n=144) in the catchment area.

5.3.1 Postal Survey

A questionnaire survey was mailed to all General Practitioners (n=144) in 54 practices (see appendix 4). The questionnaire was in the format of closed response enabling the questionnaire to be less time consuming for the respondents (Denscombe, 1998). Previously, response rates have been reported as high when questionnaires have required closed responses and consideration has been given to the questionnaire length (MacPherson and Bisset, 1995). The questionnaire was comprised of three sections. Section one, questions 1-6 aimed to determine the referring practices of participants to the scheme. Section two, questions 7-14, aimed to determine health professional's knowledge and opinion of the impact of the ERP in terms of coronary heart disease risk reduction. Section three, questions 15-20, aimed to determine the personal characteristics of respondents. Prior to distribution, the content was discussed with ERP providers to determine if they felt any additional questions were required. As a result, questions 13 and 14 were added. Programme providers also felt that the response rate to the questionnaire would be improved if the public health executives signed the covering letter.

5.3.2 Semi-structured interviews

Interviews were used to augment data obtained from the postal survey, and to gain an in-depth understanding of how health practitioners relate to an ERP. A semi-structured interview format was elected, on the basis that this form of interview would permit health professionals to raise new issues and discuss

designated issues in more depth. Health professionals volunteered for interview in response to the postal questionnaire using a tick box and were therefore considered self-selected. Interviews were conducted privately in each health professional's own care setting. An interview script was determined based on responses to the questionnaire; key questions asked health professionals how they practically selected patients for referral to an ERP? What were the key barriers to referring a patient to an ERP? What was their perceived role in the process of participant behaviour change? And what involvement did they feel they should have in participant progress through an ERP? Interviews had to be pragmatic to fit into the busy working practices of health professionals and were typically 30 minutes in length. Consent to be interviewed was obtained from both male (n=6) and female (n=4) GPs and three practice nurses (female).

5.3.3 Data Analysis

Responses to the postal questionnaire were entered into SPSS for Windows and the descriptive statistics function was used to compute response distribution. Interviews were recorded and transcribed verbatim. Transcripts were analysed by topic for key theme development using content analysis techniques (Flick, 2002).

5.4 Results

Results are organised and presented as two sections. Section 6.4.1 reports the results obtained from the postal questionnaire, whilst section 6.4.2 reports the results from the semi-structured, one to one interviews.

5.4.1 Postal questionnaire

Accurately completed questionnaires were received from 49% (n= 71) of targeted subjects from 35 practices. Previously, response rates to postal questionnaires have varied from between 25% (Abramsom *et al.*, 2000) to 100% (Steptoe *et al.*, 1999). A 60-70% response rate reported as most common (Kennedy and Meeuwisse, 2003; McAvoy *et al.*, 1999; McKenna *et al.*, 1998; Bull *et al.*, 1997; Calnan and William, 1993a; Calnan and William, 1993b). All respondents referred regularly to the scheme except for two male General Practitioners. All respondents were physically active themselves.

Table 5.1 Participant information.

	N=	Percentage of overall sample
Gender		
Male	35	49
Female	31	44
Missing Data	5	7
Years practising		
0-5 yrs	12	16.9
5-10 yrs	14	19.7
10-15 yrs	25	35.2
15 +	17	23.9
Missing data points	3	4.2
Primary Care Trust		
Southport and Formby	25	35
South Sefton	42	59
Missing Data	4	6
Profession		
General Practitioner	61	85.9
Practice Nurse	6	8.5
Missing Data Points	4	5.6

5.4.1.1 Referring practices

The majority of health professionals refer participants to the ERP as a means to prevent disease occurring and to promote a holistic approach to healthcare. This was closely followed by seventy eight percent of respondents who agreed that they referred in order to prevent symptoms of coronary heart disease occurring. Two thirds of respondents agreed that they referred to the ERP as a means to rehabilitate coronary heart disease patients. Whilst only thirty seven percent of respondents indicated that they referred to the ERP in order to alleviate symptoms associated with coronary heart disease (see figure 5.1).

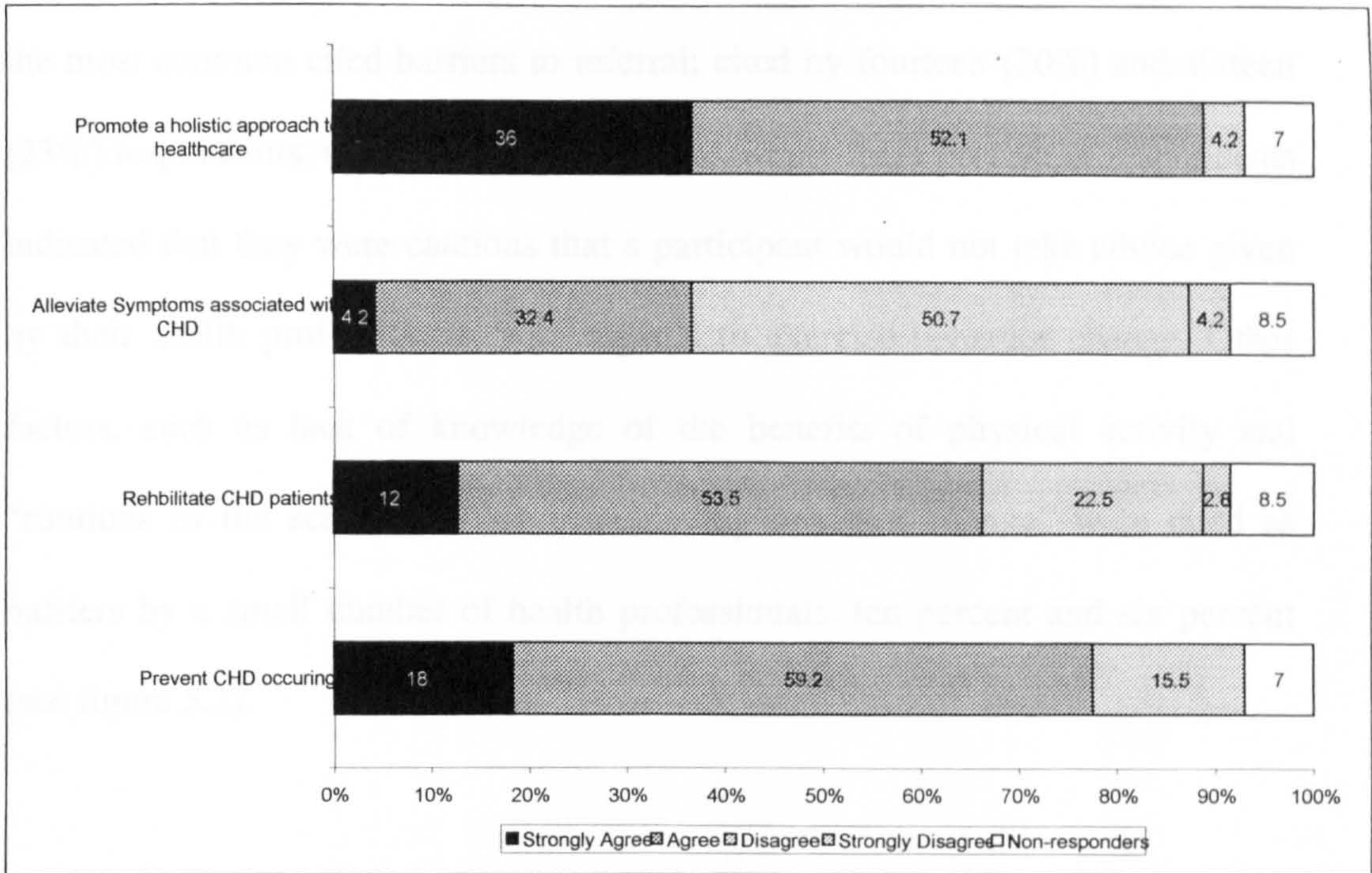


Figure 5.1 Reasons why health professionals utilise EXCEL as a mechanism for physical activity promotion

Exercise referral, in comparison to smoking cessation, was ranked the most utilised referral service by the least amount of health professionals. Twenty three percent (n=16) of respondents ranked exercise as the most utilised referral service, in comparison to smoking cessation, which was ranked the most utilised service by sixty nine percent (n=49) of respondents.

5.4.1.2 Barriers to referring participants to EXCEL

Respondents were asked to indicate, from a list of 6, what barriers do, or potentially would prevent them from referring a participant to EXCEL. Some factors were more popular than others. Time based factors (lack of time to complete paperwork and lack of time to explain the ERP to the participant) were

the most common cited barriers to referral; cited by fourteen (20%) and sixteen (23%) respondents, respectively. In addition, twenty three percent of respondents indicated that they were cautious that a participant would not take advice given by their health professionals, with regards to exercise behavior change. Other factors, such as lack of knowledge of the benefits of physical activity and “cautious of the schemes effect in achieving behavior change” were cited as barriers by a small number of health professionals, ten percent and six percent (see figure 5.2).

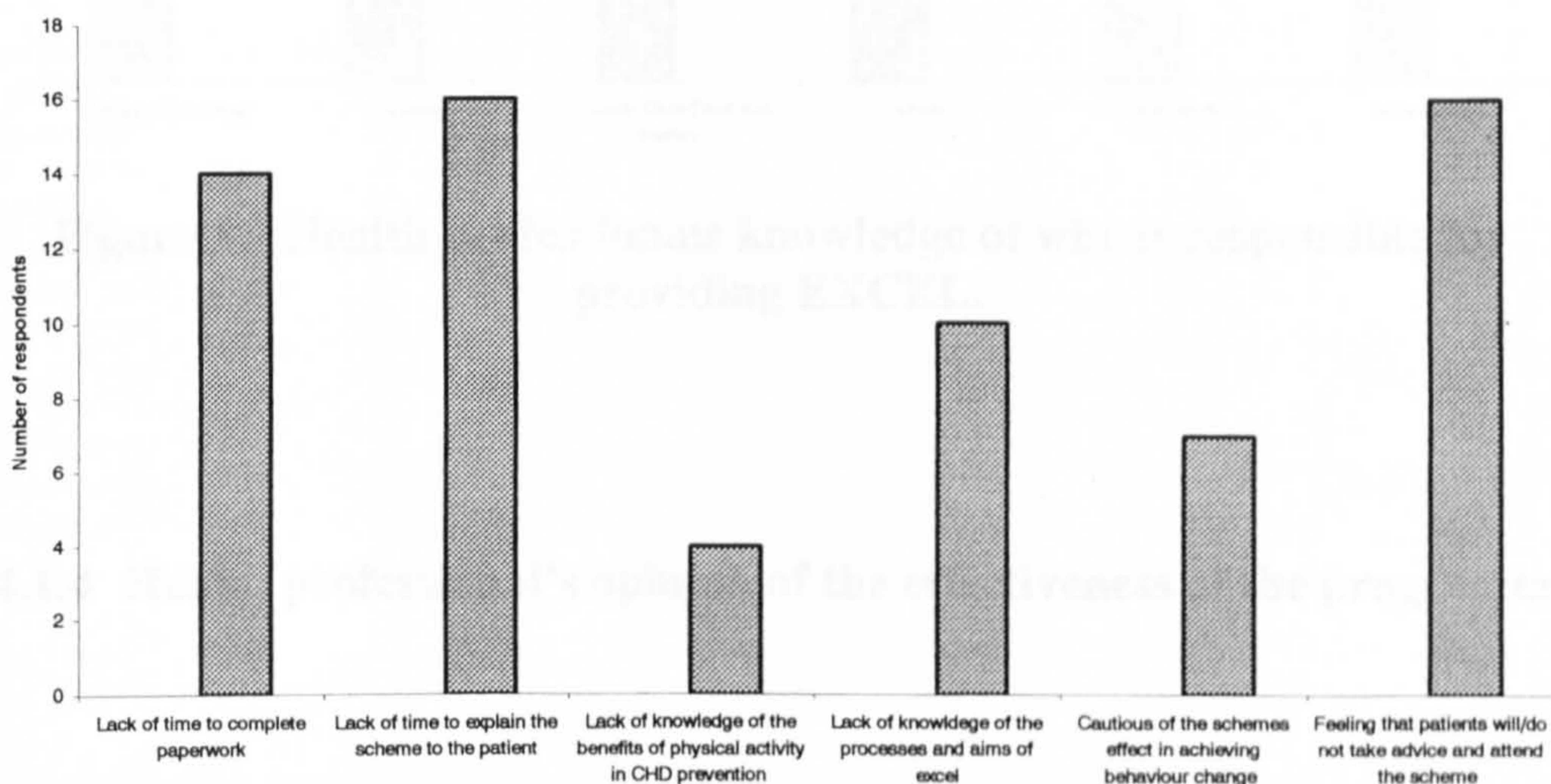


Figure 5.2 Health professionals barriers to using EXCEL as a means to promote physical activity to patients

5.4.1.3 Knowledge of the process/impact of EXCEL

Seventy percent of respondents felt that they had received sufficient information and training with regards to EXCEL. Sixty percent of respondents felt that it was important that they received regular information with regards to participant progress through the ERP. A range of responses were obtained to the question of

who was responsible for providing EXCEL (figure 5.3). Only 11% (n=8) of respondents correctly cited that the programme was a collaboration between Sefton primary care trust and Sefton council.

Table 5.3 Health professionals opinion of the effectiveness of EXCEL

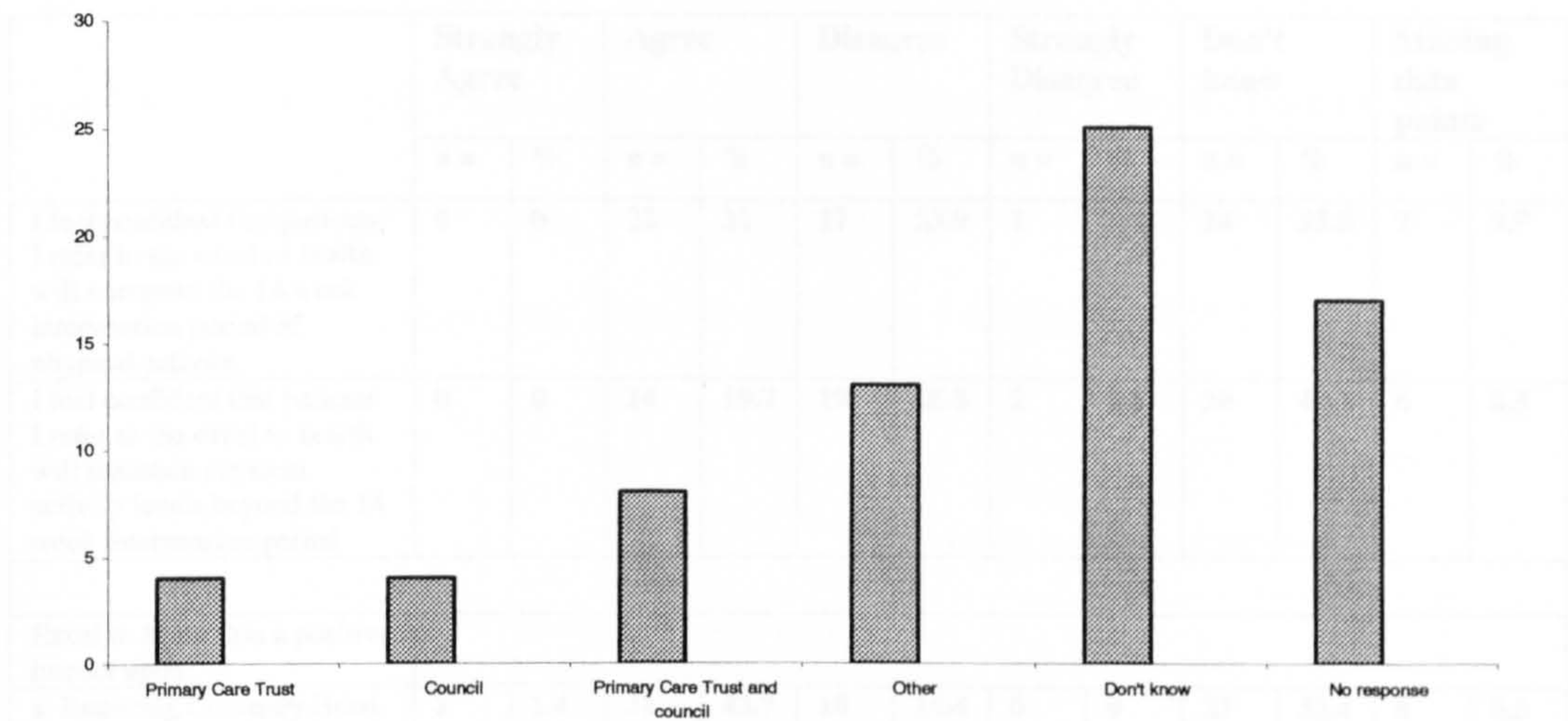


Figure 5.3 Health professionals knowledge of who is responsible for providing EXCEL.

5.4.1.4 Health professional's opinion of the effectiveness of the programme

Equivocal attitudes and opinions were expressed with regards to the effectiveness of the ERP (see table 5.2). Health professionals, albeit a small number, expressed greater confidence that participants would complete the 14-week programme of physical activity, than to continue exercise beyond the scheme. Thirty one percent of respondents agreed that participants they referred completed the 14-week programme of physical activity in comparison to only twenty percent of respondents, who felt that participant would continue with exercise after the 14 weeks were complete. Questions regarding the effectiveness

of the scheme overall, and for individual participants elicited a large number of “don’t know” responses.

