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**INCREASING ATTENDANCE AT**  
**CARDIAC REHABILITATION**

**by**

**Sarah J Wyer**

A thesis submitted in partial fulfilment of the requirements for the degree of  
Doctor of Clinical Psychology.

Coventry University, School of Health and Social Sciences and  
University Of Warwick, Department of Psychology.

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## CONTENTS

Acknowledgements

Declaration

Summary

### **Chapter One:**

#### **Predicting attendance at cardiac rehabilitation: A review and recommendations**

1.1. Abstract.....	11
1.2. Introduction.....	12
1.3. Factors affecting attendance.....	13
1.3.1. Sociodemographic factors.....	14
1.3.2. Healthcare systemic factors.....	18
1.3.3. Psychological factors.....	20
1.4. Summary & Conclusions.....	25
1.5. Recommendations.....	29
1.6. References.....	30

### **Chapter Two:**

#### **Deciding whether to attend cardiac rehabilitation: An interpretative phenomenological analysis**

2.1 Abstract.....	39
2.2 Introduction.....	40

2.2.1.	Self Regulatory Model.....	42
2.2.2.	Theory of Planned Behaviour.....	42
2.2.3.	Gloucestershire Royal CR Programme.....	43
2.3.	Methodology.....	44
2.3.1.	Participants.....	44
2.3.2.	Procedure.....	45
2.3.3.	Interpretative Phenomenological Analysis.....	45
2.3.4.	Interview format.....	46
2.3.5.	Analytical process.....	47
2.3.6.	Validity.....	48
2.4.	Results.....	48
2.4.1.	Medical vs. psychological model.....	49
2.4.2.	Illness perception.....	50
2.4.3.	Control.....	51
2.4.4.	Causal attribution.....	52
2.4.5.	Coping.....	54
2.4.6.	Attitude to cardiac rehabilitation.....	57
2.4.7.	Perception of programme content	60
2.4.8.	Subjective norms/professional opinion.....	61
2.4.9.	Abstraction of themes.....	62
2.5.	Discussion.....	63
2.5.1.	Self – Regulatory Model.....	63
2.5.2.	Theory of Planned Behaviour.....	64
2.5.3.	Comparison of models.....	66

2.5.4. Study limitations	67
2.6. Conclusion.....	68
2.7. References.....	69

**Chapter Three:**

**Increasing attendance at a cardiac rehabilitation programme:**

**An intervention study using the Theory of Planned Behaviour**

3.1. Abstract.....	80
3.2. Introduction.....	81
3.3. Methodology.....	84
3.3.1. Research sample .....	84
3.3.2. Materials.....	85
3.3.3. Design and Procedure.....	85
3.3.4. Main outcome measures.....	87
3.3.5. Statistical analysis.....	87
3.4. Results.....	88
3.5. Discussion.....	89
3.6. Conclusion.....	91
3.7. References.....	93

## **Chapter Four: Research Review**

4.1. Methodological considerations.....	103
4.1.1. Combining qualitative and quantitative methods.....	103
4.1.2. Quantitative methods.....	105
4.1.3. Qualitative methods.....	107
4.2. Directions for future research.....	110
4.3. Clinical implications.....	111
4.4. Ethical issues.....	111
4.4.1. Ethics committee.....	111
4.4.2. Use of a control group.....	112
4.4.3. Timing of recruitment.....	113
4.5. Personal reflections and learnings.....	113
4.5.1. Theory/model based research.....	113
4.5.2. Collaboration.....	114
4.6. Conclusion.....	115
4.7. References.....	116

## LIST OF TABLES

2.1.	Participant characteristics	78
2.2.	Key differentiating themes between groups	79
3.1.	Age, gender, distance lived from programme and compliance rates for each group	98
3.2.	Theoretical content of intervention letter 1 given to experimental group 3 days post MI	99
3.3.	Theoretical content of intervention letter 2 sent to accepters in experimental group 3 weeks post MI	100
3.4.	Comparison of letters sent to experimental and control groups	101

## LIST OF FIGURES

2.1.	Leventhal's Self Regulatory Model	75
2.2.	Theory of Planned Behaviour	76
2.3.	Interpretation of decision making process	77
3.1.	Acceptance, attendance and 'did not attend' (DNA) rates for experimental and control groups	102

## LIST OF APPENDICES

1. Ethics Committee Approval
2. Consent Form
3. Interview Format
4. Information sheet given to all potential participants
5. Covering thank you letter given to control group
6. Covering thank you letter given to experimental group
7. Intervention letter 1 given to experimental group
8. Intervention letter 2A sent to experimental group
9. Intervention letter 2B sent to experimental group
10. Instructions to Authors, Coronary Health Care Journal
11. Journal & Conference Correspondence

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## DECLARATION

This thesis was carried out with the supervision of Dr Louise Earll and Professor Marie Johnston whose earlier research and later guidance paved the way for the intervention study. In addition, Dr Stephen Joseph supervised on research procedures and collaborated with me during the writing up stage. Julia Harrison arranged access to participants and carried out some recruitment. Mark Giles arranged access to databases and previous research.

Apart from these collaborations the thesis is my own work. Authorship of papers which have been submitted for publication has been shared with the above.

The thesis has not been submitted for a degree to any other university.

The following papers have been submitted for publication to the journal 'Coronary Health Care': The literature review (chapter 1) (Wyer, Joseph & Earll, submitted), the main paper (chapter 2) (Wyer, Joseph, Earll & Harrison, submitted) and the brief paper (chapter 3) (Wyer, Earll, Joseph, Harrison, Giles & Johnston, accepted). The brief paper and main paper have been accepted for oral and poster presentation respectively, at the European Health Psychology Conference 2001.

## SUMMARY

As cardiac rehabilitation (CR) results in reduced mortality and morbidity (e.g. Dusseldorp et al, 1999), it is essential that as many people as possible are given the opportunity to benefit from it. Yet despite proven benefits, uptake of services can be low. This study sought to explore and possibly influence factors which predict attendance, with the ultimate goal of increasing attendance at a CR programme.

Whilst sociodemographic and health care systemic factors predict CR attendance, recent research has focused on investigating the role of factors more amenable to change such as psychological factors (e.g. Johnston et al, 1999). Recommendations based on the reviewed research literature are presented as ways of increasing attendance at CR.

It was evident from the review that psychological factors predicted attendance. In order to increase our understanding of these factors, interviews were carried out with attenders and non-attenders of CR (n=21). Several differentiating themes were identified: use of medical versus psychological model, illness perception, causal attribution, and attitude to CR. The results were interpreted using the Self Regulatory Model and the Theory of Planned Behaviour.

Finally, a simple cost effective psychological intervention was developed and implemented to influence patients' beliefs about recovery and CR, in order to increase their attendance rates at a CR programme (n=87). Using a randomised control trial design, MI patients who received an intervention in the form of two letters, were shown to be significantly more likely to attend CR than those who received normal care ( $p < 0.0025$ ).

In conclusion, there are a number of different ways that CR attendance can be increased. Firstly by being aware of how sociodemographic and health care systemic factors influence attendance and providing services accordingly. And secondly by understanding the role of psychological factors on attendance and implementing psychological interventions accordingly.

## Chapter 1: Predicting Attendance at Cardiac Rehabilitation:

### A Review and Recommendations

#### 1.1. ABSTRACT

Attending a cardiac rehabilitation programme (CRP) is of proven benefit to those recovering from a myocardial infarction, resulting in reduced morbidity and mortality (e.g. Dusseldorp et al, 1999). But despite proven benefits, uptake of services can be low (e.g. Ades et al, 1992a). To understand why attendance can be low, there is a growing body of research investigating factors that may influence and predict attendance. These research studies (e.g. Schulz & McBurney, 2000) which have found various factors such as age, gender, social deprivation and distance from a programme to influence attendance will be reviewed here.

Given that sociodemographic and medical factors influence attendance, recent research has focused on investigating the role of factors which may be more amenable to change (e.g. Cooper et al, 1999, Johnston et al, 1999a). These studies have found that psychological factors, such as the way a patient understands their illness, influence attendance.

Psychological models such Leventhal's Self Regulatory Model (e.g. Leventhal et al, 1980) and The Theory of Planned Behaviour developed by Ajzen and colleagues (e.g. Ajzen 1985, Ajzen and Madden 1986) have been used to guide this research. Each of these models will be presented here in relation to cardiac rehabilitation (CR), in addition to the research studies which have investigated their usefulness in predicting who attends CR (e.g. Johnston et al, 1999a). Research implications for service provision will be discussed.

## 1.2. INTRODUCTION

Coronary Heart Disease (CHD) is the most common cause of death in the UK. As well as being costly in terms of life, CHD is also responsible for 13% of all NHS costs, this being second only to mental illness (British Heart Foundation (BHF), 2000).

Nearly all deaths from CHD are due to a myocardial infarction (BHF, 2000). Each year in the UK, around 300,000 people suffer a MI, and about half of these are fatal. Whilst mortality rates for CHD are falling in the UK, they are not falling as fast as in other countries, such as Australia and Canada (BHF, 2000). In addition, although mortality rates may be falling, morbidity rates are actually rising. With more people surviving a MI, but with worse morbidity rates, research focusing on the recovery phase is gaining in importance (Petrie & Weinman, 1997). Much of this research has focused on cardiac rehabilitation (CR) as an intervention designed to optimise the recovery of people post MI.

Many research studies, including randomised control trials (Dusseldorp et al, 1999, Linden et al, 1996, Heller et al, 1993, Oldridge et al, 1988), have shown that cardiac rehabilitation results in reduced mortality and morbidity, reduced psychological distress, increased knowledge, less disability and greater satisfaction with care. It is now widely acknowledged that CR is of benefit to patients post MI:

“cardiac rehabilitation can promote physical, psychological and emotional recovery, enable patients to achieve and maintain better health, and can reduce the risk of death in people who have heart disease”

(NHS Centre for Reviews and Dissemination 1998:1).

In the UK, The National Service Framework for CHD (2000) states that all people admitted to hospital suffering from CHD should be invited to participate in a cardiac rehabilitation programme.

But despite proven benefits and government recommendations, it appears uptake of services is low (King & Teo, 1998). Reported rates of attendance vary from 21% (Ades et al, 1992a) to 53% (Schulz & McBurney, 2000).

### 1.3. FACTORS AFFECTING ATTENDANCE

As attendance rates are so low, the next step has been to identify the factors that affect patients' decisions regarding cardiac rehabilitation attendance (King & Teo, 1998). There have been three aspects of CR attendance that researchers have focused on. Firstly, attendance and compliance rates have been investigated once people have enrolled in CR (e.g. Oldridge et al, 1992, Oldridge et al, 1983), and secondly, studies have focused on factors affecting referral to CR (e.g. King et al, 1999, Ades et al, 1992a, Blumenthal et al, 1982). Finally there is the area which focuses on factors influencing initial attendance at CR, once a person has been referred. This paper will look at the growing body of research in this third area, focusing on research into sociodemographic factors influencing attendance and then on research with a psychological focus.

### 1.3.1. Sociodemographic factors

There have been a number of research studies (e.g. Ades et al, 1992a, Schulz & McBurney, 2000) which have investigated the role of factors in influencing and predicting attendance. These studies will be grouped according to their main finding, although with some overlap.

#### *Gender*

The finding that women are less likely to attend CR has been replicated in many studies (e.g. Evenson et al, 1998, McGee & Horgan, 1992). Women who have MIs are more likely than men to be older and live alone (e.g. Ades et al, 1992b, Jenson & King, 1997). These factors alone may make it difficult for women to access a programme, but in addition research shows that women may have poorer health and more chronic illnesses following MI when compared to men (Hamilton & Seidman, 1993, Conn et al, 1991). There is now a growing body of related research investigating how the experience and hence needs of women with CHD, may be different to that of men (e.g. Tardivel, 1998, Benson et al, 1997, Angus, 1996, Moore & Kramer, 1996).

A qualitative study by Boogaard (1984) found that women were quick to resume housework tasks even though fatigued, whilst men were more likely to be resting. Hawthorne (1993) similarly found women had multiple roles including caregiver, and were less likely to concentrate on their own needs. Both the studies of Boogaard and Hawthorne suggest that this 'otherness' orientation of women can present a major barrier to CR participation (Benson et al, 1997). Benson et al found that women perceived differences in the way they were

treated to men with one woman stating that having an MI was like having a "man's illness in a man's world". The women felt that they were not treated as well as men with some mentioning not being referred to CR, whilst another went to CR but being the only woman, reported feeling a 'freak'.