Table 5.2 Health professionals opinion of the effectiveness of EXCEL

	Strongly Agree		Agree		Disagree		Strongly Disagree		Don't know		Missing data points	
	n =	%	n =	%	n =	%	n =	%	n =	%	n =	%
I feel confident that patients I refer to the excel to health will complete the 14 week intervention period of physical activity.	0	0	22	31	17	23.9	1	1.4	24	33.8	7	9.9
I feel confident that patients I refer to the excel to health will maintain physical activity levels beyond the 14 week intervention period	0	0	14	19.7	19	26.8	2	2.8	30	42.3	6	8.5
Excel to health has a positive impact upon												
a. Reducing Coronary Heart Disease in the Sefton population	1	1.4	31	43.7	10	14.4	0	0	23	32.4	6	8.5
b. Reducing risk factors associated with Coronary Heart Disease	3	4.2	45	63.4	5	7.0	0	0	12	16.9	6	8.5
c. Increasing physical activity levels amongst the sefton population	3	4.2	40	56.3	6	8.5	0	0	16	22.5	6	8.5
d. Maintaining long term adherence to physical activity	3	4.2	23	32.4	9	12.7	1	1.4	29	40.8	6	8.5

5.4.1.5 Health professionals knowledge of the health benefits of exercise

Ninety three percent (n=64) of respondents expressed the opinion that smoking behaviour was important or very important in contributing to the risk of coronary heart disease. Similar findings were present for lack of exercise, with 94% (n=67) expressing the opinion that exercise as either important or very important in contributing to of coronary heart disease risk. There was a difference in the distributions of such responses, with the predominance of smoking coming within the very important category and a half and half split for exercise.

5.4.2 Semi-structured interviews

Consent to be interviewed was obtained from both male (n=6) and female (n=4) general practitioners and three practice nurses (who had completed the questionnaire on behalf of a General Practitioner). All volunteers were interviewed. Some common themes emerged from data analysis (see figure 5.4). A more detailed breakdown of the generic themes is presented, through the process of content analysis is detailed in figures 5.6 through 5.9.

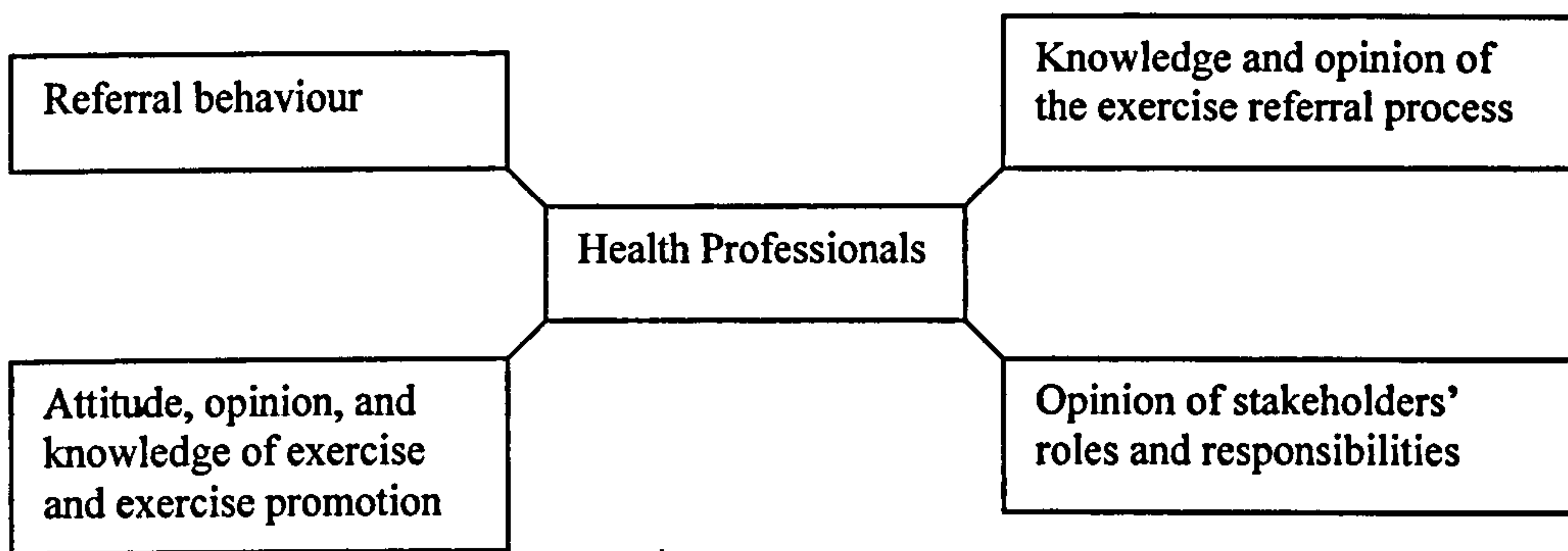


Figure 5.4 Identification of health professionals' attitude, opinion, and knowledge concerning exercise promotion and EXCEL ERP.

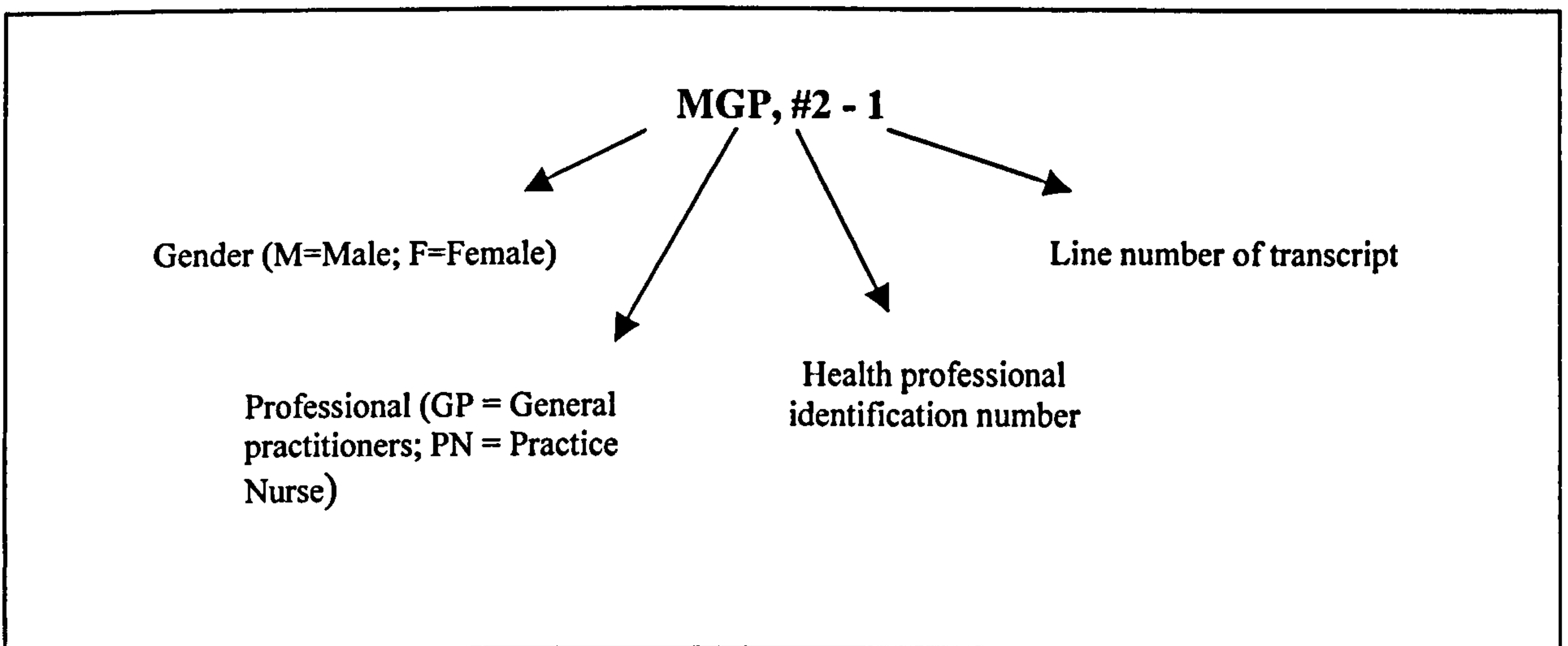
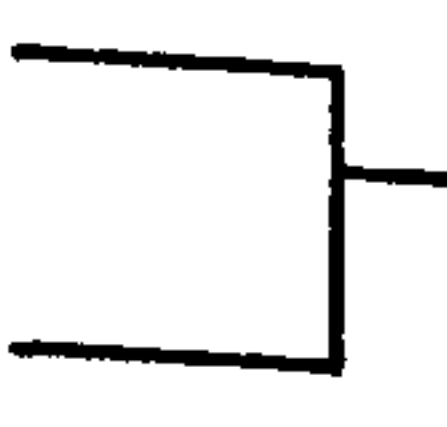


Figure 5.5 Key for understanding to code preceding a health professional quote

1.2.1 Referral behaviour

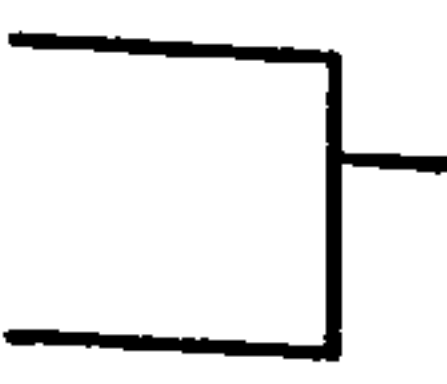
Order themes
nensions 2nd Order themes 3rd Order Themes General

pick them up through all the checks we are doing with the patients, coronary heart clinics, asthma clinics (PN#1 -20)



Health checks

We go through a template on the computer (PN #2 - 19)



Disease templates

Almost all our clients have the potential to undergo behaviour change ... often what I am doing is ... getting the patient to chose which one they want to do (FGP #2, 38-42)

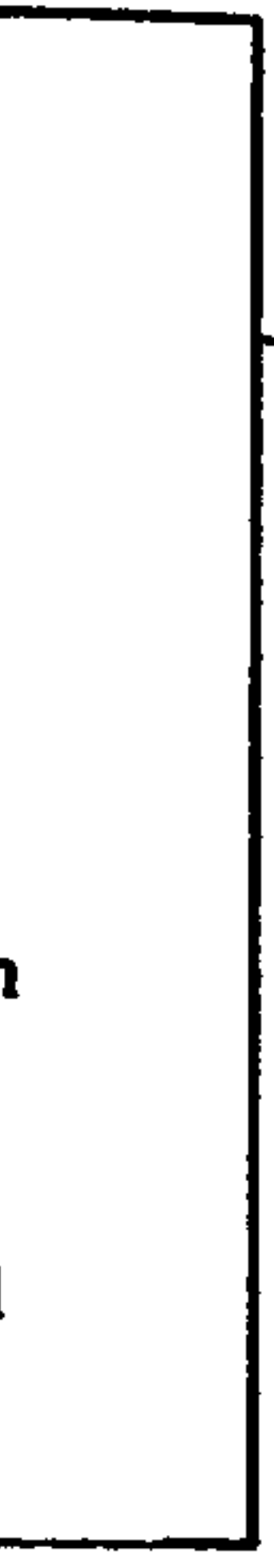


Participant involvement

It is usually people who ask about it (MGP#1 - 6)

recently it has mainly been the patients enquiry about it (MGP #3 - 30)

Dr Sharma may leave a letter in our basket and say could you refer this patient to excel (PN #2 - 85)



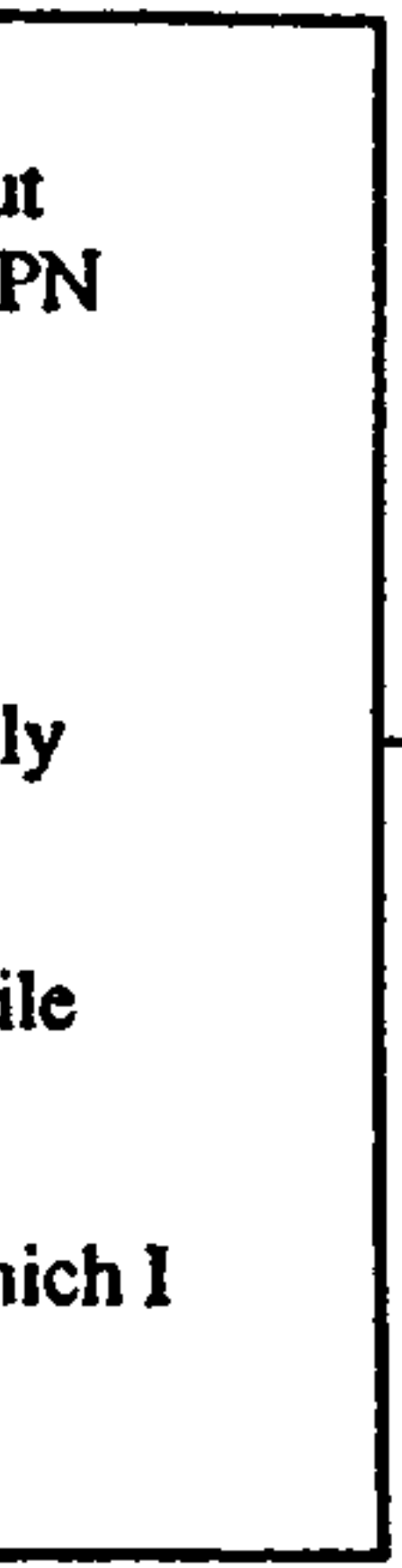
Practice nurse referrals

we encourage our practice nurses to refer more people (MGP # 1 - 56)

"quite often you will get a patient booked in to be referred to excel from the doctor" (PN #3 - 182)

"if they (Gp) want a referral they will send them to me and I will do it from there" (PN #1 - 6)

I have been about 2 months without referring anybody at the moment (PN #2 - 5)



Inconsistent referral patterns

I go through phases, I mean I forget, I might refer a flow of people and then forget to do it really (MGP1 - 54)

I haven't referred anyone for a while (FGP #3 - 9)

the patients are sort of sporadic which I am referring (MGP #3 -132)

I am not quite sure that the Excel to health is the appropriate place to refer people who have got maybe potentially quite significant disease (MGP #1 – 16-18)

I would have thought grossly obese patients I wouldn't refer, recent MI they would need to be seen by a hospital first (PN # 2 – 78)

We give them the leaflet and they have a look at it ... I say ... if your interested get back to me and I will refer you (PN #4)

"I will give you an information leaflet ... if you can identify anywhere that you could do something about, you come back and tell me" (NC)

I wouldn't refer someone if they said they are not going to do it anyway (MGP #2– 20)

I think if they weren't motivated yes, I would never force them (FGP #1 – 94)

if they are prepared to exercise to help their lifestyle and to help their condition then I will refer them (FGP #3 – 17)

It would just depend on what their confidence level was about exercise. Some people will come and say "I can cycle to work I have got a bike and would just go and do it and I wouldn't refer them" (FGP #2 – 65-67)

they are motivated and that's why I do refer people who ask really (MGP #1 – 162)

Usually if they have not got the money to join another club (FGP #1 – 33)

A lot of them do say well yes I would like to but these Gyms are too expensive and that is when out comes the leaflet on excel (PN#2 – 23)

if they couldn't afford to join a gym (FGP #3 – 39)

usually if they have not got the money to join another club, that is usually the top one that I send people (FGP #1– 33)

Health condition

Referral behaviour

Reason to refer

Patient attributes

Financial restraint

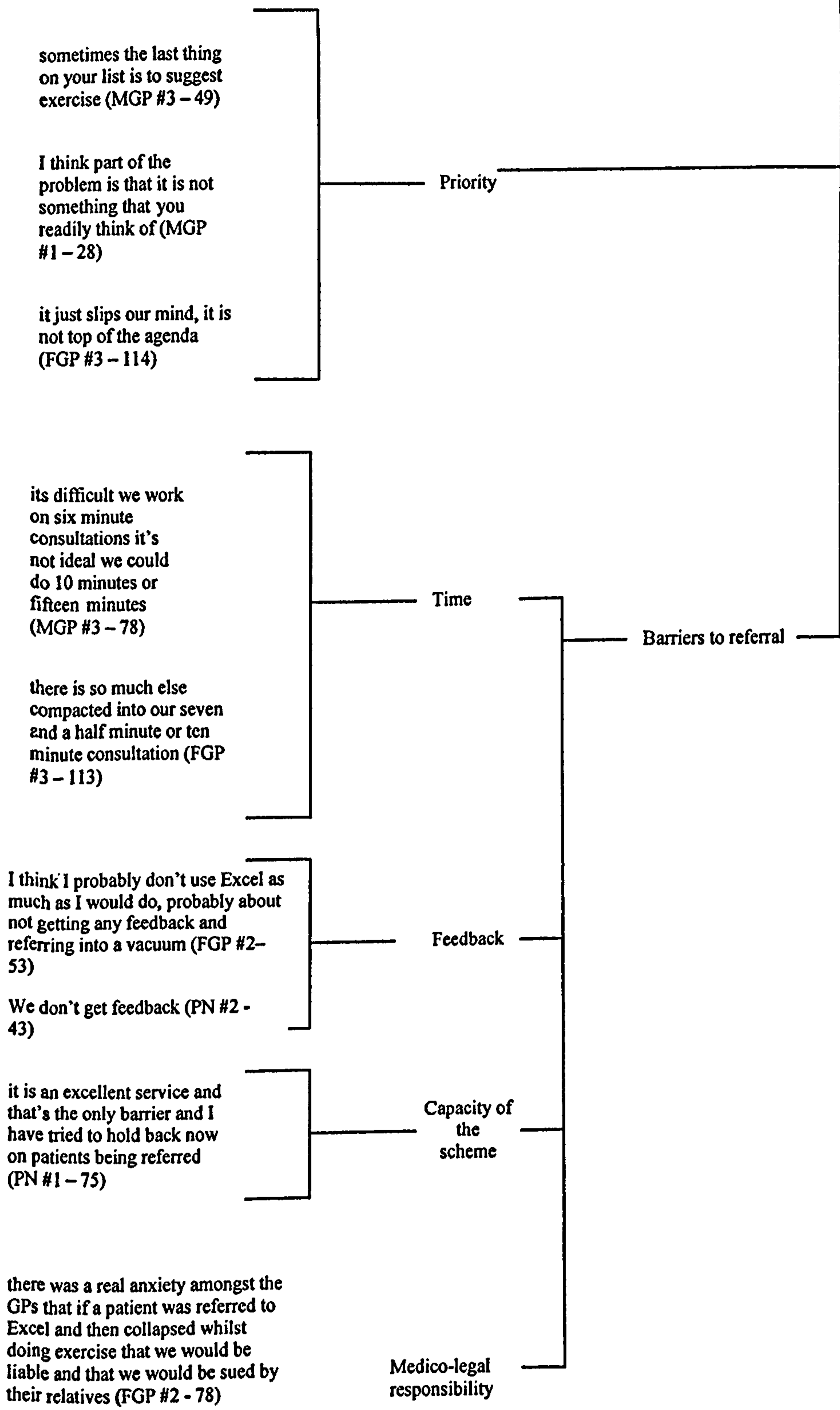


Figure 5.6 Elements of referral behaviour identified through hierarchical content analysis of interview transcripts.

5.4.2.1.1 Referral behaviour - overview

Results from this study have provided an insight into methods that are used to identify participants for referral, including the specific participant characteristics/disease states and symptoms that health professionals will identify in order to make a referral.

5.4.2.1.1.1 Methods of participant identification

Although eligibility criteria existed for referral to the programme, the circumstances under which health professionals identified suitable participants for referral varied between practices. General practitioners identified potential participants during routine consultations and sometimes asked the practice nurse to refer on behalf of himself or herself. Practice nurses, in addition to referring on behalf of the general practitioner, also identified potential participants during disease management clinics and via routine health checks (both annual and when coming to a new practice). A number of health professionals referred participants who enquired about the programme.

Health professionals had difficulty remembering that the ERP was available to them as an option for participant care during routine consultations (linked to prioritisation/role in health promotion). Rather than refer participants on a regular basis, as a matter of routine, it appears that health professionals refer many people for a short period, and then may not refer anyone for a while.

“I go through phases, I mean I forget, I might refer a flow of people and then forget to do it really” (MGP1 – 54)

The introduction of preventive medicine to primary health care has meant that health professionals have a range of options available to them, in terms of patient care and disease management. Remembering that they had the option to refer somebody to the scheme was difficult to do. The most common practice was to refer a participant on the basis that they had presented with an obvious medical condition. This finding supports the findings of previous studies (Glasgow *et al.*, 2001; Lawlor *et al.*, 2000; Swinburn *et al.*, 1997; Calnan and Williams, 1993a; Calnan and Williams, 1993b) and is suggestive that health professionals are more comfortable with managing illness, as opposed to preventative practice.

Identification of participants, during disease management clinics or health checks were alternative approaches that were particularly utilised by practice nurses.

5.4.2.1.1.2 Participant characteristics and circumstances

Information was obtained with regard to the specific participant characteristics and circumstances health professionals looked for when making a decision to refer them to EXCEL. In accordance with the programme “referral criteria”, health professionals utilised a participant’s diseases status as a mechanism to identify and subsequently refer. In this sense participants who had some form of risk factor for coronary heart disease, or had a disease such as diabetes that was closely linked to coronary heart disease were identified and referred to the programme:

“It tends to be coronary heart disease patients not doing any exercise at home or are maybe a little overweight” (PN#2 - 11)

Some health professionals also considered the financial situation and motivational “mind-set” of a potential participant prior to referral. In some instances, health professionals carefully considered the suitability of a participant prior to making a referral. For example, a health professional who operated within a surgery with a specific “public health remit” considered alternative opportunities for physical activity with a patient prior to making a referral:

“I will always talk to people when they first come about ... what levels of exercise and we record for all our patients what level of exercise they actually do ⁽⁵¹⁻⁵³⁾ Some people will come and say “I can cycle to work I have got a bike” and would just go and do it and I wouldn’t refer them” (FGP #2, 65)

In some instances, there was discrepancy between the referral criteria imposed by the ERP providers and the actual referral practices of participants by health professionals. Financial difficulty is not a referral reason identified in the “referral criteria” but has been identified, by some health professionals, as a reason to refer participants:

“A lot of them do say well yes I would like to but these Gyms are too expensive and that is when out comes the leaflet on excel” (PN#2 – 23).

5.4.2.1.1.3 Barriers to referral

A number of barriers that do prevent or potentially could prevent health professionals from referring participants to EXCEL were identified. Firstly,

physical activity promotion was not a high priority during general practice consultations. Lack of time and the requirement to treat the patient's primary reason for their appointment with the health professional were possible reasons for this lack of prioritisation:

“We neglect that one (exercise) because it slips our mind, it's not top of the agenda (public health policy agenda)” (FGP #3 - 103)

Some health professionals cited the fact that there were long participant waiting lists for scheme enrolment as a barrier to referral. The scheme receives approximately 1000 referrals per year but does not impose any restriction on the number of participants that health professionals can refer to the scheme.

“It is an excellent service and that's the only barrier. I have tried to hold back now on patients being referred because I know you are busy ... they are really keen to get going and I am frightened that they will lose momentum because of that” (PN #1 – 75,32)

Additional barriers to referral included a lack of feedback to health professionals concerning participant progress and lack of clarity as to who would be held legally responsible in the case of a fatality. Concerns regarding medico-legal responsibility were specifically raised by the two health professional that did not refer to the programme:

“In the document (excel protocol) they have quoted some guidance from the indemnity societies The full letter from the indemnity society says, because of lack of regulation of exercise personnel, despite the fact that they are nationally recognised exercise qualifications. Doctors cannot refer to you as such then they are required to delegate to you” (MGP#5. Does not refer to the scheme, 26)

“Whilst exercise is beneficial there is a risk to it and whether these schemes have been set up to safeguard me as a professional and to safeguard my patients, well

I don't think it has, that's why I don't refer people to it" (MGP #4. Does not refer to the scheme - 132)

Mixed opinion was obtained from health professionals that did refer to the ERP regarding the issue of medico-legal responsibility and safety of participants. Some health professionals were satisfied with the safety aspects of the programme:

"I know I am going to pass patients on that maybe I have some concerns about who will be properly monitored ... I know patients I refer there will be properly monitored" (PN #1 - 49)

"It is confidence in the way that the scheme is, I know they are going to get some advice about what they should and shouldn't be doing based on what I have told them about the patients condition ... it's a safe option apart from anything else, because its geared up to whatever problems they have got" (PN #3 - 171)

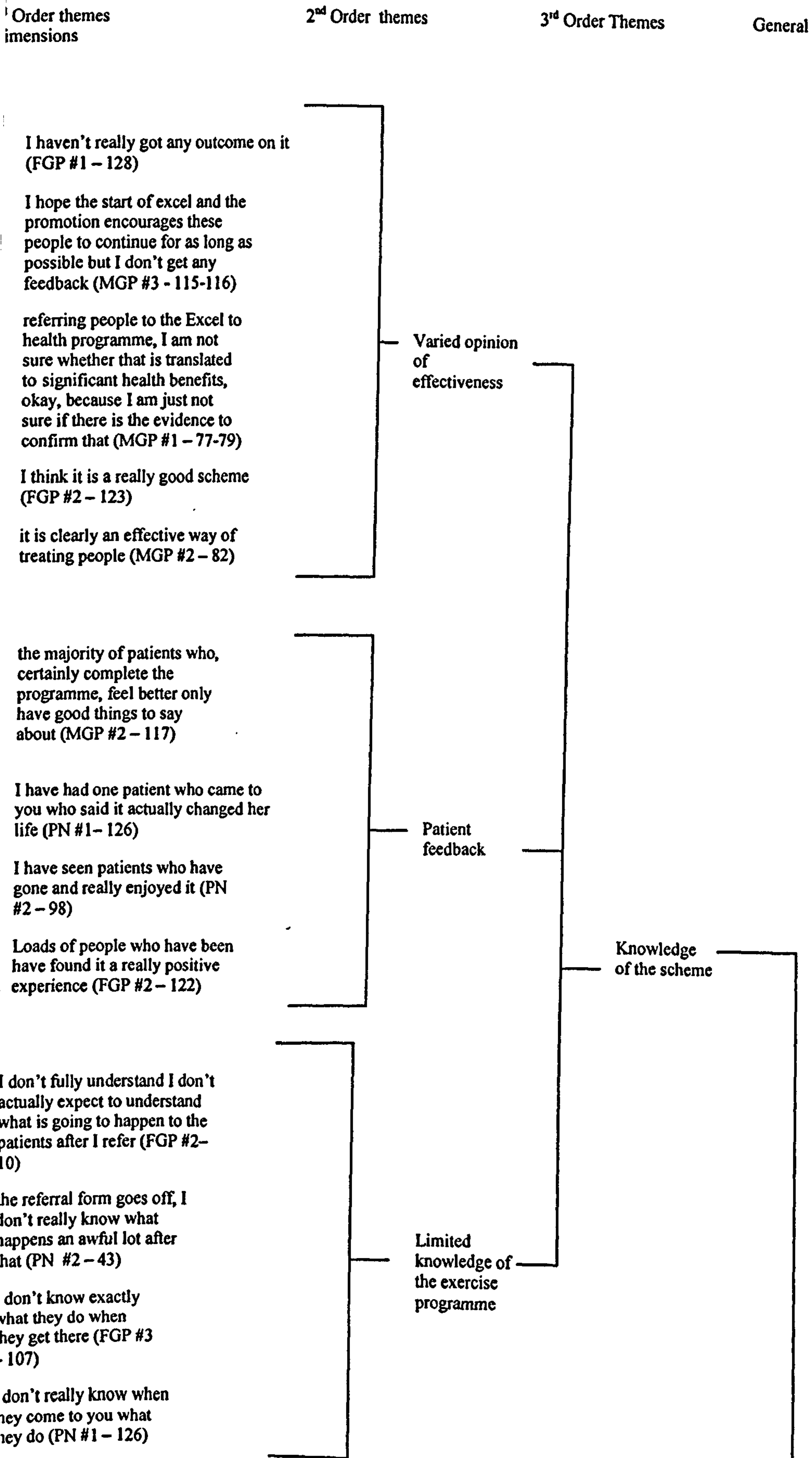
Some health professionals had concerns over referring, what they considered to be, high risk, participants to the ERP.

"I am not quite sure excel is the appropriate place to refer people who have potentially got quite significant disease" (MGP #1 - 15)

It is suggested in the National Quality Assurance Framework, *"When the individual is specifically referred for exercise by a health practitioner, responsibility for safe and effective management, design and delivery of the exercise programme passes to the exercise and leisure professionals"* (DoH, 2001a, p.13), thus on the basis that an exercise professional is a member of the professional Register for Exercise and Fitness it would appear that medico-legal responsibility is transferred to the exercise professional. The document then proceeds to suggest the role of the health practitioner *"is to make a referral into*

a system which is quality assured and to retain overall clinical responsibility for the individual” (DoH, 2001a, p.13). Although guidelines do exist as to who is legally responsible for a participant should they suffer an adverse event they are seen to be weak and open to interpretation by health professionals. The progression of ERP’s may be inhibited until such issues are clarified. Within the exercise professions there is no accountable professional body (despite the newly formed Register for Exercise Professionals in the UK) consequently health professionals are concerned about their own liability and responsibility for patient welfare during the exercise referral process.

4.2.2 Knowledge and opinion of the exercise referral process.



it would be nice to have an acknowledgement (MGP #3 - 17)

I like to know if the patient hasn't contacted them after a given length of time (MGP #2 - 72)

Maybe once I have heard that somebody has had a go at something but I think it would be really useful (FGP #4 - 43)

Some sort of feedback maybe would be good (PN #2 - 59)

feedback

Suggestions for improvement

I think you just need to communicate and I think the communication needs to be not only a one off but constant, a steady drip, drip, drip of reminders really (MGP #1 - 200)

Reminders/prompts

Knowledge and opinion of process

Just to know a little bit more about it really (PN #2 - 193)

I would like to know how many patients have been referred from ourselves (FGP #2 - 133)

I would like to know what they actually did (FGP #2 - 34)

Process

I personally would prefer for Excel to be publicised more (MGP #3 - 53)

I just wonder if you did more advertising in our practices, whether people would pick it up themselves (FGP #1 - 71)

"people who don't fulfil the criteria I think we should be able to refer anyway so that they can at least have a discussion (MGP #1 - 178)

Recruitment

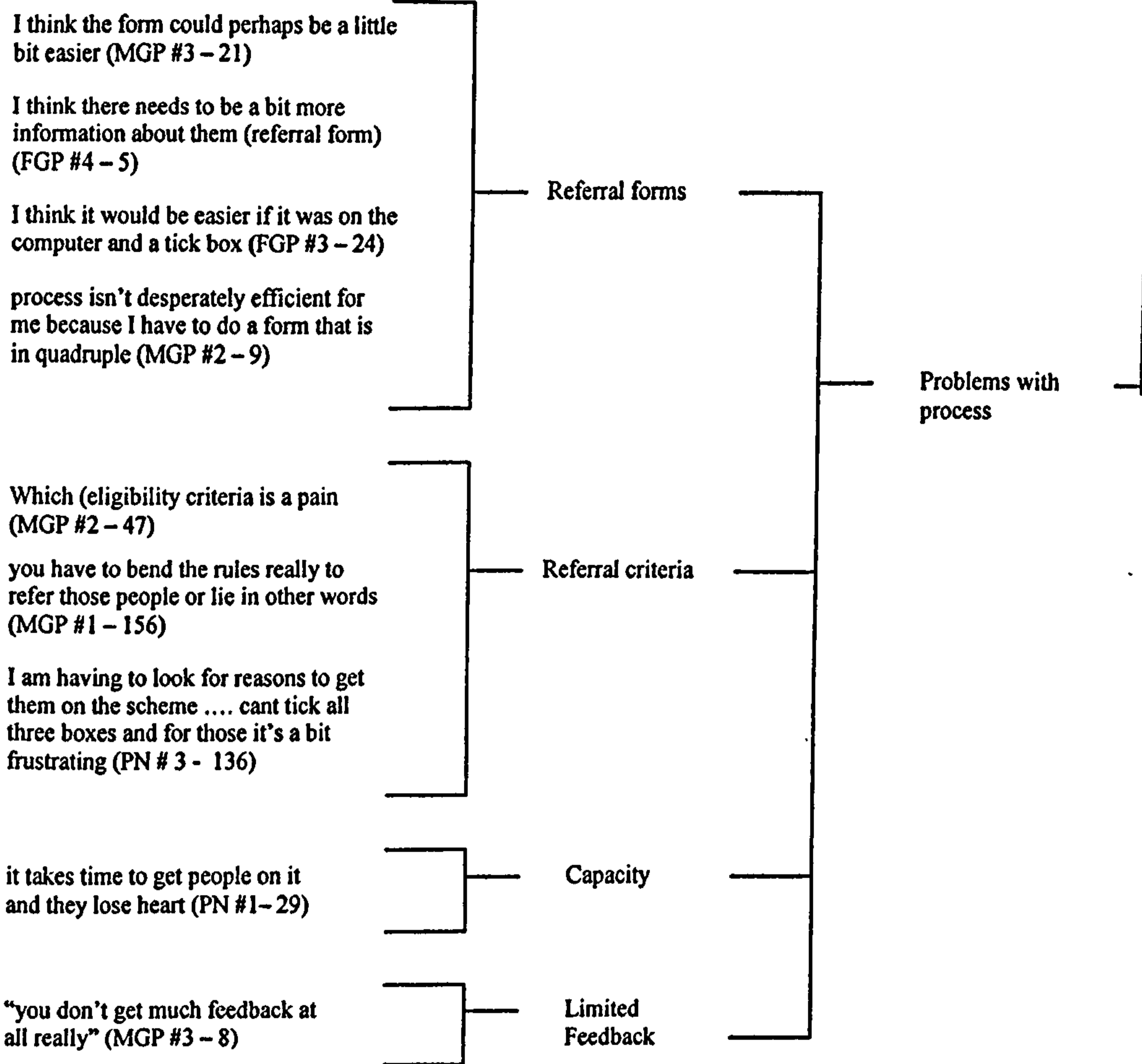


Figure 5.7 Health professionals knowledge and opinion of the exercise referral process resulting from hierarchical content analysis.

5.4.2.2.1 Knowledge and opinion of the exercise referral process - overview

Despite displaying knowledge of the health benefits that can accrue from physical activity (see section 5.4.2.3.1). Some health professionals did not express confidence in the effectiveness of EXCEL:

“In general exercise is beneficial.... I really do believe that it has a lot to offer folk in terms of disease prevention, osteoporosis, heart disease, blood pressure and obesity you know... I do endorse exercise, I don't endorse the scheme” (MGP #4 – 172,189,192)

This issue, did however, vary between professionals. One health professional confidently stated that he referred to the programme because he felt that it was an effective means of treating people:

“I refer to the scheme because it is clearly an effective way of treating people” (MGP #2 – 82).