Moore (1996) carried out focus groups with women participants of a CR programme with a view to understanding gender factors in participation. Although limited by not including non-participants, the main study finding was that women considered physician recommendation as being essential to their participation. That physician recommendation is important to women takes on a significance when other research (e.g. Ades et al, 1992b) has shown that physicians are less likely to recommend women than men to CR.

One quantitative study that looked specifically at gender differences in CR participation but included both genders was carried out by Lieberman et al (1998). This study used a survey questionnaire to examine factors affecting decisions to engage in CRP. The key factor associated with attendance was the same for both men and women, namely 'physician recommendation', followed by family encouragement. The most important factors for non-attendance were medical illness, transportation problems and inconvenient timing of the CRP. Again these were the same for both men and women. The main difference was women placing more value on their children's opinion of whether they should attend and female non-attenders being more concerned about concomitant illness. The authors suggest that adult children should be invited to be involved in the decision making process, as well as health professionals seeking to reassure women about the demands of taking part in a CRP.

### *Ethnic groups*

Mortality rates from coronary heart disease are higher for the Asian population in the UK than non-Asians. For South Asians (Indians, Bangladeshis, Pakistanis and Sri Lankans), the rate is 46% higher for men and 51% higher for women (BHF, 2000). For East African, West African and Caribbean groups, the rates are below the national average. Little is known about ethnic groups and CR, with an apparent dearth of literature and information. For instance, the Cochrane review and meta-analysis of studies involving 7683 people (Jolliffe et al, 2000), noted that ethnic origin was seldom reported in the studies available for review. One study on the experiences and health needs of Asian coronary patients (Webster, 1997) suggested that CR services needed a higher profile within the Asian community.

### *Social deprivation*

A study carried out in Scotland (Pell et al, 1996) analysed medical records to find attendance was related to deprivation, the type of consultant and hospital. This study is useful for its focus on deprivation, but is narrow in its remit. However, following on from this research Pell and Morrison (1998) carried out a broader study looking more widely at factors associated with low attendance at CR. This study again relied heavily on medical records for its data, but, in addition, mailed questionnaires to all those invited to CR over a six-month study period. Questionnaires were mailed to 305 patients and 208 (68%) responded. Response rate was significantly related to attendance with non-attenders being less likely to return their questionnaire. Actually getting to the programme and parking was cited as the main deterrent. Other reasons included conflicting commitments, and low perception of need or benefit.

The authors highlight the fact that socioeconomically deprived patients have a higher incidence of MI, a worse prognosis and hence the greatest need for CR, yet are least likely to be able to access a programme. The study found that patients from socioeconomically deprived areas would prefer community based programmes rather than hospital based programmes. The authors state that a community based CRP is currently being piloted in Glasgow.

Another study that found social deprivation to be a factor significantly associated with non-attendance at CR was carried out by Melville et al (1999) in Nottingham, England. Medical records were, like the Pell et al (1998) study, the source of data for analysis. Hence the findings were limited by the data variables available. Much of the study investigated factors related to referral, which is outside of the remit of this review. The study analysed data collected in 1992 and 1996 and found some changes between the years. In 1992 factors associated with non-attendance were being older and not receiving thrombolysis, however by 1996 these were no longer significant. The only factor that remained consistently associated with non-attendance was social deprivation. Hence the results replicate those of Pell and colleagues (1996, 1998).

### *Older people*

Various studies have shown that older people are less likely to attend CR (e.g. Schulz & McBurney, 2000, King et al, 1999, Evenson et al, 1998, Ades et al, 1986). It is possible that other factors combine with age to make attendance difficult such as co-morbidity, being widowed, and lack of transport. The lower rates of attendance may be partially explained by lower rates of referral (e.g. Ades et al, 1992b, Thompson & Bowman, 1998). King et al (1999) suggest that an older person may decline a place on CR due to the belief that 'slowing down'

is an inevitable part of growing old and so perceives there would be little benefit in attending.

#### *Distance from programme*

Like others (e.g. Ades et al, 1992a, Aikman et al, 1996), Schulz and McBurney (2000) found that living a distance from the CRP predicted non-attendance. In addition they found that being older, living alone, having no access to public transport, lack of knowledge of the CRP and having the impression from the Doctor that CR was not required, also predicted non-attendance. On a pragmatic level living a distance from a CRP, with no transport and limited finances is clearly a barrier to attendance.

#### 1.3.2. Healthcare systemic factors

##### *Physician recommendation*

One of the most often quoted papers in the area of CR attendance is that of Ades et al (1992a) who carried out an extensive prospective study by interviewing 226 coronary patients aged 62 or older, to collect demographic, medical and psychosocial data. They found physician recommendation was the most powerful predictor of attendance ( $p < 0.0001$ ). When a physician recommended the programme, the attendance rate was 66%, whereas it was 1.8% when not recommended. This powerful effect of recommendation has been replicated in other studies (e.g. Lieberman, 1998). In addition, being older, being female, living further from the programme, lower educational level and medical disorder also predicted non-attendance. The only psychosocial factors associated with non-attendance were depression before admission and denial of severity of illness. Medical markers of severity of disease did not

predict attendance. The remit of this study was to investigate older coronary patients and so the generalisability of its findings to younger patients may be somewhat limited.

Related to the issue of recommendation is physician referral, with various studies investigating reasons for non-referral (e.g. Bittner et al, 1999). King et al (1999) suggest possible reasons such as physicians considering their own treatment of patients renders cardiac rehabilitation unnecessary or decisions being guided by inappropriate beliefs or bias.

### *Communication skills*

One study (Thornhill & Stevens, 1998) in rural Australia using grounded theory found that the communication skills of the recruitment health workers were important factors affecting attendance. Due to poor communication, many of the non-attenders misunderstood the true function of CR as the following quotes illustrate:

“I did not think sitting around...making baskets would do anything for my heart”

“sounded to me kind of like church; sit around and hope things get better. I reckon I could do that on my own”

(Thornhill & Stevens 1998:107).

These initial misunderstandings appeared to clear up over time, with the majority of non-attenders changing their opinions and stating that they would have liked to have attended. This highlights a need to make contact with non-attenders a month or two after discharge, as well as emphasising the communication skills of the recruiting professional. Others mentioned that better marketing of the programme, together with more information would have helped them attend.

### *Cardiac knowledge & partner attendance*

Attendees of a CR programme were found to have greater cardiovascular knowledge in a study on 174 patients post-cardiac event (Aikman et al, 1996). The non-attendees gave medical reasons, health professional factors, pragmatic problems, psychological reasons and other exposure to cardiac rehabilitation as reasons for non-attendance. The research study also found that 'intention to attend'; partner attendance and distance from the programme predicted 98.5% of attendance. The intention to attend is a psychological factor replicated in other studies (e.g. Cooper et al, 1999) and the distance from programme is also replicated elsewhere (e.g. Schulz & McBurney, 2000).

The issue of partner attendance is important with evidence to suggest that partners benefit as much if not more than patients (Thompson, 1995) with Johnston et al (1999b) showing that partners who attended were significantly less anxious and depressed than partners who did not attend. The finding that people are more likely to attend if their partners are invited too (e.g. Dishman 1986, Erling & Oldridge 1985) emphasises the importance of routinely inviting partners to CR.

#### 1.3.3. Psychological factors

Another area of research has been the psychological model driven approach investigating the role of psychological factors in CRP attendance (e.g. Petrie et al 1996, Cooper et al 1999, Johnston et al, 1999a). These studies have used health psychology models to guide their research on individuals' illness beliefs and perceptions, and how they may predict CR

A related study in England (Cooper et al, 1999) found that attenders were more likely to be younger, more aware of their cholesterol values, and more likely to be employed than non-attenders. The Control/Cure subscale of the IPQ again showed good predictive value with attenders being more likely to believe their condition was controllable. On the causal subscale, attenders were more likely to attribute their MI to their lifestyle. The researchers asked an additional question about 'intention to attend cardiac rehabilitation', which is outside of Leventhal's model. It was however the most significant predictor of attendance.

### *The Theory of Planned Behaviour*

The Theory of Planned Behaviour is a social cognition model, designed and used extensively, to explain and predict a variety of health behaviours. The model suggests that the most important influence on a person's behaviour is their behavioural intention, that is, what they intend to do. This was found to be the case in the studies by Aikman et al (1996), Cooper et al (1999), and Johnston et al (1999a).

The Theory of Planned Behavior (TPB) (e.g. Ajzen, 1985; Ajzen and Madden 1986), suggests that the most important influence on a person's behaviour is their behavioural intention, that is, what they intend to do (see figure 2). Behavioural intention is influenced by:

- attitude towards performing the behaviour,
- perceived subjective social norms (perceived social pressure) i.e. the degree to which the person thinks significant others (e.g. nurses and doctors) feel performing this behaviour is important,
- perceived behavioural control: the degree to which a person feels that performing a behaviour is under his control.

As well as perceived behavioural control predicting intention, it also has a direct effect on the behaviour.

The power of this model comes from the underlying assumption that if we can influence a person's attitude, or subjective norm, or perceived behavioural control, that will impact on the person's intentions which will then impact on their behaviour.

The model has been used to predict attendance for breast screening (e.g. Rutter, 2000), testicular self-examination (e.g. Brubaker & Wickersham, 1990), intentions to take hormone replacement therapy (e.g. Quine & Rubin, 1997), exercise (e.g. Terry & O'Leary, 1995) and prescribed drug compliance (e.g. Hounsa et al, 1993).

The majority of the published studies have broadly supported the model (Conner & Norman, 1998). Interestingly, different components of the model show different predictive value according to the type of behaviour investigated. For instance attitude appears more important than subjective norms for health behaviours performed in private (e.g. testicular self-examination), whereas subjective norms may be more important when the behaviour is performed publicly (e.g. safety helmet use) (Quine et al, 1998). While the model has been shown to predict a wide range of behaviours, few of the studies have examined novel behaviour (Rutter, 2000). Processes underlying motivation and intention may well be different for novel behaviours with no previous experience to inform beliefs about outcome.

Given that attending CR is a novel behaviour for most people, the study by Rutter (2000) who investigated the predictive value of the TPB for the novel behaviour of attending for breast

cancer screening is particularly relevant. This was a prospective study with a large sample size of 1215 women. The TPB successfully predicted intention and attendance, with the strongest predictor being attitude, followed by perceived behavioural control and subjective norm. It is possible that screening is looked upon as a private behaviour, hence the strongest predictor being attitude.

Declaring an intention to attend CR and actually performing the behaviour is one that follows a period of potentially stressful hospitalisation. Hence it is possible that the components of the TPB which are predictive are different again for the behaviour of attending CR. One study which tested the TPB using a questionnaire entitled 'The Theory of Planned Behaviour Questionnaire' (TPBQ) in a CR setting found that it was able to predict attendance at CR programmes in two settings, Gloucester and Southampton. Johnston et al (1999a) found that those who attended had a stronger belief in family & friends wanting them to attend (subjective norm) ( $p < 0.001$ ) and in the health professionals recommendation to attend (subjective norm) ( $p < 0.001$ ). They foresaw fewer barriers to attending (perceived behavioural control) ( $p < 0.001$ ) and perceived cardiac rehabilitation as beneficial to their health (attitude) ( $p < 0.001$ ). Attenders were also more confident that attendance would help with initiating lifestyle change (attitude) ( $p < 0.001$ ) and promote adherence to medical advice (attitude) ( $p < 0.001$ ). They also were more likely to perceive the programme as helping them to reduce their risk of a further heart attack (attitude) ( $p < 0.0001$ ).