In contrast, another general practitioner, despite referring participants to the programme, expressed caution of the effectiveness in terms of participant behaviour change both during and after the programme:

“referring people to the Excel to health programme, I am not sure whether that is translated to significant health benefits ... I am a little bit sceptical about whether or not people maintain the lifestyle changes that are promoted really and I am not sure that once they have been to Excel to Health programme whether they actually change their lifestyle” (MGP #1 – 80)

5.4.2.3 Attitude knowledge and opinion regarding exercise and exercise promotion.

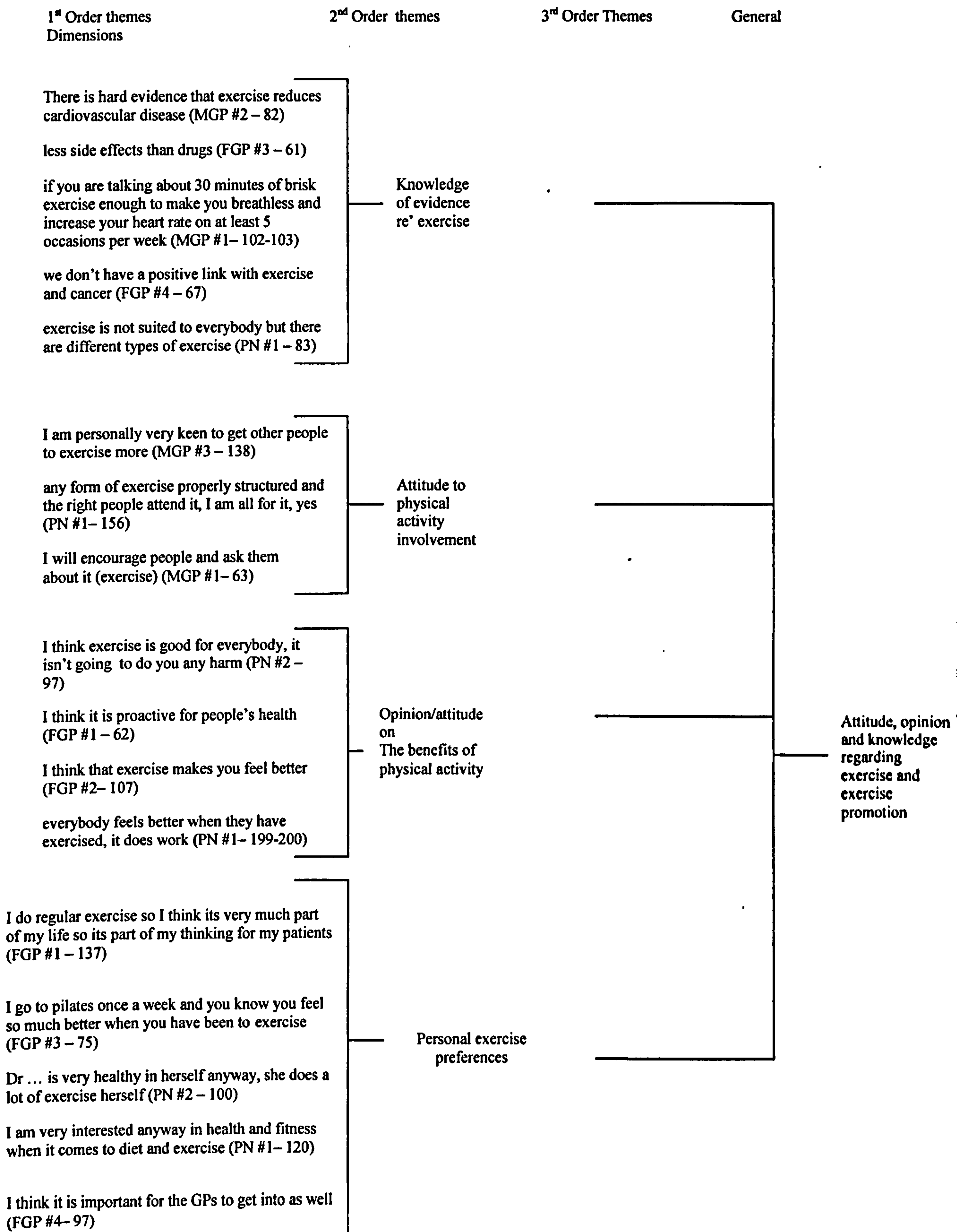


Figure 5.8 Attitude knowledge and opinion regarding exercise and exercise promotion.

5.4.2.3.1 Attitude, opinion and knowledge regarding exercise and exercise promotion - overview

Health professionals' attitude, opinion, and knowledge concerning the benefits of exercise and exercise promotion were very positive. Some health professionals were very aware of the association between exercise/physical activity and the health benefits that can accrue from participation. Specific studies, that prove the association, were quoted by one health professional:

“The Whitehall study shows it's very effective, taking blood pressure tablets and cholesterol tablets is Ineffective in terms of the amount of people you have got to treat” (MGP #2 - 86)

Another health professional, accurately quoted the Department of Health recommended guidelines for physical activity:

“30 minutes of brisk exercise, enough to make you breathless and increase your heart rate on at least five occasions per week” (MGP #1 – 102)

This information is supported by findings reported in section 5.4.2.1: the specific patient characteristics, or symptoms of disease that health professionals look for when referring to EXCEL. Within which it is reported that health professionals will refer participants for a range of reasons, suggesting that they are aware that such conditions will benefit from physical activity.

In addition, health professionals were aware of the benefits of changing lifestyle as opposed to taking pills to improve a medical condition.

“I think that exercise makes you feel better, I mean it has been shown to have effects on depression ... to reinforce the lifestyle issue is probably the most

important thing and less side effects than drugs and everything else, its probably the best intervention that they can do for themselves” (FGP #3)

5.4.2.3.1.1 Problems with the referral process

Some health professionals cited problems with the referral process. Specifically, frustration at the restrictions that are imposed by the referral criteria set by the programme provider. Some health professionals felt that participants suffering from diseases, that were not included in the referral criteria, could benefit from involvement in an exercise programme:

“I guess there are three groups and it seems quite difficult to get them on, one is young people people with raised blood pressure, I know they have got raised blood pressure, that’s why I am referring them but then they get bounce back to me thirdly ill people, I spent six months trying to get a woman who has got polyarthritis adenza on some sort of scheme, I’m just getting bounced back and bounced back” (MGP #2 - 51)

The eligibility criteria for the programme require an individual to be inactive. However, in contrary to scheme practices, some health professionals would refer active individuals suggesting that they had to make them fit the criteria in some way:

“There are lots of people who want to get a bit fitter I get quite a lot of requests for people who are already quite active, quite mobile, quite fit that have seen it somewhere and want to go on it in fact looking at the referral form there are none of those so you have to bend the rules really to refer those people or lie in other words” (MGP #1 - 138)

There needs to be an alternative for such individuals. If EXCEL is the only place that people who want to exercise are referred then when somebody is not eligible health professionals struggle to know what to do.

In accordance with scheme protocols health professionals should receive feedback about a participant's progress through the programme. Interview data revealed that feedback was inconsistent from one health professional to another.

Some health professionals received feedback:

“What happens is excel sends us some update, what happened with the patient”
(PN #3 - 90)

Whilst other health professionals did not see feedback (it is not known whether feedback is sent and is not getting to health professionals or whether feedback is not sent initially);

“I have never had an update Once I have heard someone has had a go at something but I think it would be really useful” (PN #2)

Lack of feedback to health professionals with information as to what types of participants exercise referral works best for means that health professionals have limited evidence about who best to select for referral. Sixty one percent of respondents to the survey felt that it was important to receive feedback. Health professionals suggested that they would like to receive more feedback concerning the programme, for most, in the form of basic acknowledgement. Health professionals also expressed limited knowledge in terms of what happens to the participant after the initial referral from them. The lack of knowledge

demonstrated by health professionals could be related to the lack of feedback given to health professionals (see section 5.4.1.1.1.3).

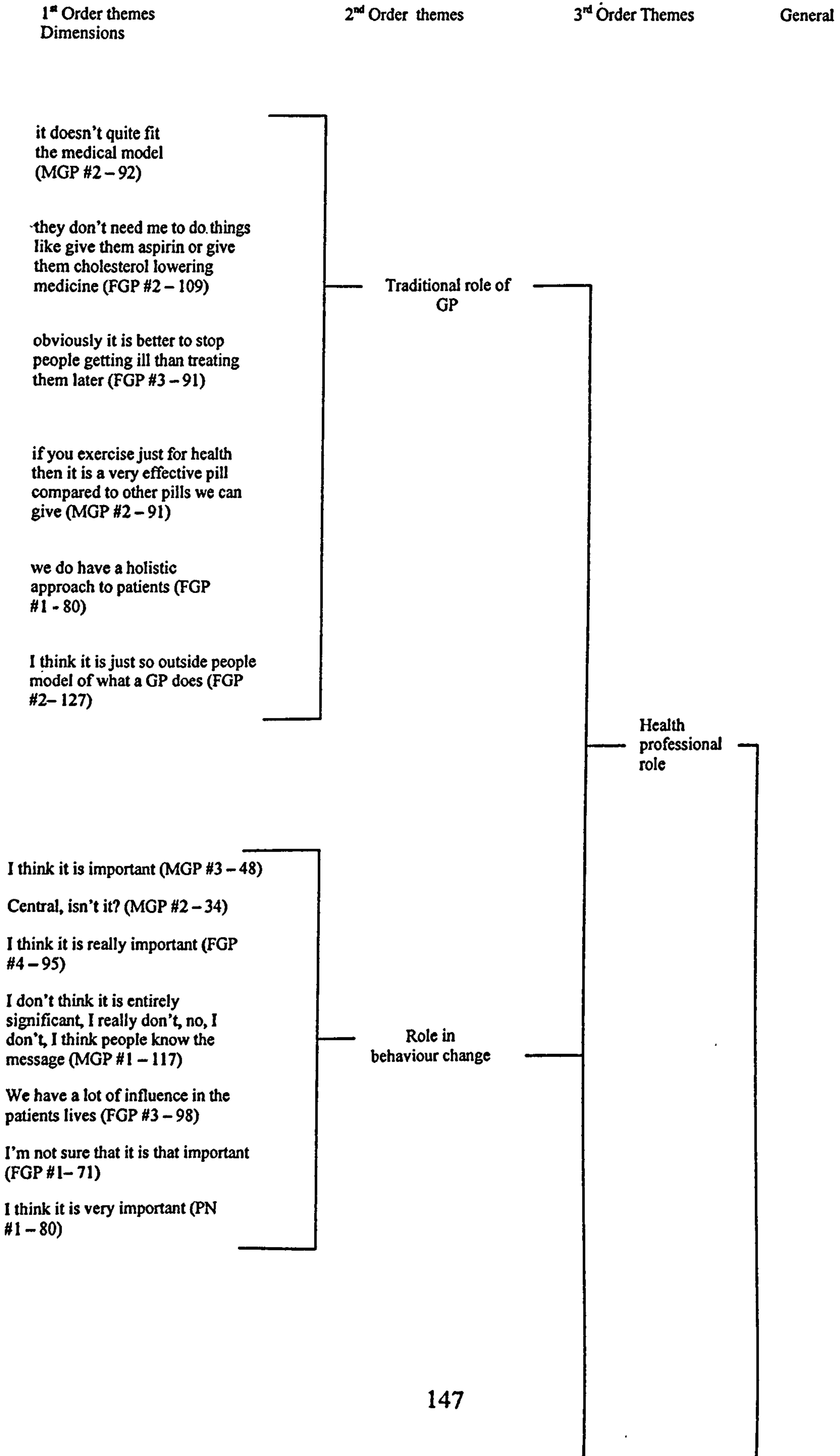
“I hope the start of excel and the promotion encourages these people to continue for as long as possible but I don’t get any feedback about whether they do”
(MGP #3 - 112)

5.4.2.3.1.2 Suggestions for programme improvement

Some health professionals gave suggestions regarding the content and methods of patient feedback. The method and content of feedback that was required varied between health professionals and ranged from details about the actual physical activity that the participant is engaged in to simple acknowledgements that a participant has attended and/or completed the ERP.

Additional suggestions were made regarding communication, feedback, and recruitment of participants (this is related to health professionals’ role in the process). Improved feedback regarding participant progress would enable health professionals to understand the process and would enable them to make an informed decision as to whether to refer a patient or not. Some health professionals expressed the opinion that they felt the scheme should be advertised in order for the participant to take more responsibility for their health.

5.4.2.4 Stakeholders role in the process



we are supposed to be all things to all people these days and it is just not going to work because we just cant manage it (FGP #3 - 87)

your just feeling that there is more and more things that a general practitioner can do (MGP #3 - 48)

Doctors have got so much responsibility and have probably got more pressing demands than handing over a leaflet about excel (PN #2 - 122)

an absolute must. I would say it is the bulk of our job really (PN #2- 167)

Opinion of role in health promotion

its probably the best intervention that they can do for themselves (FGP #3 - 61)

the patient has to take some responsibility don't they (FGP #1 - 22)

it (exercise) delivers the message to the patient that their health is within their control and that they can actually do something about it (FGP #2 - 108)

if people want to do it they shouldn't have to have doctors to push them to did it they should start recognising (MGP #3 - 90)

it is probably harder to get you on to Excel because it is not just giving the patient a tablet and telling them you must follow this regime (PN #1- 168)

"Tablets can do only so much, you have got to help them tablets as well, don't just sit back and think the tablets are going to do it all for you because they are not" you have got to help yourself (PN #2 - 187)

Patient responsibility for behaviour change

Figure 5.9 Health professional opinions of the role of the various stakeholders in EXCEL

5.4.2.4.1 Stakeholders role in the process - overview

Despite expressing a positive attitude towards exercise behaviour and a degree of knowledge regarding the health benefits of exercise, reservations were expressed in some instances of the feasibility of health promotion activity by health professionals:

“Unfortunately being a general practitioner your just feeling there is more and more things that a general practitioner can do, sometimes the last thing on your list is to suggest exercise” (MGP #3 - 46)

The underlying concept of exercise referral is that the health professional is a credible source of information for participants and thus there is an ideal opportunity to promote physical activity and motivate the participant. Mixed views were obtained with regards to the health professionals own role in the process of behaviour change. Some interviewees felt that their role was important, because of the relationship that exists between patient and health professional and the subsequent influence that they have. In contrast, a number of health professionals felt that their role was not particularly important.

There was a strong consensus, amongst the health professionals that participants should take some responsibility for their health and that EXCEL was a mechanism for them to do that. Some health professionals expressed an opinion that the referral service should be advertised more in order for participants to be proactive in the management of their own health:

“If people want to do it they shouldn’t have to have Doctors to push them to do it. They should start recognising, we should remind them perhaps of the benefits

of exercise but I don't think that we should say, right, I am going to do this for you" (MGP #3 - 91)

5.5 Chapter Discussion

This study has provided an insight into health professionals referring practices, attitude and opinion in relation to promoting physical activity using a leisure centre based ERP. Survey data and semi structured interviews have offered information concerning health professionals; referring practices to EXCEL; knowledge, opinion and attitude of the exercise referral process; knowledge of exercise and exercise promotion. In addition, semi-structured interviews provided information concerning health professionals' opinions of the roles and responsibilities of key stakeholders in the process of exercise referral.

Results obtained from both survey and interview data confirm the results of previous studies in highlighting the key barriers to physical activity promotion in primary care. Such barriers included; a perceived lack of patient motivation concerning physical activity behaviour change and lack of time during primary care consultations to refer participants (McKenna *et al.*, 1998; Smith *et al.*, 1996; Gould *et al.*, 1997; Gould *et al.*, 1995a). Additional barriers that were unique to this study included; lack of health professional knowledge concerning the aims and processes of EXCEL and limited feedback about participant progress through the ERP. Health professionals when referring a participant EXCEL also expressed concerns regarding the medico-legal responsibilities – specifically, lack of clarity about who was legally responsible for participants. Such concerns had implications as to how health professionals prioritised referral to EXCEL and was, for some, a contributing factor as to whether or not health professionals chose to refer a participant. Health professionals communicated a good level of knowledge regarding the health benefits of physical activity, opinions differed as

to effectiveness of the ERP, and their perceived role in patient behaviour change; some felt that their role was central whilst others did not. Identification of suitable participants took place during disease management clinics or routine health checks and participants were often selected for referral to EXCEL in an unsystematic way.

The results of this study illustrate the range of methods that were utilised by health professionals in order to identify participants that were suitable for referral to EXCEL. Despite expressing enthusiasm for the promotion of physical activity health professionals gave limited attention and prioritisation to physical activity promotion during routine primary care consultations. Furthermore, referral of participants to the ERP was often unsystematic. There are a number of alternative explanations for unsystematic referral and lack of prioritisation for physical activity. The introduction of preventive medicine to primary health care has meant that health professionals have a range of options available to them in terms of patient care and disease management. Health promotion practice requires general practitioners to adopt a preventive role in addition to a traditional curative role that they are accustomed and trained to do (Bowler and Gooding, 1995). However, counselling for physical activity is a skill that has not been part of traditional health professional training (Morey and Sullivan, 2003). In addition, evidence suggests that in medical literature, health professionals are underexposed to the benefits of physical activity promotion for coronary heart disease care (Dupen *et al.*, 1999).

Mechanisms may be put in place that serve to prompt and remind health professionals that they have the option to utilise exercise and ERP as an aspect of patient care. Some such methods have been identified in the current study. Reminders from participants, as in the case of some surgeries, could potentially be an effective method by which to change health professional behaviour and prompt them to refer participants. In order for this to occur, advertising of the programme would need to be placed within the surgery, a mechanism that was suggested by a number of health professionals. There is a limited amount of evidence to support this approach, however Anis *et al.* (2004) have reported counselling rates for dietary advice to be higher when educative materials are displayed in a health professional's office. An alternative method, as suggested by one health professional, was to use techniques such as those used by pharmaceutical companies,

that's why they (pharmaceutical representative) send you pens through the post because it has got the drugs name on it, even if they never see you ... you might just remember the name (MGP #1 - 185)

It is interesting to note that there is also reported variability and discrepancy in the level and prescribing patterns of drugs that are used for the prevention of coronary heart disease in primary health care (Kedward and Dakin, 2003). In addition, Jacoby *et al.* (2003) have suggested that health professionals have relatively little information concerning the side effects of drugs prescribed for the prevention of coronary heart disease. In this sense therefore, in terms of Coronary Heart disease prevention provision, despite the contrasting nature of providing lifestyle and pharmaceutical interventions there is some commonality in the problems and issues that are raised by health professionals.

Training sessions and accompanying resources have been suggested (Calnan and Williams, 1993) and identified as a mechanism to overcome barriers and engage health care professionals in physical activity promotion (Sims *et al.*, 2004). Levels and styles of physical activity promotion by health professionals can be related to level of training concerning such issues (McKenna *et al.*, 2004; Gould *et al.*, 1995a) and confidence to prescribe physical activity is increased when training session and practical resources with regard to such issues are provided (Swinburn *et al.*, 1997 and Lewis and Lynch, 1993). Health professionals that referred to EXCEL had not received any training with regards to programme process; only 11% of respondents to the survey correctly stated that the programme was a result of collaboration between Sefton Council and Sefton Primary Care Trust and interview data revealed that almost all interviewees expressed limited knowledge of what exercise referral entailed for participants, beyond their referral. This study supports the findings of Smith *et al.* (1996b) in suggesting that there is a lack of communication between health professionals and exercise providers, about ERP processes and participants' benefits. Despite published guidelines concerning the operation of ERP's (DoH, 2001a) this may be a key factor that inhibits health professionals' decision to refer to the programme.

Some authors have suggested that dependence on General Practitioners to identify those patients with most to gain from physical activity and consequently refer them for a physical activity intervention is hindered by the limited knowledge of the health benefits of physical activity that they possess (Hillsdon, 1998). Results of this study, in contrast to those reported by Gould *et al.* (1995a)

and Smith *et al.* (1996b) suggest that health professionals have a good level of knowledge concerning the health benefits of physical activity. The results support the suggestion by Hillsdon (1998) that dependence on health professionals to identify participants that are suitable for referral may be problematic but for different reasons.

This study directly addresses the limited explanatory ability of previous studies that have sought to understand health professional attitude, opinion and practice using quantitative research methods. Results provide an in depth “contextual” understanding of health professionals understanding and practice with regards to exercise referral and may be used to determine what is required to encourage and persuade health professionals to refer systematically to an ERP. In future ERP providers should explore and take into account the complexities of promoting exercise from health professional perspectives. In addition, improved communication between exercise professionals working on the ERP and health professionals referring will facilitate greater understanding of the processes, aims, objectives, and participant progress from the health professionals’ point of view.

CHAPTER 6

EXERCISE PROFESSIONAL PERSPECTIVES OF THE EXERCISE REFERRAL PROCESS

6.1 Chapter introduction

Previous chapters have outlined the views and perspectives of both health professionals (chapter 5) and participants (chapter 4) concerning the process of the EXCEL ERP. In addition to health care practitioners exercise referral officers are integral to the delivery of EXCEL and have a range of duties to perform. The National Quality Assurance Framework for exercise referral programmes outlines the competencies and skills that are required of the various professionals who both refer participants to such programmes and deliver the ERP (DoH, 2001a). The professionals who are involved in ERP delivery are defined as both, ERP co-ordinators and exercise professionals. Seven individuals (one programme manager; four exercise referral officers and two support officers; collectively referred to as exercise professionals) are employed, on a full-time basis, by the Sefton leisure services division of Sefton Borough Council in order to work on the ERP.

The programme manager is responsible for the management of the EXCEL programme. The primary role is to communicate with programme commissioners (Sefton Primary Care Trust) and senior management (of Sefton Council) to secure funding and raise the profile of the EXCEL programme. The specific role of the exercise referral officer is to assess the participant's health status, design an appropriate programme of activity, and subsequently monitor participant progress. The support officers provide administrative support to exercise referral officers, and in addition monitor and provide telephone support to participants. All exercise professionals involved in the delivery of EXCEL (programme manager; exercise referral officers and support officers) may need to

communicate with the health professional who has referred the participant or the exercise instructor who will supervise their weekly programme of physical activity.

According to the NQAF ERP co-ordinators must possess “*an understanding of the competencies and roles of all the other professionals involved in the scheme*” (DoH, 2001a, p. 34); “*co-ordinate the joint actions of all individuals and agencies involved in the scheme*” (DoH, 2001a, p. 34) and also ensure that participants are referred to an appropriate exercise venue with an appropriate exercise instructor. Advanced exercise instructors are expected to “*demonstrate the ability to design exercise programmes with special considerations relating to the comfort and safety of the patient*” (DoH, 2001a, p. 39); and “*understand the social (economic and cultural) characteristics of patients referred*” (DoH, 2001a, p39). In consideration of the NQAF guidelines, all exercise professionals that are employed by EXCEL are expected to demonstrate the competencies required of both ERP co-ordinator and of an advanced exercise instructor.

The National Quality Assurance Framework for exercise referral systems suggests that an adequate level of communication (amongst the various professionals involved) is a precursor to programme success. Results of three case study examinations of ERP’s concluded that the success was dependant upon staff enthusiasm and the maintenance of a good level of communication between the organisations that are involved (Riddoch *et al.*, 1998). Likewise, participants enrolled on the EXCEL ERP have expressed the opinion that support and encouragement from staff is a key factor in determining a positive exercise

experience. The integral role of the exercise referral officers to the operation of the EXCEL ERP means that the skills and abilities that they exhibit and their relationships with other stakeholders may be vital to programme success.

The six employees of Sefton Leisure Services are the only professionals who are in direct communication with all other stakeholders of the programme and are the first point of contact for participants attending the programme. As such, of all the professionals and stakeholders that are involved in the delivery of the EXCEL programme, those employed by Sefton Leisure Services are most integral to the operational delivery of the programme. Despite the importance of exercise referral officers to programme design and delivery, there have been no published studies to date that have examined their attitudes, opinions, and experiences concerning the operational delivery of an ERP.

6.2 Study Aims

This study aims to establish the views and perspectives of the exercise professionals in relation to:

1. Their level of communication and relationships with health professionals and programme commissioners.
2. The perceived roles and responsibilities of stakeholders involved in the programme (including themselves)
3. Aspects of participant management that they feel are important.

6.3 Methodology

This study was concerned with capturing the exercise professionals “point of view” with regards to programme operation. In consideration of the advantages of qualitative method in facilitating “thick description” (Denzin and Lincoln, 1994), and the small number of exercise professionals involved in the programme (n=7) qualitative method was adopted.

6.3.1 Techniques

Semi-structured, one-to-one interviews were utilised for data collection (Patton, 2002). Typical questions included; what is your role and main responsibilities? What would you say are the main roles and responsibilities of the health professionals? Can you describe the relationship you have with the health professionals? What is the importance of having a close relationship with health professionals? Can you describe your relationship as the referral officer with the patient? What would you say is a successful outcome then for a patient who has gone through the programme? What would you say are the major strengths and weaknesses of the programme?

6.3.2 Participants and sampling methods

All employees of Sefton Leisure Services involved, directly, in the delivery of the EXCEL programme (n=7; one programme manager; four exercise referral officers and two support officers) were interviewed.

Table 6.1 Exercise professional details

Job Type	Age	Gender
Scheme Manager	35	Male
Exercise referral officer (ERO1)	25	Female
Exercise referral officer (ERO2)	26	Male
Exercise referral officer (ERO3)	26	Male
Exercise referral officer (ERO4)	28	Female
Support officer (SO1)	24	Female
Support officer (SO2)	28	Female

6.3.3 Procedure

Interviews were conducted between March and April of year 2003. Interviews were administered, at a convenient time for the professionals, at their workplace. Following reassurances of participant anonymity and confidentiality and signed consent, interviews were recorded. Interviews lasted between approximately 30 and 60 minutes in duration.

6.3.4 Data analysis

Interviews were recorded using a cassette recorder and were subsequently transcribed verbatim by the primary researcher (Rebecca Graham). Transcripts and audio recordings formed the medium for analysis of data. This enabled detailed inspection of critical points of the conversations (Silverman, 2000).

The objective of data analysis was to elicit exercise professional perspectives of the ERP. Using the study aims to provide an analytical framework for the data analysis an organised system of categories were built from the unstructured data (Côté *et al.*, 1995, p.6). Category labels were applied to interview transcripts using a “cut and paste”, procedure, as outlined by Krane (1997). This is a process whereby quotations from interview transcripts were copied and grouped together into a new word document with similar quotations.

6.4 Findings

6.4.1 Exercise professional's opinions of stakeholder roles

There was a consensus that within the overall process of the programme, the role of the exercise referral officers was to assess participant’s needs, devise a suitable programme of activity, and subsequently monitor progress through the programme:

“The main roles and responsibilities of the referral officers is to make an informed judgement based of their technical qualifications and their experience of building physical activity into somebody’s life to bring about change whether it be behaviour change or a change in their physical condition like blood pressure” (Scheme Manager, 82-85).

In addition, the long-term implications of the devised exercise programme for a participant’s health and well-being were recognised. Exercise referral officers felt that it was also their responsibility to ensure that participants adhered to the programme, and, because of experiences whilst on the programme, continue with their physically active lifestyle in the longer term:

“The main reason I’m there is for them to be keeping active and carrying on with their exercise after the fourteen weeks” (ERO1, 262-264)

“My job when they have finished here is that they are motivated and ready to go and they are happy with what they have started and it is when they get out there it is when I am not with them so you know” (ERO3, 306-308)

In the opinion of the exercise referral officers the health professionals’ role was to identify suitable participants for the programme and provide correspondence of their medical requirements:

“They plant the seed really. It’s for them to either bring it up with the patient or a patient to go and ask them so they’re the person that sort of like is the starting point for them” (ERO1, 24-26)

“I think it’s their responsibility to identify who needs to come on, who they think would benefit from the scheme, who basically needs it I think” (SO1, 47-48)

One officer spoke of the requirement for health professionals to utilise a model of health behaviour change, the transtheoretical model, in order to ascertain the “readiness” of participants to join the programme:

“Identifying the correct clientele to come on, that is the main one. Making sure that the person they are sending through is at the stage of change is ready to begin exercising, is at contemplation or readiness, obviously the forms are filled in correctly so we don’t have to send them back or find out more information about the client” (ERO3, 276-279)

Exercise referral officers were also of the opinion that the participants of the programme also have responsibilities for themselves – that is to adhere to the exercise programme that has been devised for them:

“They’ve got to be responsible enough to take what we’ve said on board and try and do what we’ve recommended really so, yes, it’s all down to them we can’t

make them do anything, we can only help them and point them in the right direction” (ERO1, 231-236)

“They have to adhere to what we set out to them and they have to adhere to the correct exercisers and level at which they should be working to” (ERO2, 428-432)

“They have to have a certain level of motivation, they have to be really ready to do something as well, they need to be able to stick to the programme and see it as something important” (ERO3, 318-319)

It was felt that an important part of the health professional’s role was to make participants aware of their responsibility for their own health:

“They should give us full information on referral stating everything we need to have to make an appropriate referral. And also, to make the patient aware of their responsibility” (Scheme Manager, 11-13)

6.4.2 Participant Management

Exercise referral officers were aware of the complexities of health behaviour change for population subgroups and of the broader, personal factors that can/do influence exercise participation. When assessing need and devising a programme, in addition to accounting for the physiological requirements of participants (e.g. pathology), exercise referral officers demonstrated an appreciation of participants’ social and economic circumstances:

“I assess clients and give them exercise programmes. I’ll assess their needs from what illnesses and things that they have and see which is the most appropriate form of exercise to give them to help through the lifestyle” (ERO1, 7-10)

“It’s no good me telling someone to get up and go to the gym three times a week when they’ve got child care issues and low income and responsibilities as carers who cannot physically do that” (Scheme Manager, 368-373)

“Say for instance it is a single mum with kids at home and she is not going to be able to go in the evenings, or she needs to go somewhere where there is going to be a cheap crèche or a free crèche and things like that and let her have her time as well as not having to worry about her children and making sure that they are safe as well” (ERO2, 442-445)

Exercise referral officers were also sympathetic to the fact that prior to attending the programme some participants had very little, if any, experience of participating in structured physical activity. Participants attended their initial assessment with mis-conceptions about the exercise and the environment; it was the responsibility of the exercise referral officer to support participants in the early phases of the programme:

“Putting them at ease and get rid of mis-conceptions that they have got and making sure it is not what they thought it was going to be all these lycrafied buddies running around or big body builders and what have you and just making them feel at ease and letting them know that we are there for them and providing that support and building their relationship” (ERO2, 442-445)

Exercise referral officers felt that it was necessary to interact with participants in an individualised manner and provide a programme of exercise that; accounted for their personal circumstances and requirements and would be enjoyable:

“We take each one (participant) as it comes basically, because each person is an individual” (ERO2, 441-442)

“I think they’ve got to find something that they enjoy” (Scheme Manager, 175-177)

“In terms of the patient. I want them to enjoy it” (ERO2, 471-480)

“I am quite keen on making sure that they are enjoying what they are doing to start with, initially anyway. That they just learn to enjoy the exercise side of it and I think that is really important so they don’t see it as a chore or something that they just have to do, that they actually enjoy what they are doing and then try and either build it up enough so it is impacting their health a bit. But if you

find something they enjoy doing then they are quite likely to do it more often as well” (ERO3, 360-374)

Exercise referral officers felt that if participants did not enjoy an exercise programme then they would be less likely to continue both in the short and long term:

“If they don’t enjoy it then the likelihood is that they are not going to complete the scheme” (ERO1, 131-137)

In an attempt to provide an individualised and enjoyable programme and, in addition provide some responsibility for participants, exercise referral officers asked participants what exercise they would prefer/enjoy:

“All the officers do ask them what type of activities they prefer, individual, group sessions, social settings whether they’re actually ready to do any formalised team based exercise, so we try and get as much information off the patient as possible” (Scheme Manager, 149-152)

“We try and always let the individual, the referred patient make a choice on what they’d like to do I think it takes people in different ways, some people might come in and see all the fancy equipment and think that’s for me, but other people can be dissuaded by it and prefer a social setting” (Scheme Manager, 144-149)

Ultimately, however, the decision as to the most appropriate referral venue and exercise was left with the exercise referral officer. There was clear evidence that exercise referral officers considered all aspects of a participant’s requirement when selecting an appropriate exercise and venue:

“I don’t refer any young people to the nack (Netherton activity centre) even if they live close by to be honest, they can go to other sessions within Netherton activity centre. Yes you have your gym sessions but you’ve also got your other

sessions that operate from Netherton as well. But when they come along, it depends on the individual, it depends on the conditions that they've got. I get a lot of people from Bootle and they do actually request Bootle leisure centre, and it's only if they are a high risk and I'll say no, I do want to send you along to Netherton activity centre. Yes, it may be an extra five minutes on your bus route, but that's where I want you to go" (ERO4, 263-269)

"If the patient wants to go to somewhere where I don't rate as highly as other, I will tell them, I will say, you're not going to get looked after as much as if you went here or if you went to this person or, but that's more likely for gyms like the classes and the hospital and that, I know they get looked after and there's no problem with that but yet they do" (ERO1, 155-159)

6.4.3 Exercise professional's opinions of stakeholder communication

Exercise referral officers felt that communication with health professionals (with regards to participants and the programme in general) could be kept to a minimum. As far as the exercise referral officers were concerned communication with health professionals was necessary at the end of the programme to provide information on participant progress and during the programme only if further information about a participant was required:

"The health professionals refer their patients onto us and any correspondence that needs to be made I will, you know at the end of the programme I will correspond, if I have got any queries throughout the programme I try and get in touch with that Doctor themselves" (ERO4, 97-101)

"The only time I really need to build up a relationship is when we phone up and need more information from them, for them to be aware who we are and that they have referred this patient and all we want is further information to help the patient" (ERO1, 56-60)

Exercise referral officers felt that attempts to communicate with health professionals, concerning a participant, were met with tensions and difficulties:

“It is often hard to try and get in touch with the Doctor” (ERO4, 97-101)

Attempts to communicate with health professionals were often impeded by clerical and administrative staff within the surgery. In most instances, exercise referral officers were diverted to practice managers or practice nurses. In this sense, clerical staff within surgeries appeared to be acting as “gatekeepers”, allowing limited access to general practitioners:

“Most of the time (when you try and contact the GP) you’ll either get the secretary or they pass you over to the practice nurse” (ERO1, 44-49)

“GP wise it I think it is something that is pretty tricky to get to see them I can’t really think of the GPs I have actually met it has mainly been the practice managers or the nurses who you can see a lot easier” (ERO3, 208-214)

A number of exercise referral officers hinted at problems with the approachability of general practitioners:

“I don’t mind e-mailing and chatting with them because they are a lot more open to conversation” (ERO4, 106-113)

“We don’t really have much contact with the GP’s as such, there’s some of them that are more approachable than others” (ERO1, 44-49)

There was also a general view that communication with practice nurses was easier since they were more willing to return phone calls and communicate with exercise referral officers:

“I’ve found it easier to get in contact with the practise nurses ... they’re more willing to get in contact in return to us overall” (ERO2, 108-110)

“Practice Nurses are a lot more better, you get a lot more correspondence with them and they will give you a call and they will e-mail as well” (ERO4, 106-113)

In addition to difficulties of communication exercise referral officers also expressed concern with regards to the appropriateness of some of the referrals that they received from the health professionals. Some participants were referred to the programme but did not understand, in some instances that they were being referred for exercise and in other instances were not aware of the finer details of the programme. The absence of such information led to a misconception, on the participant's behalf of what the programme entailed and consequently caused exercise referral officers difficulties when managing participants:

“We do get a few coming through who possibly haven't thought about what they are doing, maybe the GP hasn't spent enough time just saying what it would include, for them to actually agree to it properly you know. You sort of think the GP says “This is what I think you should do” they say “yes” and before you know it that's just like taking some medication but it's a bit more involved than that” (ERO3, 104-111)

“It happened a couple of times, where I've had people ring me up and say, but the doctors given this referral form to him and he just turned up at Bootle leisure centre saying can I get a free swim, ive got my prescription like ...the fact is that we need to make sure they're referring to us appropriate at all times and that actually they're giving correct information out to the patients, rather than just handing over the leaflet that comes with the Excels health scheme, say read this, they know exactly, it's a fourteen week programme, it will cost you some money to go on but you get a very reduced rate” (ERO2, 138-145)

“We get a lot of referrals through and people phone us and they haven't really got much of a clue what we're all about because the GP's don't bother explaining to them and when we speak to them, it's something totally different from what they expected so from our point of view I think that's something they should do rather than just give a leaflet, or some of them don't even bother doing that” (SO2, 73-82).

In addition, some participants are referred that do not meet the programme eligibility criteria. This is a further complication of the limited knowledge health professionals exhibit with regard to the programme and exercise in general:

“There was a lady we had on last week she was referred because she had arthritis I think, so I phoned her to see if there was any other referral reasons but it seems that she’d been passed from a physio back to a GP from a GP back to a physio and they both had told her about excel for health and that she could come onto this scheme, so we accepted her basically because she’d been passed from pillar to post and I didn’t think it was fair basically saying no we can’t deal with you either and that was just from her being given incorrect information from both her GP and physio. Whether that’s our responsibility, whether that’s a fault on our part or not, I’m not too sure” (SO2, 290-298)

The programme receives funding in order to help reduce the incidence of coronary heart disease in Sefton. Therefore, on this basis, there is a requirement that participants who are referred to the programme must exhibit at least two coronary heart disease risk factors. In the instance that a participant does not exhibit risk factors, but the general practitioner feels they will benefit from activity, they are referred to the programme.