### *Predictive value of the Self Regulatory Model and the Theory of Planned Behaviour*

It would appear from the studies by Cooper et al (1999) and Petrie et al (1996) that the IPQ (based on the SRM) is limited in its predictive value to its control/cure and cause scales. However these findings suggest that a psychological intervention designed with the aim of influencing patients' beliefs about the control/cure and cause aspects of cardiac disease might be the useful subject of future research. From the study of Johnston et al (1999a) it would appear that the Theory of Planned Behaviour Questionnaire has good predictive value. Given that all the components had predictive value, future research needs to focus on designing and evaluating psychological intervention with the aim of influencing a person's attitude, perceived behavioural control, and subjective norms. If that can be achieved it may lead to improved attendance at CR

#### 1.4. SUMMARY & CONCLUSIONS

This paper has presented a review of the current research focusing on factors influencing attendance at a CRP. The research can be divided into two groups. Firstly, research which informs us of under-represented sections of the population. This presents a challenge to service providers to be creative in providing services which enable these sections of the community to attend CR. Although it is obviously not possible to directly alter the primary factor i.e. gender, it may be possible to influence the moderating factors such as physicians being less likely to refer. Secondly, there is research which provides information about predictive psychological factors, paving the way for interventions to be designed with the aim of modifying these factors and increasing attendance at CRP. If this can be achieved, more

people will have the opportunity to benefit from cardiac rehabilitation.

Gender bias seems evident given that women are less likely to be referred to a CR programme in the first place. In addition women are less likely to be recommended to attend CR by a physician. Given how important this recommendation is in the decision to attend, it is imperative that all health care professionals ensure that there is no gender bias in their recommendations.

It is also possible that women may benefit from an intervention:

- targeting their beliefs about prioritising their own needs,
- reassuring them if possible, that there will be other women present at CR,
- reassuring women about the demands of taking part in a CRP.

Given the substantially higher than average incidence of CHD in the Asian population, it seems that research on ethnic groups and CR attendance needs to be prioritised. Firstly, data needs to be collected and published on CR attendance rates of ethnic groups. Secondly, research needs to follow on from Webster's study (1997) to investigate differences in the experiences of Asian people post MI, so that services and interventions can be tailored to increasing access to services.

With regard to older people, again it is important that bias does not influence referral patterns. Service providers need to be aware that attendance can be difficult and wherever possible make provisions to overcome barriers, for example, free transport. Recruiting professionals may need to identify potentially unhelpful beliefs held by older adults and if necessary intervene.

Distance lived from programme mitigates against attendance in particular for those from deprived areas with poor access to transport. Solutions to this could be the provision of CR for in-patients (e.g. Johnston et al, 1999b) or outreach programmes (such as that used by Adenbrookes Hospital, Cambridge). In addition, as suggested by Pell & Morrison (1998) the movement of cardiac rehabilitation away from hospital into more accessible community sites might be a solution. In the Gloucestershire Royal CRP community sites have been set up in rural areas with a view to increasing accessibility and hence attendance.

Aikman et al (1996) found those with greater cardiac knowledge were more likely to attend a CRP. This suggests an in-patient education programme to increase knowledge might be beneficial. Such a programme could also include a rationale for the outpatient CR programme, as non-attenders have been shown to have only a vague notion of the CRP and its content.

Given that some people find retaining information difficult in the first week or two, it could be beneficial to produce written information clearly stating CR aims and benefits as a supplement to verbal dialogue and invitation. This literature could include a physician's recommendation.

Evidence has consistently suggested that inviting partners to CR, as well as involving them in the recruitment process is a valuable way of increasing attendance and long term compliance with lifestyle changes.

Physician recommendation was consistently found to be a powerful predictor of attendance. This suggests that physicians have a critical role to play in encouraging patients to attend CRP. Local programmes should work to ensure they have the backing of the local physicians, who themselves should have an awareness of the benefits of CR and the role of their own recommendation. Given the power of the physician recommendation, CR staff should ensure that physicians do not have an inherent bias against recommending CR for their older and/or female patients.

Studies such as Weinman et al (1996), Cooper et al (1999) and Johnston et al (1999a) have highlighted the importance of psychological factors in predicting attendance at CRP. For example, how people make sense of their illness, the way they cope, how they view the programme and their ability to attend, all predict attendance. Future research now needs to focus on interventions aimed at influencing these beliefs in a way that increases attendance.

## 1.5. RECOMMENDATIONS

Factor	Recommendation
Professional recommendation	Professionals to: <ul style="list-style-type: none"><li>• have awareness of the importance of their role</li><li>• ensure there is no gender or age bias in their referral or recommendation patterns</li></ul>
Gender & Age	<ul style="list-style-type: none"><li>• Awareness of specific issues facing women</li><li>• Recruiting staff to intervene where necessary to identify unhelpful beliefs</li></ul>
Ethnic groups	<ul style="list-style-type: none"><li>• Attendance data to include ethnic grouping</li><li>• Research on attendance to be prioritised</li></ul>
Distance from programme	<ul style="list-style-type: none"><li>• Community programmes to be considered</li><li>• Provision of accessible transport</li></ul>
Cardiac knowledge	<ul style="list-style-type: none"><li>• Provision of in-patient educational programme with written information</li></ul>
Partners	<ul style="list-style-type: none"><li>• Routinely invite partners to attend CR with their spouses.</li></ul>
Psychological factors	<ul style="list-style-type: none"><li>• Design, implementation &amp; evaluation of psychological interventions</li></ul>

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## Chapter Two : Deciding whether to attend a cardiac rehabilitation programme:

### An Interpretative Phenomenological Analysis

#### 2.1. ABSTRACT

Despite proven benefits of reducing mortality and morbidity (e.g. Dusseldorp et al, 1999, Linden et al, 1996), attendance at cardiac rehabilitation (CR) is low (King & Teo, 1998). The aim of this research was to explore beliefs held on recovery and CR by attenders and non-attenders; and to examine the usefulness of the Self Regulatory Model and the Theory of Planned Behaviour when interpreting the results.

Semi-structured interviews were carried out with a total of 21 people, 3 months after they had been admitted to a district hospital with myocardial infarction (MI). Nine people had attended a CR programme, six people had originally accepted an offer to attend, but then did not attend, and six people who declined the offer and did not attend. The transcripts were subjected to interpretative phenomenological analysis (IPA).

Several key differentiating themes were identified: use of medical versus psychological model, illness perception, control, causal attribution, coping strategies and attitude to CR. Attenders were more likely to see themselves in control of their recovery and to view the programme as a way of taking responsibility for improving their health and reducing their chances of recurrence. Attenders were also more likely to use information seeking ways of coping whilst non-attenders used avoidance/minimising coping strategies. The technique of IPA proved useful in allowing an abstraction of the factors affecting the decision making process.

## 2.2. INTRODUCTION

Whilst mortality rates for coronary heart disease (CHD) are falling in the UK, morbidity rates are actually rising (British Heart Foundation, 2000). With more people surviving a MI, but with worse morbidity rates, research focusing on the recovery phase is gaining in importance (Petrie & Weinman, 1997). Much of this research has focused on evaluating the effectiveness of cardiac rehabilitation as an intervention. It is now widely acknowledged that cardiac rehabilitation is of benefit to patients post myocardial infarction resulting in reduced mortality and morbidity (e.g. Dusseldorp et al, 1999, Linden et al, 1996, Heller et al, 1993).

But despite these benefits, attendance rates at cardiac rehabilitation programmes appear low (e.g. Ades et al, 1992). There is now a growing body of research focusing on identifying sociodemographic factors (e.g. Schulz & McBurney, 2000, Aikman et al, 1996) which predict attendance. The identified sociodemographic factors predict that those who are older, female, socially deprived and living further from a programme are less likely to attend.

Whilst sociodemographic factors present a challenge to service providers to ensure measures are taken to provide equity of access, another area of research has focused on identifying predictive factors which may be more amenable to change, for instance psychological factors (e.g. Cooper et al, 1999, Johnston et al, 1999). These studies have found that psychological factors, such as the way a patient understands their illness, influence attendance.

Psychological models such Leventhal's Self Regulatory Model (e.g. Leventhal et al, 1980) and The Theory of Planned Behaviour developed by Ajzen and colleagues (e.g. Ajzen 1985, Ajzen

& Madden 1986) have been used to guide this research. Cooper et al (1999) using the Illness Perception Questionnaire (Weinman et al, 1996) based on Leventhal's model found that attenders were more likely to believe their condition was controllable and to attribute their MI to their lifestyle.

A questionnaire based on the Theory of Planned Behaviour (TPB) has also been shown to predict attendance at CR (Johnston et al, 1999). Those who attended had a stronger belief in family & friends wanting them to attend and in the health professionals' recommendation to attend. They foresaw fewer barriers to attending and perceived cardiac rehabilitation as beneficial to their health. Attenders were also more confident that attendance would help with initiating lifestyle change and promote adherence to medical advice. They also were more likely to perceive the programme as helping them to reduce their risk of a further heart attack.

The majority of the research investigating psychological factors has used quantitative methods, however a few studies have utilised qualitative methods with a view to providing insights into the experiences of people post MI (e.g. Wiles, 1998, Johnson, 1993). A study using grounded theory compared perceptions of attenders and non-attenders of CR in rural Australian (Thornhill & Stevens, 1998). Thornhill and Stevens found that non-attendance was linked to poor staff communication about the programme as well as geographical isolation from the programme.

Unlike previous studies, this reported study used an Interpretative Phenomenological Approach (IPA) which allowed for a theoretical perspective to inform the final interpretation of the results. The theoretical perspective taken was that of the two models, Leventhal's Self

Regulatory Model (e.g. 1985) and Ajzen's Theory of Planned Behaviour (e.g. 1985). The choice of these models was informed by the recent research literature on predicting CR attendance (e.g. Johnston et al, 1999), however other social cognition models such as the Health Belief Model (Rosenstock, 1966, Becker et al, 1977) and Bandura's Social Cognitive Theory (Bandura, 1997) could have made interesting alternatives.

### 2.2.1. Self – Regulatory Model

Leventhal's Self Regulatory Model (SRM) (e.g. 1985) is a dynamic problem solving model with three main stages: interpretation, coping and appraisal (see figure 1). The interpretation stage involves the person developing his thoughts and ideas about his illness along five dimensions: identity, cause, consequences, time line, cure / control. The representation a person constructs of his illness will then influence the coping strategy he is likely use. Finally in the appraisal stage the person evaluates the effectiveness of his coping strategy. Alongside these problem solving processes is a parallel emotional response.

-Figure 1 here-

### 2.2.2. Theory of Planned Behaviour

The Theory of Planned Behavior (TPB)(e.g. Ajzen, 1985; Ajzen and Madden 1986), suggests that the most important influence on a person's behaviour is their behavioural intention, that is, what they intend to do (see figure 2).

Behavioural intention is influenced by:

- attitude towards performing the behaviour,
- perceived subjective social norms (perceived social pressure) i.e. the degree to which the person thinks significant others (e.g. nurses and doctors) feel performing this behaviour is important,
- perceived behavioural control: the degree to which a person feels that performing a behaviour is under his control.

As well as perceived behavioural control predicting intention, it also has a direct effect on the behaviour.

-Figure 2 here-

### 2.2.3. The Gloucestershire Royal Cardiac Rehabilitation Programme

Gloucestershire Royal NHS Trust offers a seven week programme to patients 4-6 weeks post MI. Patients attend once a week for seven weeks with two follow up sessions being offered at 8 weeks and 6 months after the programme. The programme is multidisciplinary with the team consisting of a cardiac specialist nurse, a physiotherapist and a health psychologist. The content focuses on lifestyle education exercise and stress management. Three programmes are currently offered, one at Gloucestershire Royal Hospital and two others in the community.

## 2.3. METHODOLOGY

The study took place between April-December 2000 and was approved by the local NHS Ethics Committee (appendix1).

### 2.3.1. Participants

Participants were people who had been admitted to a general hospital with myocardial infarction and were eligible for cardiac rehabilitation. Two months post MI, letters were sent to a selection of people asking if they would be willing to take part in an interview about their recovery. It was originally decided to randomly select and invite to interview ten people from each of the following three groups in order to make comparisons between them. The groups were made up of those who had:

- accepted the initial offer of a CRP place and attended, referred to as 'attenders',
- accepted the initial offer of a CRP place but did not attend, referred to as 'accepters/non-attenders',
- declined the initial offer of a CRP and did not attend, referred to as 'non-accepters/non-attenders'.

When deciding on the number of people to interview, a balance was sought between having enough people in each group to provide meaningful data yet not becoming overloaded with cumbersome data. Previous IPA research (e.g. Smith et al, 1999) analysing shared themes within and between groups has had seven or less participants in each group.