The programme manager expressed concern as to how health professionals perceived the competencies of exercise professionals working on the EXCEL ERP:

“Obviously, they see us as an outside party where say something like theor the dietetics they see them to have a clinical standing and that’s where I feel we’ve been let down. Even though we’re funded by the PCT and we have expectations that we’re supposed to achieve we’re still seen as an outsider and not so much as a clinical, no clinical accountability ... your just seen as gym instructor or glorified gym instructors and I don’t think they know the whole structure of what we do and how we do it and the qualifications and the people and the experience of the people as well” (Scheme Manager, 37-39)

This was also a problem so far as the Primary Care Trust were concerned. The programme manager expressed concern over the way in which the Primary Care Trust perceived the programme. One concern was that the programme was higher risk than other referral services, such as changing dietary behaviour and he felt

that EXCEL did not have the same standing in the health professionals' minds as such services.

“We shouldn't have to beg steal and borrow Equipment, we can't afford that so we can't get the updated version, we're dealing with peoples lives ... , if someone starts taking HRT, unless they've got a certain underlying medical condition, no matter who it is, they will not die. Dieticians, if someone goes from eating sausages to fruit and veg, they're not going to die instantly, if we get the exercise prescription wrong and there is an underlying medical condition, or they are at higher risk, which most of them are, they're going to drop dead on us and it's only been, touch wood, that nothing's happened and we're just flying by the seat of our pants and we can't afford to do it anymore” (Scheme Manager, 456-470)

It was felt that although the Primary care trust supported the programme financially, but the relationship needed to be improved:

“It's not the best relationship ever, I think we need to have more pro-active stance on meeting them regularly, setting some targets that we need to achieve, getting away from knocking numbers out and being quality instead of quantity and actually changing people's lives for the better They back us financially which is great and it pays the bills and you get the offices and stuff, but we need to have backing as in raising the profile” (Scheme Manager, 295-296)

“We're getting support from the smaller networks, but the smaller networks can't provide us with funding and can't get us to where we want to be. It's the larger networks we need to be looking at you know, the NHS, PCT why don't they help us and the importance of physical activity” (ERO4, 161-170).

“We need a lot more support from the other sectors around us especially from the PCT we'd have made a lot faster progress if we actually had a lot more help from the GP's and the PCT themselves” (ERO4, 143-149)

“We've done certain things for training for primary care like the diabetes conference and stuff like that and we do get positive feedback and everybody shouts that exercise is really good but it's the old saying, put your money where your mouth is and then start letting people know” (313-316)

In recognition of the difficulties surrounding the relationship with health professionals, exercise referral officers were asked how they believed the problems could be overcome. Despite previously suggesting that minimal contact

with health professionals was required, increased communication between health professionals and exercise professionals was one area where there was room for improvement. This could be achieved by exercise professionals becoming an integral aspect of each primary health care practice. This would subsequently lead to a greater appreciation, from health professional's perspective, of what the programme entailed:

“We need to sit down, we need to be brought into the practise meetings, speak to them and have some time to actually sit down and go through the whole process of what we do” (Scheme Manager, 339-345)

“Maybe just bring up more chances to get more dates with them (health professionals) really, wherever it is possible to get round to see them, but also for them to take some of the onus on themselves and actually contact us as well and come through and say, well we want this from that cause at the moment it does feel like we approach them at all times” (ERO2, 241-245)

“I think there needs to be more communication, I don't think they've seen many of the doctors. It'd be a good idea if they went to join a practise meeting maybe once a quarter or even once every six months to try and fit everyone in because my impression from joining in August is they, I think Ian's been to see a couple and Sue's been to see a couple, they (health professionals) don't have time either” (SO1, 69-73)

Despite recognition that health and exercise professionals should converse about the operational aspects of the programme, apprehension was also expressed at the limited time that health professionals had for such matters:

“I really do think we need to sit down with every GP and speak to them and tell exactly what we do and I think that would help immensely, but there's just no way that they're going to sit down with us, they just haven't got the time” (ERO1, 335-338)

The programme manager felt that the programme needed an experienced health professional to work closely with exercise professionals:

“We ideally need to have a GP who sits on our board, not just ... who looks at something and passes it on, but we need to have somebody to physically sit here ...we need somebody who knows it from the general practitioners angle, but also knows it from the physical activity angle, but not just the physical angle, the sports medicine angle of it, not ‘cause I do a bit of exercise and know what I’m talking about, it’s the actual evidence based stuff that we need to keep referring to” (Scheme Manager, 489-496)

“I think we need to raise the profile of, we’re not a Mickey mouse scheme type thing, it’s not oh it doesn’t matter, it does matter if your doctor has asked you to do this, you wouldn’t miss it what a heart check up, you wouldn’t miss something with the consultant, so you shouldn’t miss this. And I think employees as well say, I can’t get time off work, but you give them time off work to go and see the doctor or the dentist or whatever, it’s just exactly the same. Without this health intervention or lifestyle intervention these people might become sick and then they won’t be able to work. So I just think, raising the profile more with everyone in the whole of Sefton would be beneficial for us and we wouldn’t have to chase our tails probably” (ERO1, 313-322)

Medico-legal responsibility

The programme manager was not aware of the problems concerning litigation.

“Although everybody say’s, oh yes you’ve got indemnity and stuff, nothing’s ever happened so we don’t know exactly what would happen. I couldn’t physically say, if somebody dropped dead now, what I would do, would I have to go to court?, have I got legal recourse?, is it my responsibility?, is it the GP’s responsibility?, there’s nothing set out in the protocol to say. So we need to revamp it and pull it completely apart, because how old is it? Did it have any medical input?” (Scheme Manager, 456-470)

6.5 Chapter Discussion

This study aimed to elicit exercise referral officers attitudes and opinions about the roles, responsibilities, and relationships with both other programme personnel and participants. Exercise professional perspectives of the exercise referral process have not previously been considered.

In summary, the results of this study have provided an insight into; the practical difficulties that exercise referral officer's experience when attempting to communicate with health professionals; the tensions of partnerships between professionals working in public health, primary health care and leisure services; how exercise referral officers practically intervene with participants of the programme, and the factors that exercise referral officers feel are important to successful participant management. An additional finding was the lack of understanding, on the programme manager's behalf, of the issues surrounding the medico-legal aspects of programme implementation.

The National Quality Assurance framework outlines the requirement for the process of exercise referral to be client centred. In order to do this it is recommended that participants be supported in an individualised manner. Exercise referral officers working on the EXCEL ERP adopted a holistic and "client centred" approach to participant management. In addition to the participant's medical requirements, social and economic circumstances were taken into consideration when considering an appropriate referral venue. The ERO felt that it was their duty to devise a programme of exercise that was individualised and enjoyable in order to enhance the chances of participants adhering to exercise long term.

In accordance with the standards of the National quality assurance framework for exercise referral systems, exercise referral officers were clear in their understanding of the health professionals' role in the programme– that was to identify participants that are appropriate for referral and ensure all relevant

information is communicated to the exercise referral officer. Exercise referral officers felt that they did not require a large amount of communication with health professionals and tended to contact them only when they required advice concerning a participant. However, attempts to contact general practitioners were fraught with problems and in most cases, information was obtained from a practice nurse or practice manager. This subsequently led to a large amount of correspondence occurring with practice nurses.

Exercise referral officers expressed concern that health professionals did not fully understand the ERP in its entirety. They felt that this lack of understanding affected the way in which the programme was promoted to potential participants. Despite the development of “referral criteria”, Exercise referral officers also felt frustrated at the lack of attention to “referral criteria” and the lack of information given to participants by health professionals when referring. Both of these factors may have resulted in attendance at initial assessments of “inappropriate” participants.

The programme manager was particularly concerned by the lack of professional credibility given to the programme by both health professionals and professionals working within the primary care trust, and the resultant limited support given to the programme. It was felt that this was, in part, a result of the limited understanding of the programme. The lack of support was a concern for the development manager because of the risks of “prescribing” an inappropriate exercise programme.

This study has enabled an understanding of the level and nature of communication/relationship that exists between exercise referral officers and other personnel involved in the implementation of the EXCEL ERP. The potential tensions surrounding such relationships have been highlighted. In particular the research has highlighted the difficulties that exercise professionals experience when attempting to communicate with health professionals. Also, exercise professionals perceive that the health professionals do not give the EXCEL ERP the clinical standing that they deserve.

CHAPTER 7

SYNTHESIS, DISCUSSION AND RECOMMENDATIONS

7.0 Chapter introduction

This thesis aimed to understand and critically deconstruct, using key stakeholder perspectives, the processes involved in the pragmatic implementation of a primary care based ERP. A unique multi-stakeholder (participants, exercise professionals and health professionals), multi-method evaluation approach (Johnstone, 2004; Goodstadt *et al.*, 2001) was adopted. This chapter aims to:

- Present a synthesis of the key findings.
- Discuss key findings in relation to previous research concerning ERP's.
- Discuss the implications of key findings in relation to the design, implementation, and evaluation of ERP's.
- Provide recommendations for both the implementation of ERP's and future research.

7.1 Summary of key findings

Outline summaries of the key findings are presented in table 7.1.

Table 7.1 Outline summary of the key research findings

STUDY AIMS AND OBJECTIVES	RESEARCH QUESTION	KEY FINDINGS
<p>STUDY ONE</p> <p>To determine the exact population that attended, and completed the EXCEL intervention</p> <p>To explore the impact of the scheme in terms of physical activity behaviour change (adherence) and health gain (changes in monitored physiological parameters).</p>	<p>What are the demographic profiles of participants who attend the EXCEL ERP?</p> <p>What are the demographic profiles of participants who complete and do not complete the EXCEL ERP?</p> <p>Do physiological parameters significantly improve after a 14-week programme of exercise?</p> <p>What are the trends in the referring practices of general practitioner surgeries?</p> <p>What type of health professional is most successful in achieving participant adherence?</p>	<p>The most common population sub-groups (from pre-defined categories of gender; age; referral reason and job status) at scheme commencement were described as female (n=614); aged between 46-60yrs (356); overweight (n=366); retired individuals (n=384). Sixty three percent of participants who commenced the EXCEL scheme were female.</p> <p>Approximately 34% of participants adhere for the full ERP intervention (14 weeks).</p> <p>Participants presenting with certain referral conditions (e.g. myocardial infarction) show double the adherence rate of other referral conditions (e.g. mental illness).</p> <p>Male participants have a higher adherence rate than women, although they are referred less frequently.</p> <p>Adherence increases with age category, with participants aged less than 30 years old being least likely to adhere.</p> <p>Physiological changes over the ERP period are relatively small in terms of the health benefit gained.</p> <p>Participants referred from cardiac rehabilitation and practice nurses have higher adherence rates than participants referred by their general practitioner.</p>

STUDY TWO

To develop an understanding of the experience of an ERP from the participants' perspective. Specifically to determine the factors that influenced exercise behaviour at critical stages of the exercise referral process.

What were the barriers to physical activity behaviour change, for participants, prior to attending the ERP?

What factors influenced participants decisions to attend the ERP in the first instance i.e., exercise adoption?

What factors influenced participants decisions to adhere to the ERP (complete the 14 week intervention)?

What benefits do participants experience as a result of programme adherence?

Safety concerns and limited funding were barriers to participants beginning a programme of exercise.

Participants of the EXCEL scheme felt intimidated by the equipment within the gym environment and experienced feelings of self-consciousness and lack of confidence in body image during the early stages of the programme.

Advice from a health professional was a key factor affecting a participant's decision to start a programme of exercise.

Participants expressed a desire to begin a programme of exercise in order to ameliorate symptoms of ill health that affected them daily in a functional and mental way, and also to prevent the onset of ill health in the future.

The personalised nature of the programme was articulated as a positive aspect of the exercise referral experience.

Group exercise provided support and encouragement for participants and also contributed to an enjoyable experience whilst exercising.

Participants articulated personal preferences for exercise throughout the exercise referral programme, in terms of type of activity, support and provision, feedback.

Whilst some participants were capable of continuing the exercise programme independently, others, evidently, were unable to independently initiate a programme of exercise after a period of relapse.

Participants cited a wide range of beneficial outcomes as a

		<p>result of scheme participation that were physical, social, functional and psychological in nature.</p>
<p>STUDY THREE</p>		
<p>To investigate key factors that affected programme operation from the health professional's perspective.</p>	<p>How do health professionals practically select participants for referral to an ERP?</p> <p>What are general practitioners perspectives and views with regards to:</p> <p>Referring participants.</p> <p>The process of referral.</p> <p>The role of physical activity in coronary heart disease prevention.</p> <p>Health professional's role in the process of behaviour change.</p>	<p>Exercise promotion is not a priority for health professionals during routine general practice consultations.</p> <p>Participants are often selected for referral in an unsystematic way.</p> <p>When considering the possible referral of participants health professionals considered a participant's eligibility according to referral criteria; financial situation and also; motivational mindset.</p> <p>Health professionals' attitude, opinion and knowledge of the benefits of exercise and exercise promotion were positive.</p> <p>Confidence in the effectiveness of EXCEL varied between health professionals.</p> <p>Barriers to referring participants included limited scheme capacity; lack of feedback with regards to participant progression and health benefits; lack of clarity of legal responsibility for participants.</p> <p>Health professionals receive limited feedback with regards to participant health benefits.</p> <p>There is lack of clarity regarding medico-legal responsibility for participants referred to an ERP.</p> <p>Referral behaviour varies greatly between health professionals.</p>

		<p>Local health professionals do not have the evidence that ERP works therefore they are less likely to refer.</p>
<p>STUDY FOUR</p>		
<p>To establish exercise professionals perspectives of the delivery of theERP.</p>	<p>What were exercise professionals attitudes, opinions and working practices in relation to:</p> <p>Communication and relationships with health professionals and scheme commissioners.</p> <p>Roles and responsibilities of stakeholders involved in the scheme (including themselves)</p> <p>Participant management.</p>	<p>Exercise professionals felt that it was there role to provide individualised and enjoyable exercise programme for participants. Taking into consideration the participants personal circumstances.</p> <p>Exercise professionals experienced difficulties when attempting to communicate with health professionals.</p> <p>Exercise professionals expressed concerns of health professionals and programme commissioner's perceptions of "exercise" as a lifestyle intervention for the promotion of health.</p> <p>Exercise professionals felt that communication with exercise professionals could be kept to a minimum and was only absolutely necessary when a participants had completed the scheme, or if further information about a participant was required.</p> <p>Improved communication and greater health professional involvement in the programme would be a mechanism to overcome some of the difficulties that were experienced.</p>

7.2 Synthesis

This study has revealed some of the basic complexities of implementing a primary health care initiated exercise programme. In particular, the complexities of influencing exercise behaviour change in individuals, and of inter-professional partnership working.

The rationale for promoting physical activity from within the primary health care setting was outlined in the introduction to this thesis (section 2.2, p.15). Advice from a health professional was a key factor that influenced participant adoption of the EXCEL ERP. In this sense, findings from this thesis support suggestions that patients perceive health professionals to be a credible source of health advice (Calnan and Johnson, 1983), and consequently are receptive to such advice (Godin and Shepard, 1990). However, key findings from this study also highlighted some of the problems of promoting physical activity from within the primary health care setting. Firstly, results reported in Chapter 3 suggested that the EXCEL programme operated with an inefficient targeting strategy. There was large disparity in the number of participants referred by health professionals. Some surgeries referred up to 51 participants in a year period (2001-2003), in contrast to other surgeries that referred between 1-10 participants. Secondly, results reported in chapter 5 suggested that health professionals gave limited prioritisation to physical activity and, in some instances, adopted unsystematic referral patterns. Results reported in chapters 5 and 6 highlighted some communication problems between health and exercise professionals. Finally,

only thirty-four percent of participants who initiated the EXCEL scheme subsequently adhered to the 14-week exercise programme.

Participants of the EXCEL ERP were both a complex and heterogeneous group in terms of reasons for adopting exercise behaviour, reasons for adhering to the programme, explanations for exercise behaviour post-scheme and health improvements experienced. In addition, some population sub-groups benefited from EXCEL more than others did. Male participants; aged 71+; who had previously completed a programme of cardiac rehabilitation and were retired exhibited the highest percentage adherence for each category. Participants of the EXCEL programme experienced a wide range of physiological, functional, social, and mental health benefits. This has also been a key finding of previous studies that have attempted to explain participant's experiences of an ERP (Stathi *et al.*, 2003; Hardcastle and Taylor, 2001; Crone-Grant and Smith, 1999). Whilst physiological improvement was in a positive direction, for most parameters there was negligible improvement.

Exercise professionals recognised the importance, and influence of psychosocial factors to participant's exercise levels. However, interviews with participants revealed that broader factors were not always considered when a programme of exercise was devised. Furthermore, the monitoring processes that were utilised by exercise professionals accounted, only, for physiological change that participants may have experienced because of programme participation. The promotion of exercise at a practical level is directed by exercise guidelines (Wimbush, 1994; Sallis and Owen, 1999). Guidance for designing an exercise

programme based upon pathology, physical capacity and medication is readily available to exercise professionals (since this data lends itself to reductionist philosophy that characterises exercise science). There is however less evidence, or availability/accessibility of evidence to support exercise professionals in considering the broader influences upon exercise behaviour.

These key findings exemplify the *National Quality Assurance Framework* guideline that an activity programme be devised in consideration of the individual characteristics of the target population. In addition, key findings advocate proposals that adults' physical activity behaviour should be considered in respect of their "life as a whole" (Thurston and Green, 2004). The findings of this thesis may assist service providers in developing practical guidance for individualising the process. For example, figures 4.6 and 4.7 highlight that broad ranges of factors affected participant's decision to adopt and adhere to the exercise programme. These included factors related to the exercise programme (for example, supervision, and advice), participants' perceptions of their health status (both present and future) and the social environment within which the exercise took place.

Partnership working is an underlying principle of the recent Public Health White Paper "*Choosing Health: Making healthier choices easier*" (DoH, 2004b). This thesis also outlined some of the complexities of inter-professional partnership working. There was a lack of communication and connectedness between exercise referral officers, other exercise professionals (who are based primarily in leisure settings), and the health professionals (who are based in primary care

settings). Inter professional partnership working can be problematic due to the different training experiences and subsequent competencies articulated by professional groups (Richards *et al.*, 2000). Exercise professionals articulated difficulties in attempts to contact health professionals. The National Quality Assurance Framework for ERP suggests that “*a scheme is more likely to demonstrate best practice if all of those involved understand their roles and commit to the process and there is partnership working with an identified lead from either primary care or leisure services*” (DoH, 2001a p. viii). All parties should be involved in the development and design of the programme. Despite the importance of the health professionals’ role in the delivery of the ERP, it was evident that they had a relatively small role to play, if any, in decisions concerning the design or the delivery of the programme. Only 11% (n=8) of respondents to the general practitioner postal questionnaire correctly cited the scheme as a collaboration between Sefton Primary Care Trust and Sefton Council.

The recent publication of the *Chief Medical Officers report on physical activity, “At least five a week”* (DoH, 2004a) and the *Choosing Activity delivery plan* (DoH, 2005) means that health professionals will be further challenged to engage in exercise promotion. Key findings outlined in chapter 6 (see table 7.1) indicated that health professionals were a relatively heterogeneous group in terms of their attitude, opinion, and knowledge concerning exercise promotion in primary health care. There was disparity in referring practices; unsystematic referring practices and a range of barriers to referring participants were also identified. The findings of this research support, previously expressed concerns

of health professionals' ability to adequately identify and refer participants to an ERP (Johnston *et al.*, 2005; Riddoch *et al.*, 1998 and Fielder *et al.*, 1995). Findings from the present study have advanced understandings in terms of why health professionals may refer unsystematically and consequently provide advice and guidance for improving referring practices. Health professionals who referred participants to the EXCEL programme expressed some degree of knowledge about the health benefits of physical activity. However, health professionals also gave limited attention and prioritisation to physical activity promotion. Gould *et al.* (1997) suggested that the requirement for health professionals to engage in preventive healthcare was not supported with sufficient training. Results obtained from this study are supportive of such findings. If exercise promotion within primary health care, using ERP is to be effective there needs to be closer partnership working, involving training for promoting exercise in General Practice. Such training may be provided locally by exercise professionals that are employed to manage and deliver the referral programme or, alternatively may be provided by an external agency by an exercise science support service such as the "proactive management service" as outlined by Crone *et al.* (2004). In addition, greater feedback concerning patient benefits is needed in order to overcome some of the practical and perceived barriers for health professionals.

The National Quality Assurance Framework for Exercise Referral Systems offers guidance for the selection of participants for referral to an ERP. The document suggests, "*Schemes should establish medically led selection criteria*" (DoH, 2001a, p. 18). Despite the use of selection criteria, health professionals were faced with pragmatic difficulties (lack of knowledge concerning the aims and

processes of EXCEL and limited feedback about participant progress) when selecting participants for referral. Consequently, participant identification and referral to the programme was unsystematic. Government support and funding may be needed to increase some health professionals' endorsement of exercise promotion in primary health care. Increased and secured funding for exercise promotion from the National Health Service, with the inclusion of guidelines and incentives and the same commitment that goes into smoking cessation may change health professionals' attitudes concerning exercise promotion in primary care, reduce barriers, and increase prioritisation of exercise promotion by health professionals (Coote, 2003).

Additional approaches to participant targeting and recruitment at the primary health care level might improve the effectiveness of ERP's in increasing population exercise levels. A systematic approach to exercise promotion in PHC may be achieved by utilising a screening mechanism to identify all sedentary patients in a practice population. Priority groups could subsequently be identified for targeting from the 'sedentary list' of patients. Other alternative targeting methods would be to promote exercise in individuals who attend health checks (healthy, asymptomatic) or those that attend disease management clinics within the practice.

Both health and exercise professionals articulated the difficulties of assisting participants who required exercise advice but were not eligible (in accordance with referral criteria) to attend the ERP. As a consequence health professionals referred inappropriate participants, i.e. those who they felt could benefit from the

exercise but were not necessarily eligible for the programme. Likewise, exercise professionals expressed frustration at the inappropriate referral patterns of health professionals. Such findings are suggestive that one referral pathway for all participants may be insufficient. Service providers should consider a number of different care pathways and additional outlets for different people. For example, some participants (perhaps inappropriate referrals) can be given information leaflets and options of what they can do independently but still have a consultation with the exercise referral officer.

7.3 Conclusion and recommendations

7.3.1 Conclusion

The results from this thesis make an important contribution to understandings of ERP effectiveness. The study is unique in both method and focus, and as such contributes to the ERP evidence base in a number of ways.

- The focus of experimental research to date has been to determine if an ERP increases physical activity. Qualitative methods utilised in the presented study have permitted an understanding of process-based issues concerning ERP implementation and as such provide some explanation behind quantitative and factual information.
- The appropriateness and pragmatic issues of inter-professional partnership working in relation to an ERP have rarely been investigated. Previously qualitative investigations concerning ERP effectiveness have focused, predominantly, upon participant perspectives. The present study

was unique in that it combined the perspectives of three stakeholder groups and attempted to examine the exercise referral process in its entirety.

- Findings are both timely and relevant to an advancing political climate that advocates health professionals as central to influencing physical activity levels in practice populations (DoH, 2005). In this sense, the findings of the research are of particular relevance to service providers of the EXCEL ERP. However, the findings are also of significant relevance to health and exercise professionals, and organisations, concerned with health development and policy target delivery – that is, to increase understanding of the design and implementation of effective, community based, exercise interventions (Hillsdon *et al.*, 2005; McKay *et al.*, 2003).
- Qualitative research method was adopted on the basis that it would embrace the complexity of exercise intervention design and delivery (Goodstadt *et al.* 2001; Springett, 2001; Nutbeam *et al.*, 1998). Qualitative methodology has produced “context” specific results and information. Such information may be disseminated to practitioners, and utilised in order to improve operational aspects of physical activity promotion in primary health care.

The importance of an “exploratory” research phase when evaluating complex interventions was detailed in the Medical Research Councils “*Framework for development and evaluation of RCT’s for complex interventions to improve health*” (Medical Research Council, 2003). The results of this research provide a practical example of how such an “modelling phase” can be designed and

accomplished within the field of ERP evaluation. Specifically, with reference to the participant population – the quantitative results obtained from study 1 (chapter 3), and the qualitative results from study 2 (chapter 4) can be combined to determine what population sub-groups will respond most positively to the intervention, and also why and how the intervention alters physical activity behaviour. The use of qualitative and quantitative data provided details of health professionals' attitude, opinion, knowledge, and referring practices to the EXCEL ERP. In addition, qualitative data provided some explanations for health professionals, attitude, opinion, knowledge, and referring practices towards the programme.

The field of ERP evaluation is characterised by a distinct lack of “modelling” studies that have examined interventions in their entirety (i.e. from the perspectives of all stakeholders involved). This research provides details of the key factors that may influence the successful implementation of an ERP. As such, this research provides a direct resource for further academic research that aims to examine the effectiveness of ERP's. The studies add credibility to the effective use of qualitative research methods in order to evaluate complex community interventions and *“closely describe processes that are central to improved delivery of exercise promotion”* (McKenna and Vernon, 2004, p. 955).

7.3.2 Recommendations

The preceding sections of this chapter and previous chapters within this thesis have outlined some of the issues that should be considered when designing,

implementing, and evaluating an ERP. The following recommendations are presented for service providers (both exercise and health professionals), policy makers, and researchers to consider when designing, implementing, and evaluating the delivery of ERP's. Recommendations have been categorised into four key areas; partnership working; monitoring and evaluation; participant support and targeting of participants.

7.3.2.1 Partnership working:

The structural interface between exercise and primary health care personnel needs strengthening. This may be achieved by:

1. Involving all key stakeholders in the design, implementation, and evaluation of the proposed ERP.
2. Providing regular training workshops for health professionals about exercise and health issues (for example, current research evidence, evidence of effectiveness of the ERP protocol and programme development). These workshops should be implemented in partnership with exercise professionals and academics with an understanding of practice. It would also enable the differences in referring practices to be explored in more detail and best practice in referral to be identified.
3. Locating the ERP more closely within the Primary Care team. For example leading the delivery directly from the primary health care setting.

4. Producing a local area agreement between the EXCEL ERP and the Primary Care Trust (incorporating the above recommendations). This may overcome disparity in referring practices of health professionals and problems of restrictions in referring criteria. In addition it would ensure the continuing development of a quality assured and accountable service. Within the service level agreement, the needs of the local population should be identified and subsequent targets for delivery (in terms of populations and numbers) should be set.

7.3.2.2 Monitoring and Evaluation

*Integral evaluation should be continued and developed in conjunction with the identified information needs of the ERP providers and associated partners. The standard and success of ERP's can be continually improved with the input of clear, objective evidence that can illustrate the strengths and weaknesses the programme design and delivery (Riddoch *et al.*, 1998). A range of measures should be utilised to monitor participant progress and outcomes whilst on the programme. Suggested factors should include, psychological parameters (quality of life scores, general well-being) in addition to physiological parameters.*

Research and practical implementation of programmes should have a strong focus upon improving quality and sustainability. In order to improve the quality of the exercise referral process (and issues such as adherence and sustainability in the longer term) there needs to be a move away from the focus on throughput of participants (how many participants can we get through the programme in a

year) to a focus on improving and understanding the process in order to enhance adherence (Riddoch *et al.*, 1998; Hardcastle and Taylor, 2001).

7.3.2.3 Participant support

Exercise referral programme needs to become much more diverse in its approaches to exercise delivery and patient support. Programme personnel should take into consideration:

1. The use of a participant progress file. The file can be used as a means of motivation for participants (through recording progression), and may incorporate expert advice at each stage of the exercise programme. As a result of the progress file, upon completion of the programme, the participant is equipped with a resource to refer to should they relapse from taking part in exercise. Greater effort needs to be taken to ensure that upon programme completion participants are equipped with skills and knowledge to respond positively in the face of relapse.
2. The introduction of a peer mentoring system to the programme delivery. Observation of what other participants had achieved (in terms of health improvement) whilst on the programme was a key issue related to adherence to the programme. Successful and enthusiastic participants can become a supportive resource for individuals in the early stages of the ERP.
3. Allowing a participants' spouse/partner/friend to join the programme. Support from a spouse (particularly in older individuals) appears to be a

- key factor in adherence to the 14-week programme and adherence to exercise/physical activity post programme.
4. The utilisation of post programme support mechanisms. A period of transition should ease individuals into an alternative mode of exercise if participants are unable to continue exercising in the format known to them throughout the exercise programme.
 5. Varying length of programme as a means to individualise the process. At present, the length of the ERP programme is 14 weeks for all. Participants should be empowered with the necessary behaviour change skills to remain active once the period of referral has ceased. As all participants will learn behaviour change skills at a different rate it would make more sense to assess each person's readiness to leave the programme and become an independent exerciser. Links with other community based exercise programmes (e.g. Healthwalks) are important so participants can make the transition to independent exerciser before the end of the ERP.
 6. It is not acceptable to recommend the same programme of exercise to each client, but rather to provide an individualistic programme of exercise based on a number of key factors. In addition to considering the participants pathology, physical capacity and medication, exercise referral officers should consider the participants psychological, social and practical requirements (e.g. exercise history and personal circumstances) when designing a programme of activity.

7.3.2.4 Targeting

The targeting of participants for the referral needs to be systematic in nature.

One suggestion for how this can be achieved is by utilising a screening mechanism to identify all sedentary patients in a practice population would be a key starting point for systematic exercise promotion in primary health care.

Targeting of healthy, sedentary patients would be a more proactive method for disease prevention. Patients are referred to an ERP on the basis that they exhibit risk factors for coronary heart disease or are already obese.

It would also help the ERP to become a mainstreamed service, which is adequately resourced in the longer term e.g. at least five years. The current lack of long term funding will influence the stability of staff employment within the programme and this will in turn affect delivery and adherence rate of patients.

7.4 Recommendations for further research

- Further research to understand the type of data health professionals would favour with regards to programme process and participant progression, and how often, may enhance the reputation of the ERP, and lead to better quality referral patterns (i.e. health professionals becoming more targeted in their approaches).

- There needs to be further understanding of how different population sub-groups experience the programme. Work needs to be carried out with the groups who are attending well to understand why this is happening.
- Further research should focus upon understanding the experiences, attitudes and perceptions of participants who do not adhere to exercise referral programmes.
- Further explanatory research should focus upon understanding the pragmatic implementation of programmes from key-stakeholder perspectives. This will assist in improvement of ERP success.
- Using research methods that embrace the complexity of prescribing behaviour, further research should explore health professional perspectives of the exercise referral process in other regions in the UK. Identification of how health professionals select participants in addition to understanding the factors that influence referral behaviour will assist in the development of improved targeting and referral strategies.

7.5 Strengths and Limitations

The main strengths of this study lie in the research methodology that was adopted. The qualitative data reported throughout has advanced knowledge of the processes that underpin the delivery of an ERP. The data directly addresses the inability of previous experimental trials to determine how ERP influence behaviour change (Harrison *et al.*, 2004; Harland *et al.*, 1999; Stevens *et al.*, 1998; Taylor *et al.*, 1998). Taylor *et al.* (1998), when reporting the results of a

randomised controlled trial, called for further research to determine health professionals perspectives of the referral process, this study directly responds to such calls. Study 2 addresses the limitations of previous qualitative investigations of participant experiences that have examined perspectives at one period in time (Stathi *et al.*, 2003; Singh, 1997). This study is unique in that it has investigated all stakeholder perspectives of the referral process; previously stakeholder perspectives have been examined, but in isolation to each other (Crone *et al.*, 2005; Wormald and Ingle, 2004; Crone-Grant and Smith, 1999; Stathi *et al.*, 2003; Hardcastle and Taylor, 2001; Singh, 1997; Smith *et al.*, 1996a; Smith *et al.*, 1996b; Gould *et al.*, 1995a). The perspectives of exercise professionals have not previously been investigated.

The limitations of the research must also be addressed. With the exception of the exercise professionals (whereby all professionals working on the programme were interviewed) all participants (health professionals and participants) were self-selected to take part in the research. In addition, all participants had adhered to the intervention. In this sense, the participants perspectives reported in study 2 are likely to be of participants who are both positive and enthusiastic towards the exercise programme. Also, all participants that were interviewed actively sought participation in physical activity. Further research needs to examine the perspectives of those individuals who are less enthusiastic about exercise and ERP's, for example those participants who do not adhere to the intervention. The same can be said of the health professionals that were interviewed, all were enthusiastic about exercise. However, two of the health professionals that were interviewed did not refer to the programme and provided an alternative

perspective of ERP's. The response rate to the postal questionnaire was 49%, whilst this response rate is comparative to other postal questionnaire surveys, the ability to generalise the findings as the opinions, attitudes of all health professionals in Sefton is questionable.

CHAPTER 8

REFLECTION UPON THE RESEARCH PROCESS

8.1 Reflection upon the research process

“Telling the story” of how research was done can assist readers in making judgements about the credibility or quality of a study (Seale, 1999). However, the lived experiences of conducting research are rarely reported (Hallowell *et al.*, 2005). Research practice is portrayed in academic literature as a linear process (Hallowell *et al.*, 2005). Initially I approached the research from this position. In my experience, however, the research process was not linear or clear-cut. Research questions and methodological choices for each study were not explicitly stated at the start of the research process; instead, such choices were formulated and developed as the research progressed. By reflecting upon and outlining significant experiences of the research process I aim to provide an insight into, and make transparent, the development of the research process and the challenges and dilemmas that I have encountered throughout.

8.1.2 Research development

In accordance with evaluation guidelines (Springett and Dugdill, 1999) the first step of the research process was to complete a descriptive study of the ERP. The results of study one subsequently informed and directed the development of the research in terms of research questions and methodological choices. It became clear from the findings of study one that the process of exercise referral was inefficient for a large proportion of the participants involved, and was ineffective from a health outcome perspective. This descriptive information could not, however, tell us exactly how or why this was the case.

Therefore, the next phase of the research aimed to examine participants' experiences of the ERP. Qualitative method was utilised since it involves a naturalistic approach to its subject, with emphasis on processes and meanings (Denzin and Lincoln, 2000).

The decision to interview health and exercise professionals was based upon; an awareness that there was limited understanding of process issues from other stakeholder perspectives; and also, the need to understand the whole system of exercise referral. Furthermore, the results of study two outlined the importance and influence of health and exercise professionals upon the participant experience.

8.1.3 Competing paradigms.

The research was inter-disciplinary and, consequently, complex in nature. This meant that I had to be aware of knowledge from exercise science, health promotion, health and exercise psychology, evaluation methods, sociology, and to some extent social policy. Understanding concepts and terminology from a range of disciplines was at times difficult. In addition, I was conscious that the findings of this “naturalistic” enquiry (Patton, 1990) had to be of practical significance to the scheme providers, whilst also adhering to the rigorous standards of an empirical research study. During the early phases of the research, this created some conceptual confusion. As a novice researcher, I struggled to comprehend the idea of conducting both “research” and “evaluation”. The two were conceptually different practices - how could I combine both? The problem was exacerbated by the lack of stakeholder involvement in the research process. Despite

numerous attempts to ascertain information, from both the scheme providers (Leisure Services) and the scheme funders (Primary Care Trust), it was difficult to establish what they wanted to achieve from the research process. Whilst the stakeholders were willing to endorse the process, at times I felt frustration at the stakeholders' limited willingness to endorse or engage in a critical discussion of the research process. It was easy to forget that the exercise professionals that I was collaborating with did not have expertise in the area of evaluation.