Five people refused to take part (one from the attenders group, two each from the non-attender groups), one person had died (from the non-accepter group), one had moved away (from the accepter/non-attender group) and two people had been readmitted (one each from the two non-attender groups). This left a research sample of nine attenders, six

accepters/non-attenders and six non-accepters/non-attenders. Table 1 shows demographic details for each group. Although there were differences in age and sex between the groups, these were not statistically significant.

-Table 1 here-

### 2.3.2. Procedure

Semi-structured interviews were carried out with nine attenders and twelve non-attenders. Six of the non-attenders had accepted a place on the CRP and then did not attend, whilst the other six had declined the initial offer in the first place. The interviews were taped and the verbal content transcribed, providing the data set for an IPA.

### 2.3.3. Interpretative Phenomenological Analysis

IPA is a method increasingly being used in the field of psychology (e.g. Osborn & Smith, 1998) in a bid to understand the participant's personal view of the phenomena being investigated. The method acknowledges that the researcher impacts on the research process by way of having to make sense of, and interpret the participant's personal world (Smith et al, 1999). Unlike grounded theory, IPA as a process can be informed by theory and does not have the development of a model as its primary focus.

#### 2.3.4. Interview format

An interview format was devised using the Theory of Planned Behaviour (e.g. Ajzen, 1985) and Leventhal's Self – Regulatory Model (e.g. 1985) to highlight possible areas of interest. The format served as a guide, rather than providing a rigid set of questions, however all interviews covered the following question areas:

- In your opinion, how has your heart attack affected you? (Consequences)
- How do you see yourself in a year's time? (Timeline)
- What's been the most difficult thing to cope with? Has anything made that easier to cope with? (Coping)
- Do you have any ideas about what caused your heart attack? (Cause)
- With regard to your recovery do you view it as something you have control over? Or is it something that's going to take its own course? (Control)
- Remembering back to when you were an in-patient, when you were first told about the programme, what were your initial views? (Attitude)
- Did you have ideas about what the programme may be about? (Attitude)
- Did you think the cardiac rehabilitation programme would have an effect on your recovery in any way? (Attitude)
- Were you of the opinion that the doctors & nurses thought you should attend the cardiac rehabilitation programme? (Subjective norm)
- What did your family & friends think about the cardiac rehabilitation programme? Did they think you should attend? (Subjective norm)
- Were there things that made it difficult for you to attend? (Behavioural control)
- Did you intend to go to CR from the beginning / Was there ever a time that you intended or thought about going to CR? (Behavioural intention)

It should be noted that some concepts (e.g. attitude) were covered by more questions than others. This was due to the multidimensional nature of the concepts rather than a differing importance ascribed to each. In addition some theoretical components (e.g. behavioural intention) proved difficult to translate into multiple questions without repetition.

The interviews lasted between 30 minutes and an hour. Based on Smith (1995) the transcripts were analysed as detailed below. The analysis was carried out primarily by the first author.

#### 2.3.5. Analytical process

1. Interview transcripts were read through several times, and emerging themes tentatively identified.
2. Transcripts were read again, with a summary and list of themes being produced for each.
3. A comparison of the three groups was carried out to identify potentially shared as well as differentiating themes.
4. Those themes that did not differentiate between the groups were discarded from the analysis.
5. A coding scheme was developed for the central themes, and the transcripts re-labelled with a numerical code.
6. The numerical codes were used to group together extracts relating to similar concepts.
7. Patterns and relationships within and between the three groups were explored and a diagram constructed to capture the emergent themes (see figure1).
8. The shared themes were used as the basis for the results sections using the participants' own words to illustrate the essence of their experience (Osborn & Smith, 1998).

For reasons of anonymity and confidentiality, the participants' names and details have been changed.

#### 2.3.6. Validity

As suggested by Smith (1996) sufficient verbatim evidence has been included in the paper to allow the reader to interrogate the interpretation. In addition, an independent researcher coded four of the transcripts, chosen at random. It was not possible to for the independent researcher to code more than four due to limited resources. However the purpose was not to provide inter-rater reliability scores, but for the independent researcher to verify that the interpretations presented were possible from the data obtained.

### 2.4. RESULTS

As the participants were encouraged to tell their story as a way of establishing rapport and grounding their decision making process regarding CR, the interviews produced a large amount of rich data detailing people's experiences post MI. Due to the limited size of this paper and for brevity, only the key themes that differentiated the groups are presented here: use of medical versus psychological model, illness perception, control, causal attribution, coping strategies and attitude towards CR (see table 2).

-Table 2 here-

#### 2.4.1. Medical vs. psychological model

This appeared to be a superordinate theme, with the majority of attenders holding a psychological model, whilst all of the non-attenders held a medical model. In particular this was evident from their differing beliefs with regard to 'responsibility for illness' (control) and 'treatment of illness' (cure). Holding a medical model in an acute illness phase can be viewed as adaptive, however with a chronic illness requiring self-management, the use of a psychological model is considered more adaptive.

Attenders saw themselves as being responsible for their own health and there being more to achieving good health than just taking tablets:

"I think you can make yourself well, you just have to get on with it, you've got to be positive".  
(Frank, 11)

"I'm conscious of what I'm eating to bring my cholesterol down, I've cut out worrying, I know its down to what I do".

(George, 1)

On the contrary the majority of non-attenders appeared to view their recovery as being something the medical profession were responsible for, rather than themselves:

"...I rely on the doctors and nurses to look after you, its their job to look after my health".  
(Roy, 7)

Most of the participants appeared to value the medication they had been prescribed, however it seemed that the non-attenders gave greater importance to the role of medication with 8 out of the 12 non-attenders mentioning its importance compared to 2 of the 9 attenders:

“I’d had a bad patch and with the tablets I’d be alright” (Isobel, 3)

“I’ve got a jolly good doctor who looks after me and gives me all the right tablets”  
(Ivy, 3)

“I don’t worry about having another (MI), I just take the tablets every morning”.  
(Brian, 3)

#### 2.4.2. Illness perception

Participants varied in their perception of their MI and the sense they made of it. In line with Leventhal’s model, their illness perception appeared to be related to their coping strategy, and so there is some overlap in this section with the later one on ‘coping’.

Attendees were more likely to view their MI as being a serious event, having consequences and requiring action. One attendee saw his heart condition as being of serious nature and having a chronic timeline. As a consequence he was having difficulty coming to terms with it:

“You get up one morning and you have a heart attack and your life has completely changed hasn’t it? It’s shocking really. It’s going to affect us for the rest of our lives”.  
(Arthur, 2)

In contrast some of the non-attenders seemed to minimise the severity of their MI:

"I had a mild one and was very lucky". (Vera, 2)

Some of the non-attenders seemed to doubt that they had actually had a MI:

"I don't think I had a heart attack, they're not sure, it was a blockage, whether that counts?". (William, 1)

As well as non-attenders minimising the size of their MI, they also compared themselves to others worse off than themselves. Comparisons like this can be used to reduce uncertainty and boost confidence in one's own health. It also seemed that some non-attenders used comparisons with others as a way of rationalising their decision not to attend in a way that reinforced their own self-esteem:

"I am not ill, there were those worse off than me and those needed more attention than I do. So I thought let those go forward first and I'll take a back seat".

(Albert, 8)

### 2.4.3. Control

Attendees seemed more likely to consider they had control over their recovery than non-attendees. One attendee said:

"I'm doing things sensibly, they've given me good advice and I dictate my lifestyle from now on. I've no intention of putting on weight. I'm thinking positive and so I shouldn't be back in hospital".

(George, 8)

On the contrary, one non-accepter felt there was little he could do:

“Its not in my control, I cant do nothing about it, its just surviving”.

(Richard, 4)

#### 2.4.4. Causal attribution

Causal attribution appeared linked to people's decision to attend in both the attender and non-attender groups. How people made sense of their MI and how they attributed the cause was often linked to changes they made, with one attender saying:

“Obviously you start thinking what was the cause? I walk everywhere, I don't smoke, so what was the cause? So I thought it must be diet so I've cut down on animal fat”.

(Reg, 7)

The use of the psychological model was also evident with some attenders attributing their MI to their own previous behaviours:

“The fact that I've had one is almost certainly done to something I've done or not done as it's not in my family at all, so therefore its been my lifestyle”.

(Frank, 17)

These causal attributions of lifestyle were linked to attendance as patients saw the CRP as helping them reduce what they perceived to be their risk factors. Interestingly half of the non-accepters attributed their MI not to lifestyle, but to events immediately preceding the MI, such as moving wardrobes or paving slabs:

"how I got this heart attack was not through the cholesterol but by moving a wardrobe.

I won't be doing that again". (Vera, 1)

"I was bumping radiators around, whether it was the strain of those that brought it on I

don't know". (Albert, 1)

How non-attenders attributed the cause of their MI impacted on their behaviours to prevent a recurrence. Taking it easy and delegating the moving of heavy objects to other people was seen as being more relevant than attending a CRP. Hence their causal attribution contributed to their decision not to attend.

Three of the non-attenders blamed stress for their MI and as a consequence had decided to cut stress out of their life:

"I've got to lie down rather than stand up, I've got to rest, as long as I can be quiet and no one distresses me". (Fred, 2)

Unfortunately, attending the CRP was also seen by some as a stressful event to be avoided. They did not want to cope with the stresses of having to be somewhere at a given time, parking, and being away from the safety of home:

"you can never find anywhere to park and it was going to stress me up because they said you've got to avoid stress that's the main thing. So I thought it's not going to be worth the hassle". (William, 2)

#### 2.4.5. Coping

##### *Approach Coping*

There appeared to be a clear distinction between the groups with regard to the coping strategies used. All of the attenders used the approach coping style and in particular 'information seeking'. In contrast, all of the non-attenders used avoidant coping to some extent. For the attenders, the information seeking was often related to the coping behaviour of seeking help from others:

"You've had a heart attack, you're lying in bed, you don't know what's in front of you, you don't know what exercise you should do, are you going to strain the heart?.....you're looking for someone to come and tell you how to do it".

(George, 10)

"I want to get better and I want to do everything right, I'd rather someone who's got more knowledge told me what to do...".

(Arthur, 6)

Attending the programme was seen as an effective way of finding out the information they sought:

"if I can learn what I can do and what I can't do. I've tried to get the information but I've been fudged off. I need to have the answers".

(Brian, 4)

The attenders saw information gathering as a way of making sure they were doing the right thing in order to minimise the possibility of having another heart attack:

"I said I'd go on it as I wanted as much information as possible, this was my first heart attack I didn't want another". (John, 2)

Many of the attenders viewed their MI as having serious consequences by being a threat to their future health with the possibility of a recurrence. They appeared to use attending the CRP as a problem-focused way of coping with this threat in the belief that attending CRP would reduce the risk of recurrence:

"I'm trying to reduce the risk of having another one; I've got the rest of my life to live". (Roy, 12)

"I wanted to be aware of what was happening, and what I had to do to make sure it didn't happen again". (Tony, 2)

### *Avoidance coping*

Rather than using approach methods of coping, the majority of non-attenders reported using avoidance or minimisation as a coping strategy:

"I don't like to ask too many questions because I think the more you know the more likely you are to worry, whereas if you know nothing you've got nothing to worry about". (Roy, 7)

"I didn't ask anything, its better to let the body carry on with it, you're better off not knowing". (Fred, 5)

Two of the non-accepters appeared to be using avoidance as a strategy to cope with the impact of having an MI:

"I didn't feel like doing anything, I was so bad I didn't want to know anybody, I didn't want to know the bother, just wanted to be left alone, so I said no".

(Leonard, 3)

One non-attender that had been given a definite diagnosis said:

"as far as I was concerned I hadn't really had a heart attack, it was a small one, there was nothing drastically wrong, it was best to forget it".

(Isobel, 3)

For one non-accepter it seemed as if he saw the CRP as interfering with his desire to get back to normal and fend for himself:

"I don't want a place on a course, it's about getting back into the normal run of things. I don't want to take people's time up to look after me, you've got a problem you get on with it, you sort yourself out. All I want was to get home, get back to normal, put it behind me".

(Terry, 2)

Several of the non-accepters showed this trait of self-reliance and a desire to recover independently of health professional advice. The drawback to this approach was the lack of accurate knowledge that non-attenders seemed to possess, for instance:

"I had been drinking milk and that's the worse thing I could be doing because that builds up cholesterol so now I don't have any".

(Isobel, 7)

As well as using avoidance, several of the non-attenders used the coping strategy of minimisation:

“I said whats all this kerfuffle about..I've only had a heart attack...nothing to worry about”.  
(Albert, 4)

This minimising was linked to their decision not to attend as they did not see their MI as a major event in their life, and so they had other priorities to attend to:

“I had other appointments to keep than trying to get down there at the same time so I didn't take it”.  
(Clive, 2)

#### 2.4.6. Attitude to cardiac rehabilitation

##### *CRP as beneficial*

For the majority of attenders this was a clear-cut decision with the CRP being perceived as beneficial. The attenders appeared to use a psychological model of health and so the idea of the CRP fitted with their internal model of understanding:

“it made sense straight away”.  
(Eric, 3)

The majority of the attenders saw the CRP as being inherently beneficial:

“Anything after a heart attack that improves your body and health has got to be good hasn't it? It doesn't cost anything except effort, you've got to get off your butt and you've got to get there”.  
(George, 4)

Viewing the CRP as something that would help them in their quest to prevent another MI was a common theme:

"I'm going to get fit...because I don't want to go yet..its about living longer and preferably not having another". (Eric, 5)

Only one of the attenders was initially hesitant but he seemed willing to give it a go:

"I wasn't sure whether it would be *any sort of help, but I thought well I've got to give it a try*". (Reg, 3)

Three of the attenders seemed to take into account the context of a rationed NHS and evidence based practice, believing that only services that were effective would be available on the NHS:

"its got to be beneficial if it wasn't there would be no point in having it". (Roy, 11)

"just the fact that it was there made me think it was going to be beneficial. If they were putting this on they wouldn't be doing it for nothing, the health service is short of money so they wouldn't put it on unless it was worthwhile". (Frank, 6)

#### *CRP as not beneficial*

It seemed from the beginning that the non-accepters felt that CR was not relevant to them or beneficial. The accepters/non-attenders although accepting the invitation, also had some doubts as to the benefits of CR. It seemed that their motivation to initially accept was driven by

fear and poor health. Once at home, they were recovering well, their original fear had subsided and so they no longer saw the need to attend. In addition, some had been reassured through medical procedures such as angiograms and stents and again no longer saw the need to take up their invitation. It seemed they did not see themselves as being ill and so did not see the need for an intervention:

"When I first went in it was frightening and you think you'll do anything like...so I said I would go and then I thought there's nothing I can talk about to people because I felt so well".  
(Vera, 3)

"When they did the angiogram they said they didn't know why anything had happened at all because my heart for my age was really good, they said there wasn't anything really bad....I wasn't going to benefit because there wasn't anything wrong with me"  
(Isobel, 3)

Other than these differences mentioned above there appeared few other themes that differentiated between the two groups of accepters/non-attenders and non-accepters/non-attenders.

The majority of the non-attenders seemed unable to understand how the CRP could be beneficial, as it did not seem to fit with their medical model:

"I mean if they were going to give you an injection then I would have gone, because it would improve your recovery"  
(Ivy, 7)

One non-accepter could not see how it would benefit him as an older person:

"I would say it would benefit a younger person more than an older person like me. The younger person got all his life to live whereas I be coming to the end of mine. You've got to face these facts. If you've had a heart attack you be coming to the end of it like".

(Leonard, 3)

#### 2.4.7. Perception of programme content

It seemed the majority of research participants did not have a clear idea of what the programme entailed, although attenders reported a clearer understanding. For attenders who only had a vague idea this did not seem to deter them from attending:

"I wasn't really sure what it was going to involve at all, but I thought I'd give it a try".

(Roy, 5)

For non-attenders their incomplete idea of programme content seemed to contribute to their decision not to attend. All seemed to have a simplistic notion of what the programme would involve. A few thought it would be sitting around talking about problems, whilst others thought it might consist of just exercise:

"I thought it would be exercises so I thought it wouldn't make a lot of difference as I keep on doing my walk everyday I thought that would be just as good".

(Sheila, 2)

#### 2.4.8. Subjective norms / professional opinion

Subjective norm within the TPB allows for an individual to be influenced by the views of others, such as family and friends, as well as professionals such as doctors and nurses. It seemed that the opinions of family and friends were not a significant influence, as they were viewed as having no knowledge or prior experience that might be beneficial:

“If it was the medical profession who told me I was doing too much I’d take notice, but if the rest of the family did, I wouldn’t”. (Frank, 9)

However the opinion of health professions, did appear to impact on the decision making process. Professional advice and input was valued by all those who mentioned receiving it, in this study this was only the attenders:

“Well they spend a lot of years learning these things so hopefully they’ll put me on the right track...you don’t go to college for all those years to learn nothing so I assume they know what they’re talking about”. (Frank, 16)

Recommendation from a doctor appeared to carry great weight and gave the patient confidence in his decision to attend:

“My consultant said are you going on the rehab? Yes oh yes, he said good that will do you good, so it gives you confidence” (George, 9)

However it was not only doctors whose opinion was valued, with carer nurses seeming to make an impact with their comments to patients:

“my carer nurse, she stressed that it was an important part of my getting back into the mainstream and that it was very beneficial, she sold it to me” (Arthur, 6)

For one participant with a seemingly traditional sense of hierarchy the fact that a nurse was recommending the CRP rather than a doctor appeared to alter the status attached to CR attendance:

“I thought she (CR nurse) had been delegated to come with that aspect, rather than bother the doctor with it” (Reg, 4)

#### 2.4.9. Abstraction of themes

One of the techniques of IPA allows an abstraction of the emerging themes so that relationships between themes can be explored (Smith et al, 1999). For this study a diagram was constructed as a way of representing the decision making processes discussed in the interviews. This is not a speculative model as produced by a grounded theory method. Rather it is an interpretation based on the interviews in this study as a way of bringing together and exploring the identified differential themes.

-Figure 3 here-

## 2.5. DISCUSSION

In line with the phenomenological approach the main themes will be discussed in this section in relation to the existing literature (Osborn & Smith, 1998). The results will be explicitly interpreted in light of the Self Regulatory Model and the Theory of Planned Behaviour.

### 2.5.1. Self - Regulatory Model

#### *Illness representation*

The illness representation component of the SRM appeared to link in well with the themes, in particular the dimensions of cause, consequences and control. CR attenders were more likely to attribute their MI to their own lifestyle, view their illness as having serious consequences, yet also view their illness as something they had control over. This is congruent with Cooper et al (1999) who found attendance was related to a causal attribution of lifestyle and Petrie et al (1996) who found attendance was significantly related to a sense that the illness could be controlled. Weinman et al (2000) found associations between patient causal attributions and later health related behaviour changes. For instance, people who attributed their MI to fatty foods were more likely to have made dietary behaviour changes. These research findings highlight the need to identify possible misconceptions about control and cause in the early post MI stages as a potential basis for intervention given they predict later health related behaviours (Weinman et al, 2000).

Those CR accepters who felt better once they had returned home and saw their illness as having less impact appeared less likely to attend. Winters (1997) noted a similar association

with an improvement in symptoms and a sense of well being leading to a decrease in lifestyle changes and adherence to treatment.

### *Coping strategies*

The second stage of Leventhal's model relates to the coping strategies utilised by a person in response to their illness representation. In the SRM there are two main types of strategy: approach and avoidance. The differential themes certainly appeared to fall into these two categories with attenders using approach strategies whilst non-attenders seemed more likely to use avoidance strategies. One of the avoidance coping strategies used was denial or minimisation, with some non-accepters using it as a way of coping with the stress of the first few weeks. Ades et al (1992) also found that denial of severity of illness predicted non-attendance.

Style of coping strategy appears key not only in deciding whether to attend, but also in the psychological well being of patients. Avoidance coping has been shown to be beneficial as a short term strategy in alleviating anxiety and depression, however in the long term approach coping is more useful in alleviating distress (van Elderen et al, 1999).

### 2.5.2. Theory of Planned Behaviour

It seemed from the interviews that attitude towards cardiac rehabilitation and subjective norm in the form of medical recommendation was important in the decision making process. The notion of perceived behavioural control differs to the component of control in the SRM. In the

TPB, it refers to the control a person feels he has over performing the behaviour of attending. This might mean considering the things that may make attendance difficult like transport and living a distance from the CRP. From the interviews, the notion of perceived behavioural control was not identified as a differential theme. Given that the PBC did not differentiate between the groups yet the other TPB variables did, the findings might best be encompassed by the Theory of Reasoned Action (Ajzen & Fishbein 1980) from which the TPB was originally developed.

#### *Attitude towards cardiac rehabilitation*

Beliefs about outcome were important with those believing that the CRP was going to improve their health and reduce the chances of recurrence were more likely to attend. It was interesting that few had a proper understanding of the course content, with the non-attenders seeming to have a poorer understanding. Thornhill & Stevens (1998) reported a similar finding with non-attenders having misunderstood the true function of a CRP. However the reported misunderstandings about the course may have been part of the non-attenders rationalising their decision not to attend.

#### *Subjective norm*

Physician recommendation has been found to be the single most important motivating factor for both men and women to attend a CRP (Lieberman et al, 1998). This was clearly evident in this our study, but in addition the recommendations from nurses also appeared to have an impact.

Despite health professionals having the potential to impact on a patient's decision to attend CR, it seemed from this research that relatively few patients recalled medical and nursing staff recommending or even mentioning the CRP.

### 2.5.3. Comparison of the Self Regulatory Model and the Theory of Planned Behaviour

It would appear that the differential themes identified in this study support both models. The meaning of the illness for the person and how they cope as a result, appear as important as their beliefs about CR and medical recommendations. When looking at the relationships between the themes (see figure 3), the primary processes of a person giving his illness meaning and then exploring ways of coping fits well with the SRM. Once a person has made some sense of their illness, they then seemed able to move onto the secondary processes of considering CR, which mirrored the Theory of Planned Behaviour. It did seem from the interviews that a person had to give his illness meaning, and then explore ways of coping as a precursor to thinking about CR and whether it comes recommended.

These findings have possible implications for designing interventions to increase CR attendance. A parallel study (Wyer et al, 2001) found that a simple intervention in the form of a letter based on the TPB did increase attendance at a cardiac rehabilitation programme. From this interview study it would appear that a letter based on a combination of the TPB and SRM using the identified differential themes as key tenets might also be effective in influencing beliefs and hence the behaviour of attending CR.

#### 2.5.4. Study limitations

It is possible that the responses of the attenders may have simply reflected the knowledge gained from attending the cardiac rehabilitation programme or from other participants; rather than a difference in beliefs held at the time of their MI. Hence the research design could have been stronger if the participants had been interviewed at the time of their decision to attend CR.

In addition, the length of time post MI that the interviews took place may well have impacted on the study findings. As illness perceptions are thought to evolve over time (Leventhal et al, 1984) and given that Gudmundsdóttir et al (2001) found causal attributions post MI changed over time, it is possible that interviews carried out immediately after MI may have shown a different relationship between attendance and illness perceptions.

One possible limitation of using IPA as a methodology stems from the intensive resources required, meaning that the sample size is invariably quite small, and this can raise questions about generalisability (Smith et al, 1997). However it should be noted that IPA as a qualitative method places a different focus on sample size to that traditionally taken by the quantitative epistemologies. The results of a qualitative study are not necessarily about being representative, but about providing insight and increasing our understanding of the topic under investigation. Smith et al (1997) suggest that even single cases have a contribution to make in terms of helping to develop novel ways of looking at new as well as existing concepts. With a set of cases one can go further and begin to develop grounded theory.

## 2.6. CONCLUSION

By interviewing attenders and non-attenders of CR, and carrying out an IPA of the data, it was possible to identify differences between the two groups. Attenders were more likely to use a psychological model to make sense of their experience and recovery, whereas non-attenders appeared to use a medical model. Attenders made more use of approach coping strategies such as information and help seeking, while non-attenders used avoidance strategies such as minimisation and denial. The other main difference between the groups was their attitude to CR; with attenders viewing it as being of fundamental benefit while non-attenders viewed it as irrelevant and superfluous.