8.1.4 Researcher roles

I approached the research from the perspective of an “outsider” to the referral programme (Patton, 2002). My role, as an independent evaluator, was to independently evaluate the exercise referral programme. During the first six months of the research this role changed somewhat. I began to work for Sefton Leisure Services as an ERP support officer (for one day per week). I was effectively executing two roles; firstly as a professional working on the programme and secondly as a professional evaluating the programme. It may be suggested that by working on the programme I compromised the “neutrality” of the research. Upon reflection, this proved to be a valuable experience. The role involved mainly administrative assistance to an exercise referral officer and occasional supervision of a group, gym-based exercise session. It enabled an insight into scheme practices and politics that ordinarily, as an external evaluator, I may have not seen. During this period I was conducting study one. Working as an administrative assistant meant that participant information was readily available.

Data collection for study two occurred 4 months after I had ceased to work on the ERP. Consequently, participants of studies two and three knew me only as a researcher. I did not feel that the neutrality of the research was compromised, however, to ensure credibility of the findings a number of practices were observed. Firstly, in order to prevent misinterpretation data analysis was frequently discussed and reviewed with my supervisor. Secondly, participants were asked to clarify key concepts during the tracking interviews. And finally, I have presented the findings as a list of themes as they emerged so that other research can test them in further research.

My previous experience and knowledge of the promotion of physical activity was beneficial to understanding participant perspectives of exercise and the ERP. However, at times I felt myself in a moral and ethical dilemma. I felt that, in some instances, there were aspects of participant care that needed to be changed in order to improve the chances of long-term exercise adherence. However, for reasons of confidentiality I was unable to relay some of the specific information, revealed by participants, to exercise referral officers. Similarly, I felt that the opportunity to “talk” and reflect upon their experiences (i.e. during interviews) may have enriched the participant experience of the referral programme. I may have become a source of support for participants. This realization was confirmed when I met a participant six months post scheme completion. We spoke about her feelings post ERP and discussed the reasons why she did not continue with exercise. During the interview the participant declared that “having met with me, it might give her a kickstart to begin exercise again”. She could not enter the

scheme again (since she had completed the allotted 14-weeks exercise programme), and since I had approached the interview in my role as researcher I could only advise her to contact a professional from the scheme and seek advice.

8.1.5 Data analysis and representation

Most of the data obtained from the interviews was analysed after data collection had been completed. In total 49 interviews (participants n=32; health professionals n=10; and exercise professionals n=7) had to be transcribed, managed, read, interpreted, coded and represented (Creswell, 1998). Data obtained from scheme participants proved difficult to analyse and represent. I can recall numerous discussions with my supervisor during which we talked about a decision to represent the participants as individuals or as a collective group. Eventually we decided to present participant perspectives collectively, in the form of a tree diagram. Narratives and quotes from individual participants were used to support key findings.

The use of computer software to assist in the analysis of qualitative data was considered during the research process (Weitzman, 2000). The strengths and limitations of utilising computer software for qualitative data analysis is a much-debated issue (Kelle, 2004). Greater efficiency in data organisation, consistency in analytical procedures; facilitation of communication in a research team; and increased transparency in the research process are amongst some of the cited advantages (Weitzman, 2000). As a “new researcher” I felt that it was important to experience manual data analysis before using computer software

(Weitzman, 2000). Having considered the advantages outlined above I felt that, although I had a large data set, it was not unmanageable, and I would not benefit from greater communication within a research team since I would be the main researcher. I was also influenced by suggestions that the procedures associated with qualitative analysis can be achieved through the use of word-processing software (Stanley and Temple, 1995).

8.1.6 Summary

From a personal perspective this thesis has been a lived and embodied experience. I have learnt much throughout the process, both from a personal and academic perspective. My knowledge base has expanded in terms of; research paradigms and methodologies; effective practice in programme evaluation; physical activity determinants; and the importance of stakeholder perspectives in understanding and improving intervention delivery. This knowledge, coupled with experience of employing qualitative and quantitative research techniques has provided a significant training experience to continue to practice as an academic researcher.

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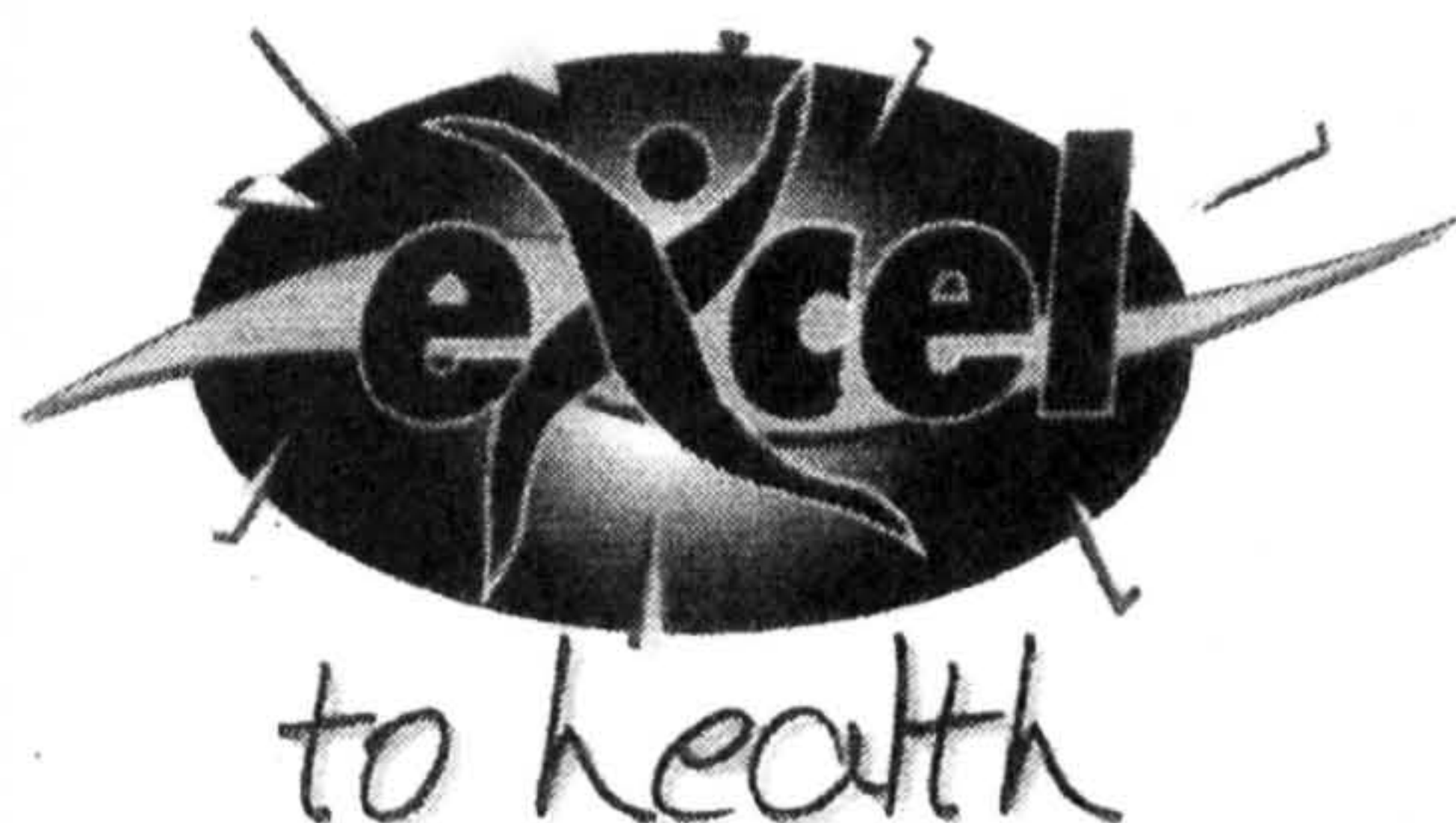
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APPENDIX 1

SCHEME ELIGIBILITY CRITERIA



Referral Criteria

SEFTON'S COMMUNITY BASED EXERCISE
REFERRAL SCHEME

Procedural Guidelines for GP's

The patient must have been inactive for at least the last 3 months and exhibit at least two of the following CHD risk factors:

SUITABLE for Referral

- ✓ Smoker
- ✓ Family history of heart disease
- ✓ Hyperlipidemia
- ✓ Obesity/overweight
- ✓ Controlled Hypertension (no greater than 200/100 mmHg)
- ✓ Anxiety/Stress/Depression
- ✓ Diabetes Type I & II
- ✓ Inactive
- ✓ Stable treated angina
- ✓ Post MI who have completed Cardiac Rehabilitation, who have had an Exercise ECG Stress Test and who are clinically stable (not awaiting further investigation)

NOT SUITABLE for Referral

- ✗ Severe COAD
- ✗ Angina which cannot be controlled by medication
- ✗ Other atherosclerotic disease
- ✗ (Stroke within the last 12 months)
- ✗ Uncontrolled hypertension (diastolic over 100mmHg)
- ✗ Recent complicated MI awaiting further investigation
- ✗ Uncontrolled arrhythmia that may compromise cardiac function
- ✗ Unstable psychiatric disorders
- ✗ Uncontrolled diabetes (excessive hypos)
- ✗ Pregnancy
- ✗ Under 18 year olds
- ✗ People already taking part in a structured exercise programme

The Referral Process

- Give patient information leaflet
- Fill in referral form with as much detail as possible
- GP/Health Professional and Patient sign referral form
- Seal the Referral Form and send to:

Sefton MBC
Excel to Health
Leisure Services Department
Pavilion Buildings
99-105 Lord Street
Southport
PR8 1RJ

APPENDIX 2
REFERRAL FORM

APPENDIX 3

No 000201



to health

SEFTON'S COMMUNITY BASED EXERCISE REFERRAL SCHEME

Referral Form

G.P.

Please PRINT throughout

Name: D.O.B. / .. / ..

Address:

.....

Post Code: Telephone:

Reason for Referral:

Current Medication:

Prior History: (please tick)

- Asthma, Bronchial Problems
- Cardiovascular Disease, Heart Problems, Chest Pain
- Hypertension
- Epilepsy, Diabetes
- Arthritis, Bone/Joint Injuries

Additional Comments:

.....

Name/Signature of health professional:

..... Date:

PRACTICE STAMP



CROSBY AND MAGHULL PCG

Sean Cahill: EXCEL to Health, Netherton Activity Centre, Glovers Lane, Netherton, Liverpool. L30 3TL. Tel. 07866 598889

APPENDIX 3

ACTIVITY GUIDANCE FORM (EXAMPLE)

Activity Guidance

Client Name:
Referral Officer:
Resting Blood Pressure:
Main reason for Referral:

D.O.B.
Start Date:

Phone No
End Date:
Resting Heart Rate:
Weight:

Other health considerations / Medications / Precautions:

Atrovent

Antimuscarinic Bronchodilator

Side Effects: Nausea , Headaches

*Salbutamol

Anti-asthmatic (Short acting selective beta₂-agonist inhaler)

Side effects: Asthma inhaler may cause palpitations and a raised heart rate, so use RPE scale for monitoring workload. It can also cause nervous tension, headache and fine tremor (hands). Make sure that the warm up and cool down is longer than normal to prevent an attack. As with all asthmatic preparations DO NOT allow the client to exercise if they do not have their medication to hand.

*Seretide

Anti-asthmatic

Side Effects: Acute palpitations, headaache

Frequency / Time: 2 sessions per week. Start with 30 minutes and build to a maximum of 60 minutes.

Intensity:

- An RPE of between 12 & 14. **Do not rely on heart rate monitoring.**
 60% - 80% of PMHR, in relation to fitness level.

Type:

Aerobic

Rest in between, drink fluids

Treadmill (walk) **2 x 10 mins Manual**
Treadmill (jog) **X**
Bike **2 x 10 mins level 1**
Recline Bike
Stepper **X**
Cross-Trainer
Rower **3 mins level 3**

Resistance

Quads
Leg Press **2 x 12**
Abdominals **2x12**
Chest **2x12no weight**
Upper Back **1x10 no weight**
Lower back **2x12 no weight**
Shoulders **X**
Biceps **X**

(Usually low weight / high reps,
as with all beginners.)

If you have any further queries please do not hesitate to contact me.

Additional Information:

When adding resistance please use in circuit training style. Ensure resistance is completed in good form before adding weight. Start with no weight, just aim for full range of movement and make sure client does not hold her breath. Please make sure that a thorough warm up and cool down are given remembering that with respiratory heart rate there will be an accelerated increase in heart rate at the onset of exercise., and that stretches are part of the programme for clients cool down. Due to the severity of the disease there is an inequality in ventilation-perfusion resulting in hypoxemia. This condition can be worsened through exercise which is why client should only work at minimum intensity. COPD causes cardiovascular deconditioning due to reduced physical activity, with individuals experiencing accumulation of lactic acid at low work rates through muscular deconditioning. ???? should under no circumstances exercise with even the slightest sign of infection, and should **NOT** exercise without her inhalers. Allow her to progress slowly initially all machines may not be covered start with 3-4 machines after first 3-4 weeks and build up gradually as her cardiovascular system is reconditioned. Allow her to take as much rest as required during exercises and stop exercises at any sign of breathing difficulty.

Family Contact:**Name:****Tel:****Referral Officer:**

Note to fitness instructor: Please use your expertise to update the client's programme, providing progression where appropriate. The referral officer will be in contact with the client during the 14-week programme and will remain responsible for the administration of the programme. Responsibility for consenting to take part in an exercise programme, observing the advised precautions and following the guidance given by exercise professionals rests with the EXCEL To Health participant.

If you have any further quires please do not hesitate to contact me.

APPENDIX 4

HEALTH PROFESSIONAL COVER LETTER AND POSTAL QUESTIONNAIRE.

Dear Doctor/Practice Nurse

The Research Institute for Sport and Exercise Sciences have been commissioned by **Merseyside Health Action Zone** to conduct an independent evaluation of the Sefton exercise referral scheme "Excel to Health".

In order to effectively evaluate the Excel scheme, the perspectives and views of all those involved needs to be considered. The views from yourselves as GPs/Practice Nurses are of vital importance as your role is imperative to the success of the Excel scheme.

Please could you complete the questionnaire enclosed, it should take no longer than **5 minutes to complete**. This is an **independent evaluation** targeting all General Practitioners and Health Professionals and Practice Nurses within the Borough of Sefton. The views of practitioners who do not refer are as valuable as those who do. All responses will remain **confidential**. Please could you return the questionnaire in the **Freepost envelope provided by the 20 January 2003**.

Your help in completing this questionnaire would be greatly appreciated.

We thank you in anticipation.

Yours faithfully

Rebecca Graham BSc (Hons) Dr Lindsey Dugdill Professor Tim Cable
(The research team, Liverpool John Moores University)



Jane Beenstock
Chief Executive, Southport and Formby Primary Care Trust

Physical Activity and Excel to Health

The following questionnaire consists of 20 questions and should take no more than 5 minutes to complete. Please answer the following questions as fully as you can by ticking the appropriate boxes.

Please tick appropriate box:

Section 1 – Referring Practices to the Excel scheme

1. How many patients as an individual per week do you refer to the Excel to Health Physical activity promotion scheme?

0 1-3 4-7 8-10 11+

2. I refer patients to Excel as a means to:

a. Prevent Coronary Heart disease occurring

Strongly Agree Agree Disagree Strongly Disagree

b. Rehabilitate patients suffered from Coronary Heart Disease

Strongly Agree Agree Disagree Strongly Disagree

c. Alleviate symptoms associated with Coronary Heart Disease

Strongly Agree Agree Disagree Strongly Disagree

d. Promote a Holistic Approach to Healthcare

Strongly Agree Agree Disagree Strongly Disagree

3. On what basis do you refer patients to Excel to Health

Those who exhibit risk factors for CHD as identified in inclusion criteria

Those patients who raise the subject of physical activity

Other (please specify) _____

4. What barriers (if any) would/do prevent you from referring patients to the Excel Scheme?

Lack of time to complete paperwork

Lack of time to explain the scheme to the patient

Lack of knowledge of benefits of physical activity in CHD prevention

Lack of knowledge of process and aims of excel scheme

Cautious of schemes effect in achieving behaviour change

Feeling that patients will/do not take advice and attend the scheme

Other _____

5. Do you feel you have received sufficient information /training with regards to the process and aims of Excel to Health (from initial referral to completion of the scheme)

Adequate information received Yes No

More information required Yes No

Comments _____

6. Do you feel it is important to receive regular information with regards to individual patients progress through the Excel scheme (i.e. patient update forms)

Yes No

Section 2 – Impact of the scheme

7. How important are the following lifestyle behaviours in contributing to the risk of CHD?

	Very Important	Important	Unimportant	Uncertain
Smoking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of exercise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Excess calorie consumption	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Excessive Alcohol consumption	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. What referral service do you feel that you utilise most? (Please Rank, 1 – Most Utilised, 3 – Least Utilised)

Physical activity Promotion

Dietary Advice

Smoking Cessation

Reason _____

9. I feel confident that those patients I refer to Excel to Health will complete the 14 week intervention period of physical activity.

Strongly Agree Agree Disagree Strongly Disagree Don't Know

10. I feel confident that patients I refer to the Excel scheme will maintain their physical activity levels beyond the 14 week intervention period.

Strongly Agree Agree Disagree Strongly Disagree Don't Know

11. Excel to Health has a positive impact on

a. Reducing CHD in the Sefton population:

Strongly Agree Agree Disagree Strongly Disagree Don't Know

b. Reducing risk factors associated with Coronary Heart Disease:

Strongly Agree Agree Disagree Strongly Disagree Don't Know

c. Increasing Physical activity levels amongst the Sefton population:

Strongly Agree Agree Disagree Strongly Disagree Don't Know

d. Maintaining long term adherence to physical activity:

Strongly Agree Agree Disagree Strongly Disagree Don't Know

12. In your opinion what are the most important benefits of an exercise referral scheme to a patient?

Mental Health/Psychological Benefits

Physiological Benefits

Social Benefits

Comments _____

13. Are you aware of who is responsible for providing Excel to Health?

Please Indicate _____

14. Do you feel Excel to Health should become an established main stream funded service?

Yes

No

Personal Information

15. What is your gender?

Male

Female

PUBLICATIONS

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