Both the Theory of Planned Behaviour and the Self Regulatory Model appeared useful as explanatory frameworks with the meaning a person ascribes to their illness, how they cope as a result, together with their attitude to CR appear to be important factors in their decision of whether to attend. The importance of these psychological factors highlights the need for future interventions to be developed with the aim of influencing beliefs about recovery and the role of CR, in order to optimally increase attendance at CR.

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Figure 1 Leventhal's Self Regulatory model of illness behaviour

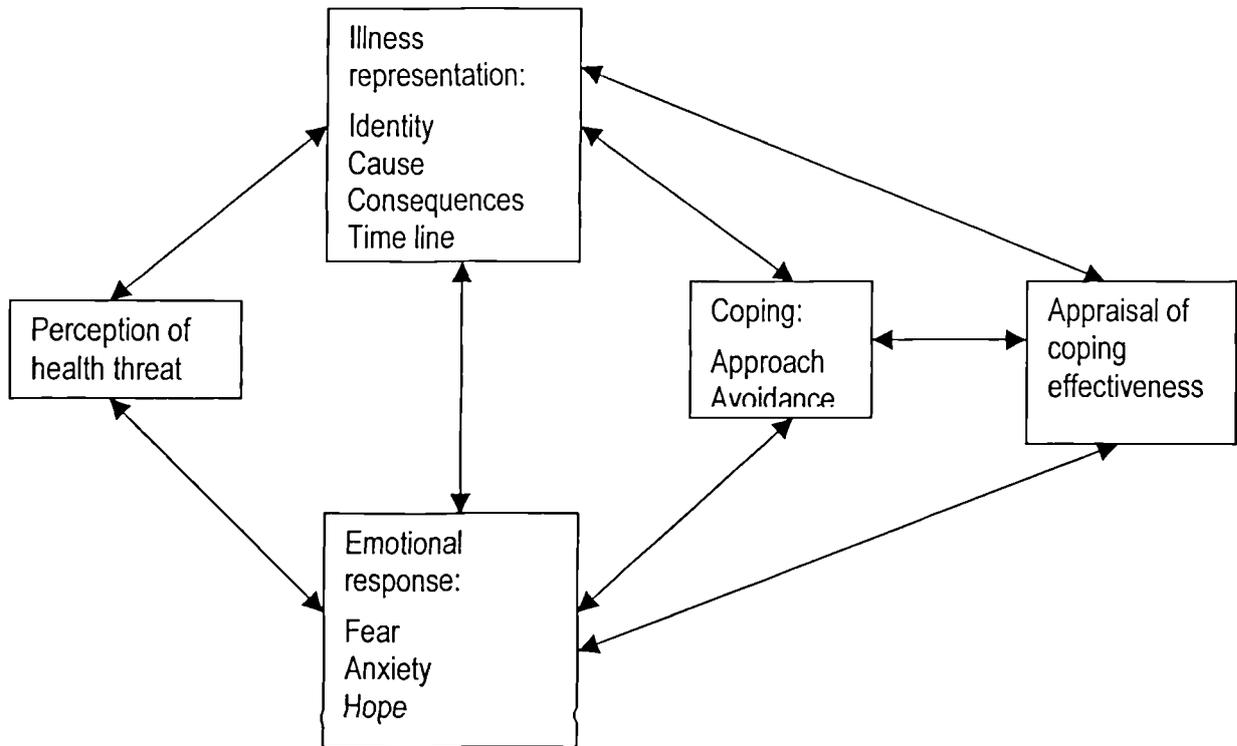
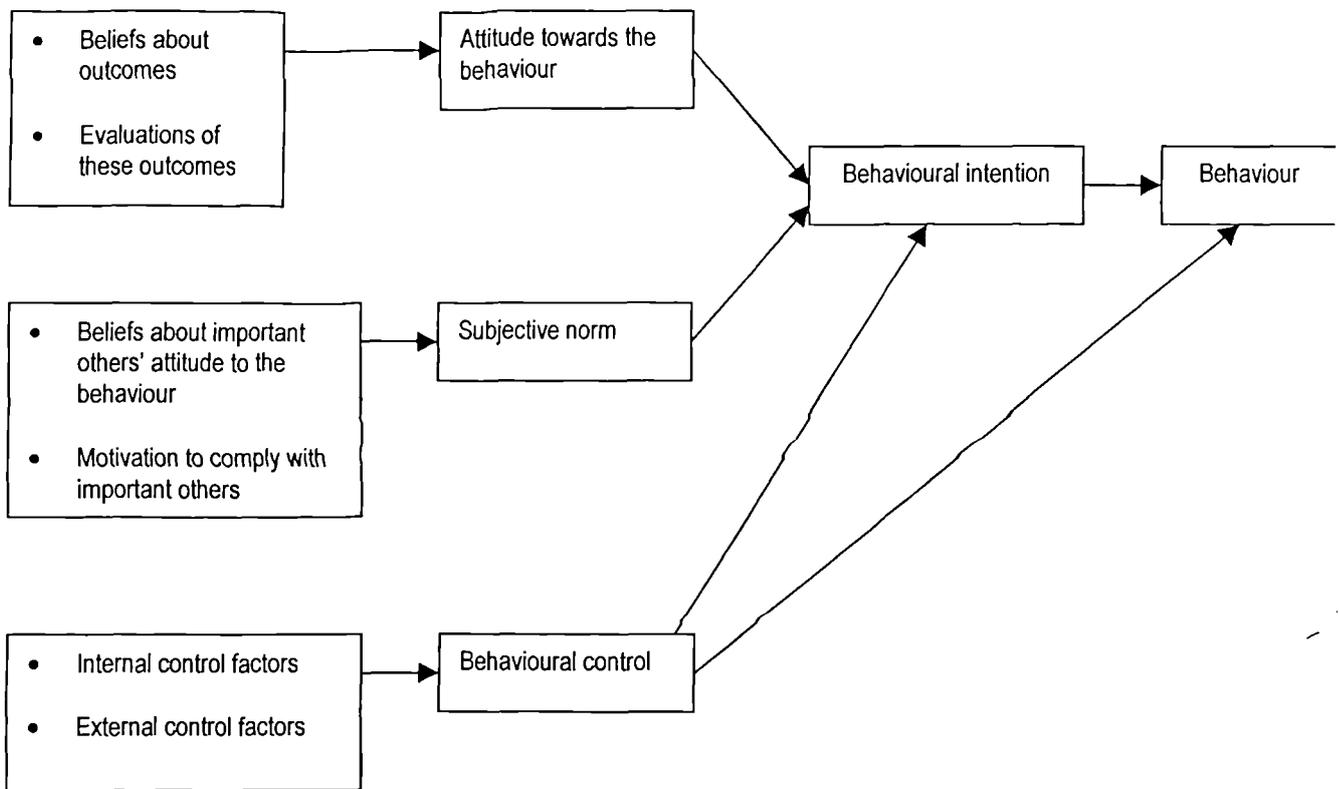


Figure 2 Theory of Planned Behaviour



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Figure 3: Interpretation of decision making process

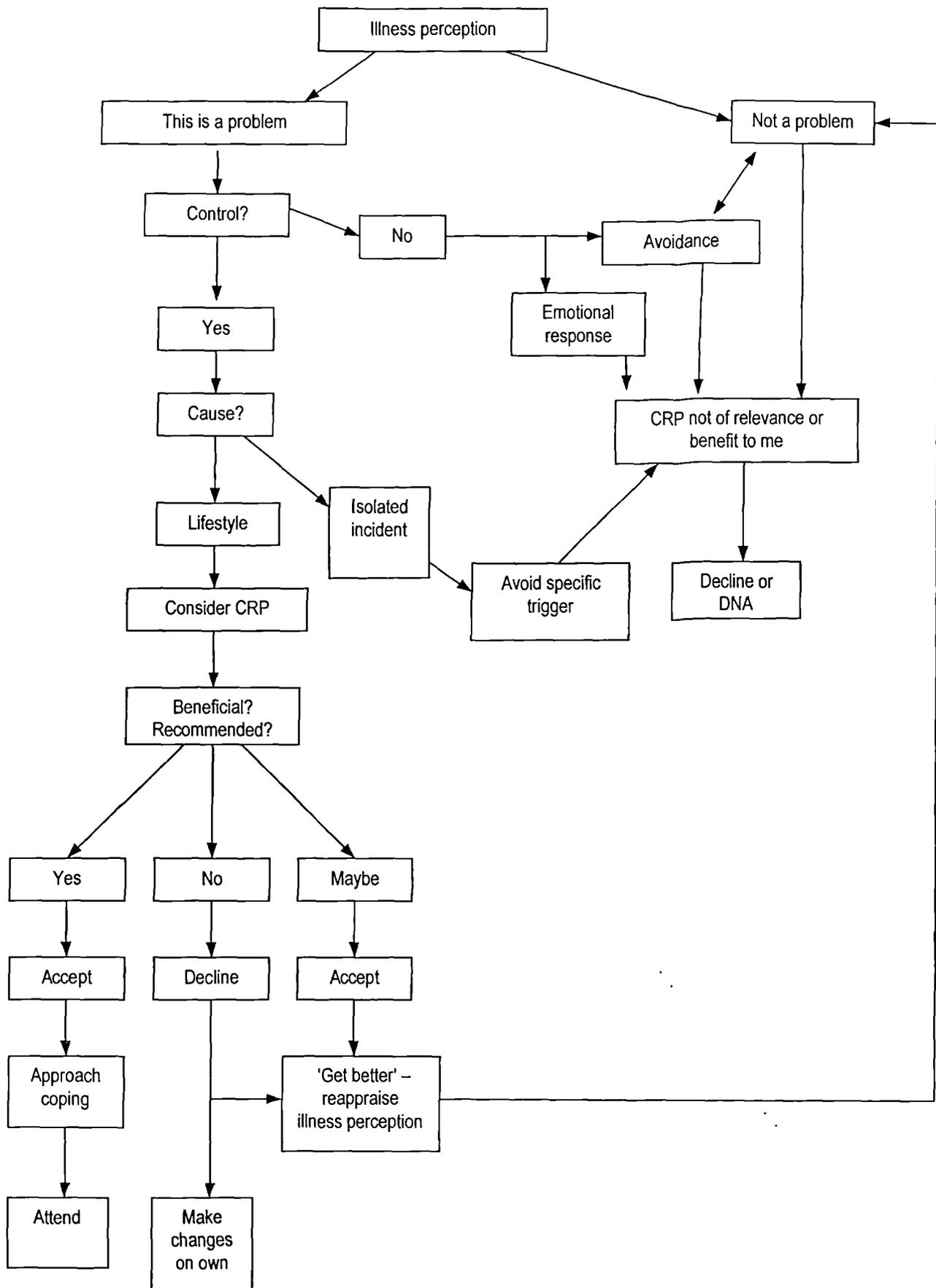


Table 1: Participant Characteristics

		<b>Accepters/ Attendees</b>	<b>Accepters/ Non-attendees</b>	<b>Non-accepters/ non-attendees</b>
Male		8	4	5
Female		1	2	1
Age(yr.)	Mean	59.6	59.7	65.83
	Min	39	51	55
	Max	70	72	71

Table 2: Key differentiating themes between groups

<b>Theme</b>	<b>Accepters/ Attendees</b>	<b>Accepters/ Non-attenders</b>	<b>Non-accepters/ non-attenders</b>
<b>Internal model</b>	Psychological model – own behaviour is important	Medical model – keep taking the tablets	Medical model – keep taking the tablets
<b>Illness perception</b>	Serious	Initially serious	Not so serious
<b>Locus of control</b>	Control over recovery & lifestyle – its up to you	Control external or ambiguous	Control external
<b>Cause attribution</b>	Lifestyle	Lifestyle	Events immediately prior to MI.
<b>Coping strategy</b>	Information & help seeker	Minimise	Denial, avoidance
<b>View of CRP</b>	CRP perceived as beneficial	Limited view of CRP, seen as not beneficial	Limited view of CRP, seen as not beneficial

## Chapter Three:

### Increasing attendance at a cardiac rehabilitation programme: an intervention study using the Theory of Planned Behaviour

#### 3.1. ABSTRACT

Now that cardiac rehabilitation (CR) has been shown to be an efficient and effective use of resources, resulting in reduced mortality and morbidity (e.g. Linden et al, 1996, Heller et al, 1993), it is essential that as many people as possible are given the opportunity to benefit from it. But despite proven benefits, uptake of services can be low (King & Teo, 1998). The aim of this research was to develop and implement a psychological intervention to influence patients' beliefs about recovery and cardiac rehabilitation, in order to increase their attendance rates at a CR programme. The intervention was based on the Theory of Planned Behaviour (Ajzen, 1985) and took the form of two letters given to patients post myocardial infarction (n = 87). Using a randomised control trial design, attendance rates for those patients who received the intervention letters were compared with patients in a control group who received nominal letters. Attendance rates for the experimental group were significantly higher than those in the control group ( $p < 0.0025$ ). This study shows that an intervention in the form of two letters given to patients can increase the number of people who attend a cardiac rehabilitation programme.

### 3.2. INTRODUCTION

Cardiac rehabilitation is of proven benefit to people who have suffered a myocardial infarction, resulting in reduced morbidity and mortality (e.g. Linden et al, 1996, Heller et al, 1993, Oldridge et al, 1988). In the UK, The National Service Framework for Coronary Heart Disease (2000) states that all people admitted to hospital suffering from coronary heart disease (CHD) should be invited to participate in a cardiac rehabilitation programme. But despite benefits of reduced morbidity and mortality, and government recommendations, uptake of services can be low (King & Teo, 1998) with some studies showing only 21% of patients attending a programme (Ades et al, 1996).

With attendance rates so low, the next step has been to identify factors which influence attendance (King & Teo, 1998). Some patients simply are not referred to CR, with women and older people being less likely to be referred (e.g. Lieberman et al, 1998, Ades et al, 1992) indicative of gender and age bias. Most common reasons for non-referral include medical reasons such as lack of mobility, unstable angina and being over 75 years of age (Pell & Morrison, 1998). Encouragingly, Schulz and McBurney (2000) found that 73.4% of MI patients were referred to a CR programme, however King et al (1999) reported referral rates as low as 23.9%.

For those referred, socio-demographic factors appear to predict attendance with non-attenders being more likely to be socially deprived, older, living further away from the programme, living alone and not having access to public transport, than attenders (e.g. Schulz and McBurney, 2000, Pell & Morrison, 1998). These research findings present a challenge to service providers to respond creatively in the way CR services are provided, so that all people regardless of where or how they live are able to benefit from CR.

Given that socio-demographic and medical factors influence attendance, recent research has focused on investigating the role of factors which may be more amenable to change (e.g. Cooper et al, 1999, Johnston et al, 1999). These studies have found that psychological factors, such as the way a patient understands their illness, influence attendance.

Psychological models such as the Theory of Planned Behaviour (TPB) developed by Ajzen and colleagues (e.g. Ajzen 1985) and Leventhal's Self Regulatory Model (e.g. Leventhal et al, 1980) have been used to guide this research. The TPB suggests that the most important influence on a person's behaviour is their behavioural intention, that is, what they intend to do.

Behavioural intention is influenced by:

- attitude towards performing the behaviour,
- perceived subjective social norms (perceived social pressure) i.e. the degree to which the person thinks significant others (e.g. nurses and doctors) feel performing this behaviour is important,
- perceived behavioural control: the degree to which a person feels that performing a behaviour is under his control.

As well as perceived behavioural control predicting intention, it also has a direct effect on the behaviour.

Hence, by influencing a person's attitude, perceived subjective social norm and behavioural control, we might be able to influence a person's behaviour in a way that could be health enhancing. The TPB has been used to predict a variety of health-related behaviours, for example attendance for breast screening (e.g. Rutter, 2000), testicular self-examination (e.g. Brubaker & Wickersham, 1990), intentions to take hormone replacement therapy (e.g. Quine & Rubin, 1997), dietary behaviours (e.g., Conner et al, 1996; Povey et al., 2000), exercise (e.g. Terry & O'Leary, 1995) and drug compliance (e.g. Hounsa et al, 1993).

A recent application of the TPB has shown that the theory was also able to predict attendance at cardiac rehabilitation programmes in two settings, in Gloucester and in Southampton. Johnston et al (1999) found that those who attended had a stronger belief in family and friends wanting them to attend (subjective norm) ( $p < 0.001$ ), and in the health professionals recommendation to attend (subjective norm) ( $p < 0.001$ ). They foresaw fewer barriers to attending (perceived behavioural control) ( $p < 0.001$ ) and perceived cardiac rehabilitation as beneficial to their health (attitude) ( $p < 0.001$ ). Attenders were also more confident that attendance would help with initiating lifestyle change (attitude) ( $p < 0.001$ ) and promote adherence to medical advice (attitude) ( $p < 0.001$ ). They also were more likely to perceive the programme as helping them to reduce their risk of a further heart attack (attitude) ( $p < 0.001$ ).

Further, applying the TPB in the Southampton heart integrated project (SHIP) (Jolly et al, 1999) demonstrated that attendance at cardiac rehabilitation was predictable from TPB variables, specifically, perceived behavioural control over engagement in exercise.

To date the TPB has been used predictively, but rarely to devise interventions (Hardeman et al., submitted). However, the TPB has been successful in predicting attendance and the predictor variables are modifiable, unlike demographic predictors. Thus the aim of the present study was to design, implement and evaluate a TPB based intervention in the clinical setting in which it had been predictive.

### 3.3. METHODOLOGY

#### 3.3.1. Research sample

A total of 113 people were asked to take part in the research. Informed consent to be studied was sought from all potential participants (see appendices 2 and 4). Thirteen people declined (response rate 88%), and another 13 were later excluded with 5 people dying and 8 people developing medical complications; leaving a sample of 87 participants. Forty-three people were randomly assigned to the experimental group and 44 people to the control group (see table 1).

-Table 1 here-

### 3.3.2. Materials

Two intervention letters were designed based on the TPB. The letters were intended to influence a person's:

- ❖ perceived behavioural control
- ❖ subjective norm and
- ❖ attitude towards attending the cardiac rehabilitation programme

According to the TPB model this would then impact on a person's intention to attend the cardiac rehabilitation programme (CRP) which would then impact on their actual attendance, but with a possible intervening effect of perceived behavioural control. How the content of the letters is related to the TPB is shown in tables 2 and 3.

It should be noted that the behavioural control section was based on Johnston et al (1992) and incorporates a wider concept of perceived control than the TPB construct. Johnston et al used the definition of perceived behavioural control from Wallston et al (1987) as the belief that one can determine one's own internal states and behaviour and influence outcome.

### 3.3.3. Design and Procedure

The study took place between April-December 2000 and was approved by the local NHS Ethics Committee (appendix1). The design was experimental, involving a randomised control trial with 87 patients admitted to a district hospital for acute myocardial infarction and referred to the cardiac rehabilitation programme. Patients were randomly allocated to one of two groups: experimental and control.

All of those who agreed to take part in the research were handed a sealed envelope containing a nominal letter thanking them for agreeing to take part in the study (see appendices 5 & 6). Half of the envelopes also contained an intervention letter (see table 2 and appendix 7). If participants received an envelope with both letters, this meant they were allocated to the experimental group, whilst if they received only the nominal letter they were allocated to the control group. The envelopes had been numbered and the contents of each allocated by random number assignment known only to a research assistant. Envelopes were given to participants in numerical order.

-Table 2 here-

The CR nurse then saw all patients for routine assessment and personal invitation to the CRP. The CR nurse was not aware of the group to which the patient had been assigned, however there was no procedure in place to stop the patient telling the nurse which letter(s) they had received.

A second intervention letter was sent to those in the experimental group who had accepted the offer of CR three weeks post MI (see table 3 and appendix 8). For those people in the experimental group who declined the offer of a place, a brief second letter was sent wishing them well and informing them that they were still welcome to contact the team (letter 2B, see appendix 9). As this group had declined the invitation it was felt inappropriate to send them a theoretical letter detailing the benefits of CR.

-Table 3 here-

The first letter given to the experimental group was designed to influence acceptance, whilst the second was designed to influence attendance. In addition, the accepters in both groups received a non-research letter at home detailing the course with start dates etc. Table 4 summarises the letters sent to the participants.

-Table 4 here-

#### 3.3.4. Main outcome measures

Acceptance and attendance figures were collected for participants, and for those who declined to take part in the research study. Those who said yes to the CR nurse and were allocated a place on a CRP were counted as accepters. Attenders were classed as those people who attended the first week of the programme. Compliance rates of all those who attended the CR programme were collected from CRP weekly attendance records held by the CR team.

#### 3.3.5. Statistical analysis

SPSS for Windows (version 9) was used to analyse the categorical data. Acceptance and attendance data was analysed using Chi-square test. Comparison of compliance rates for experimental and control groups was carried out using t-tests.

### 3.4. RESULTS

Those in the experimental group were significantly more likely to accept the invitation to attend the CRP than those in the control group ( $X^2 = 3.097$ ,  $df = 1$ ,  $p < 0.039$ ). Thirty-seven (86%) of the 43 patients in the experimental group accepted the invitation compared to 31 (70%) of the 44 patients in the control group (see figure 1).

As well as being more likely to accept, those in the experimental group were also significantly more likely to attend the CRP than those in the control group ( $X^2 = 7.91$ ,  $df = 1$ ,  $p < 0.0025$ ). Thirty-seven (86%) out of the 43 patients in the experimental group attended the CRP, compared to 26 (59%) out of the 44 patients in the control group.

-Figure 1 here-

Of those who accepted the offer of a place, those in the experimental group were significantly more likely to attend the CRP, than those in the control group ( $X^2 = 4.333$ ,  $df = 1$ ,  $p < 0.0185$ ). Two (5%) of the 37 patients who accepted from the experimental group did not attend, compared to seven (23%) of the 31 patients who accepted from the control group but did not attend.

Three people who had initially declined the offer whilst inpatients later attended the CRP (two from the experimental group and one from the control group). There was no difference in compliance rates between the experimental group and control group, with all participants attending an average six out of seven sessions (see table 1).

Neither distance lived from the programme nor age predicted attendance with no significant difference between the groups of attenders and non-attenders ( $t = -0.045$ ,  $df = 82$ ,  $p > 0.964$  and  $t = -1.148$ ,  $df = 68$ ,  $p > 0.255$  respectively). However gender did predict attendance with women being less likely to accept ( $\chi^2 = 19.103$ ,  $df = 1$ ,  $p < 0.001$ ) and attend ( $\chi^2 = 8.192$ ,  $df = 1$ ,  $p < 0.004$ ). To test whether the differences in acceptance and attendance among men and women were a function of distance and age, a series of further tests were carried out. However, there was no significant difference in age ( $t = 0.769$ ,  $df = 60$ ,  $p > 0.445$ ) or distance lived from the programme ( $t = -1.291$ ,  $df = 82$ ,  $p > 0.20$ ) between the gender groups.

### 3.5. DISCUSSION

The results show that it is possible to increase attendance at a cardiac rehabilitation programme by giving patients a letter based on the Theory of Planned Behaviour, before they are offered a place and another before they are due to attend. The research design used suggests that the effect was not simply due to receiving a letter, as the control group also received letters 3 days and 3 weeks post MI. However it should be noted that the 'decliners' in the control group did not receive a second letter.

The findings of this research appear to support previous research findings (e.g. Johnston et al, 1999) that the TPB would be a useful framework for designing an intervention to increase attendance at CR. However it is possible that wording in the intervention letters such as "research has shown that attendance can reduce the chances of dying from another heart attack" may have acted as a fear message and been responsible for the significant result rather than the theoretical basis of the letters.

Given the work of Cooper et al (1999) and Petrie et al (1996), an intervention letter based on Leventhal's Self Regulatory Model looking at illness perceptions of control and cure would make an interesting alternative for future research. However there is as yet little evidence of interventions based on this model demonstrating improved outcomes. A more widely used model, Bandura's Social Cognitive Theory (Bandura, 1997) would have concentrated on the enhancement of self-efficacy beliefs. It is highly likely that this would have been effective with individuals who already wished to attend CR.

The strongest argument in favour of the TPB as a basis for intervention is that it offers a guide to persuading patients to accept the offer of CR in addition to encouraging them to attend after accepting. Thus it addresses both the enhancement of motivation in those who have not yet decided to attend and the implementation of action in those who have decided to attend. The results suggest that the experimental group gained some benefit from each of the two letters, the first motivating and the second facilitating action.

When using a randomised control trial design, it is anticipated that differences between groups will be small, yet examples do exist where randomisation resulted in fundamentally different groups (e.g. Lee et al, 1980). In this research study there was no statistical evidence that other factors such as age, gender and distance from hospital influenced the experimental findings. However there were slight differences between both groups with those in the control group living on average 1.48 miles further away from the programme and being on average 2 years older than those in the experimental group. When both groups were analysed as a whole, neither distance nor age predicted attendance in this sample. The authors acknowledge that previous research (e.g. Schulz & McBurney, 2000) has shown that both age

and distance from programme can predict attendance, and the lack of a significant difference in age and distance between the groups may have been due to the small sample size.

As found in previous research (e.g. McGee & Horgan, 1992), when analysing both groups together, there were gender differences in acceptance and attendance rates with women less likely to accept and attend CR. However there were too few women in this study to carry out sub group statistical analysis on any gender differences relating to the impact of the intervention. This does however highlight the need for future research to focus on interventions specifically targeted at women, given that research suggests that the factors influencing attendance are different for women and men (e.g. Tardivel, 1998, Benson et al, 1997).

### 3.6. CONCLUSION

Since we know cardiac rehabilitation programmes have been shown to be an effective and efficient use of resources leading to decreased mortality and morbidity rates, it is vital that as many people as possible are able to benefit from them. By use of this simple cost-effective intervention based on the Theory of Planned Behaviour, attendance was increased in an optimal way ensuring efficient use of resources. Hence this research has implications for those recruiting to cardiac rehabilitation programmes. However it should be noted that this study was relatively small scale and so further research needs to be carried out with the intention of replicating these results. This is also an area for further research with the possibility that a similar intervention could optimally increase attendance at other NHS programmes, such as pain management programmes.

The Theory of Planned Behaviour provided a useful basis for designing the intervention and the data adds to a small literature demonstrating the usefulness of the model in developing effective interventions.

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## TABLES & FIGURES

Table 1 Age, gender, distance lived from programme and compliance rates for experimental and control groups

	Experimental Group	Control Group	Statistic
Mean age (years)	62.6	65.47	Not significant $t = -1.148$ , $df = 68$ , $p > 0.255$
Gender			
Male	37	39	Not significant $X^2 = 0.132$ , $p > 0.716$
Female	6	5	
Mean distance from programme (miles)	6.19	7.67	Not significant $t = -1.15$ , $df = 82$ , $p > 0.254$
Mean number of sessions attended	5.89	5.82	Not significant $t = 0.15$ , $df = 34$ , $p > 0.88$

Ethnic group: All participants & potential participants were of Caucasian origin.

Table 2 Theoretical content of intervention letter 1 given to experimental group 3 days post MI

<b>Theory of Planned Behaviour Component</b>	<b>Wording</b>
Introduction	Like many other patients who have had a heart attack, you will shortly be offered a place on a Cardiac Rehabilitation programme.
Perceived control (after Johnston et al, 1992)	During this programme, you will be offered advice and information about how best to recover after a heart attack. It will be up to you to follow these if you want to recover as well and as quickly as possible. Experience has shown that the more effort you can put in, the more quickly the results will be achieved.
Subjective norm	The medical and nursing professions recommend that people who have had a heart attack should attend a cardiac rehabilitation programme.
Attitude towards the behaviour	This is because those who attend such a programme are more likely to recover sooner and better than those who do not attend. In addition, research has shown that attendance can reduce the chances of dying from another heart attack.
Ending	If you have any questions about Cardiac Rehabilitation, you will be able to ask the cardiac rehabilitation nurse, when she comes to talk to you about the programme. With best wishes for your recovery.

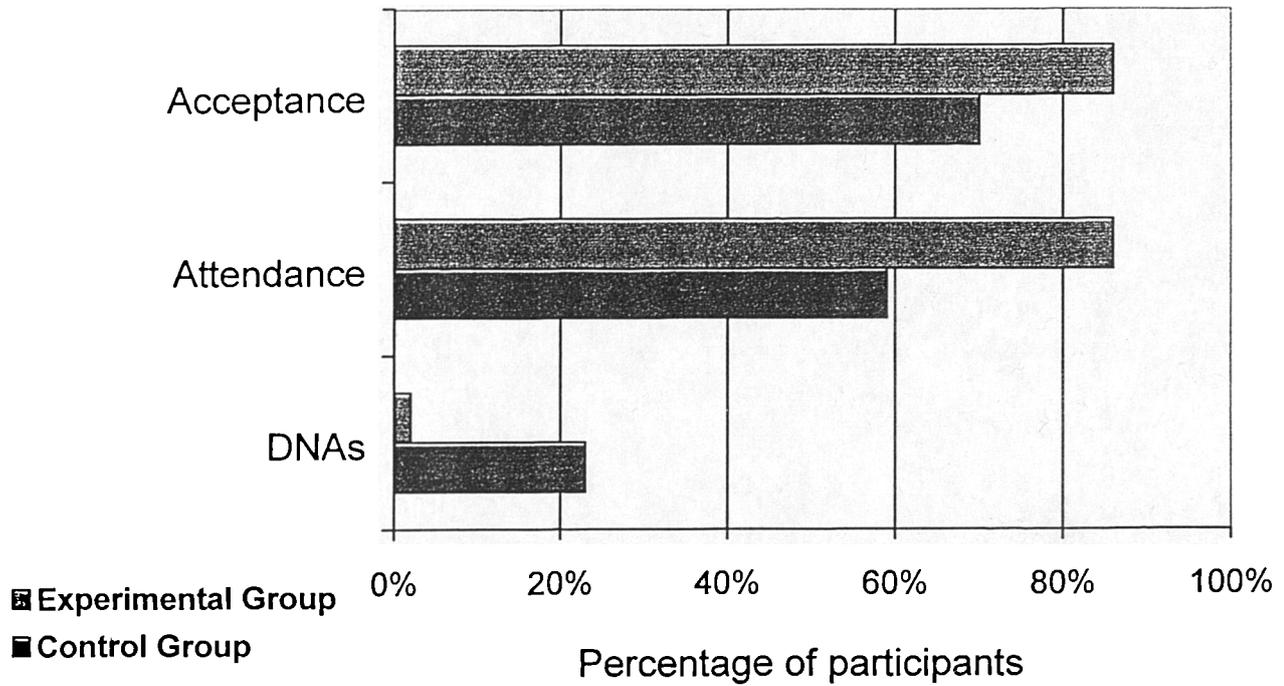
Table 3 Theoretical content of intervention letter 2A sent to accepters in experimental group 3 weeks post MI

<b>Theory of Planned Behaviour Component</b>	<b>Wording</b>
Introduction	Whilst you were an in-patient you accepted a place on the Cardiac Rehabilitation Programme.
Attitude towards the behaviour	As you are probably already aware, attending such a programme is one way to ensure the best possible recovery for yourself.
Subjective norm	In addition, by attending such a programme you will be following the current medical and nursing guidelines and recommendations.
Perceived control	During the programme the specialist team will be on hand to give you advice and information to help you to make informed choices about your rehabilitation.
Ending	In the meantime, if you have any questions please don't hesitate to get in contact with ~~

Table 4 Comparison of letters sent to experimental and control groups

<b>Time/ Condition</b>	<b>Experimental</b>		<b>Control</b>	
<b>Decision to attend CR</b>	<b>Accept</b>	<b>Decline</b>	<b>Accept</b>	<b>Decline</b>
3 days post MI	Nominal letter &  Intervention letter 1		Nominal letter	
3 weeks post MI	Intervention Letter 2A	Intervention Letter 2B		
	Standard letter detailing course dates		Standard letter detailing course dates	

Figure1 Acceptance, attendance and 'did not attend' (DNA) rates for experimental and control groups



## Chapter Four: Reflective Paper

This final paper will take a reflective stance on the process of carrying out this research thesis.

### 4.1. METHODOLOGICAL CONSIDERATIONS

This thesis study utilised both qualitative and quantitative methods. This section will detail issues which arose from the use and combination of these methods.

#### 4.1.1. Combining qualitative and quantitative methods

There are two key tenets to this thesis study, the intervention and the interviews. Although the interviews are presented here as the main paper, they were not the mainstay of the study; rather that was the intervention.

Originally the aim of carrying out interviews was to provide an understanding of factors which may influence people's decision making process and then use this to design the intervention. It soon became apparent that this was not possible given the time frame available. Instead the reality was that intervention would be based on previous research findings and the interview findings would be used to compare two theoretical models of health related behaviour; as well as providing insight into the processes underlying people's decisions of whether to attend cardiac rehabilitation.

Yet what was originally viewed as a pragmatic solution can actually be used as an illustration of the different philosophies underlying methodological choice. The research structure was finally underpinned by a more positivist approach than the constructivist approach originally anticipated.

The philosophy of science that underpins each of the approaches of quantitative and qualitative methods has to be acknowledged as being of a different nature (Potter, 1998). This project could have been carried out quite differently using a more social constructivist approach in the interview study. However there needed to be some dovetailing of the intervention and interview study, and for this to happen the philosophies underpinning each had to be compatible at some level, even if different.

The method utilised in the intervention study was underpinned by a positivist philosophy, and this partly informed the choice of qualitative method used. Historically qualitative research has been seen by many researchers as lacking an adequate methodical way of arriving at findings (Potter, 1998). However over the last ten or so years, mushrooming of specific qualitative methods and books to accompany them (Potter, 1998).

Smith et al (1999) state that there is no one definitive way to carry out qualitative research and that methods can be adapted to one's particular way of working. There does however seem some danger in how much one can stray from the rigid method and not dilute the strengths of the method.

This may be due to methodologies becoming so complex they are hard to follow, or researchers creatively adapting the methodologies to their own practise and situation. There are some studies for instance using a 'grounded theory approach' which appears to be closer in semblance to a mixture of thematic analysis, IPA and content analysis (e.g. Bath et al, 1999). This is not necessarily a bad thing, as long as researchers ensure they carry their research using a systematic strategy, and that their findings are grounded in their data.

#### 4.1.2. Quantitative methods

Deciding on the experimental method was a relatively straightforward decision. Experimental methods allow researchers to manipulate variables in order to establish cause-effect relationships. The aim of the intervention study was to determine whether giving patients a letter would increase their attendance at CR. This study was designed to minimise the impact of any other factors that might influence attendance, for instance communication skills of the recruiting staff. The only way to be certain that it was the intervention causing the effect was to use an experimental method (Miller, 1984) and undertake a randomised control trial.

#### *Threats to validity*

However the results of RCTs should not simply be accepted at face value. Some examples exist where randomisation resulted in fundamentally different groups (e.g. Lee et al, 1980). In addition, information is often not supplied concerning those who are excluded from the study (Jelinek, 1992). In this thesis study the experimental and control groups did share similar characteristics of age, gender and distance lived from the programme. Other factors which

may have been important, such as physician recommendation were not measured. However given the randomised nature of the trial it is hoped that all other factors would have been equal. Exclusions from the study were made on the basis of medical complications that would have excluded them from eligibility of the programme and so attendance was no longer an issue for them to consider.

Another threat to the validity of a RCT comes from non-response bias (Bowling, 1997) which is the difference in characteristics between respondents and non-respondents. In the thesis study there was a clear difference between these groups, with patients who said no to the research being more likely to say no to CR. It is possible that if this group had been included in the study the result may have been different, but it is difficult to hypothesise. The non-participants may have been more resistant to the impact of the intervention, however with the RCT design there would have been equal numbers in both groups. Hence the significant result might have remained but with a less powerful result. This is an issue mentioned again in the section on Ethics committee.

Another bias can be introduced from the recruiter being aware of the condition the participant has been allocated to, and their behaviour altering as a consequence. In order to reduce this bias, the recruiter and researcher were blind to the condition the participants had been allocated to. As both groups received a letter, it is hard to say whether the participants in the intervention group were aware that their letter included the intervention. Double blinding is preferable given that RCTs which are not double blinded can exaggerate effectiveness of a treatment by about 17 per cent (Schultz et al, 1996). It is possible that in the intervention group, participants may have been aware that they had received a 'special' letter but whether

this would have impacted on their decision to attend in any way is hard to tell.

Another threat to validity was that of 'seepage'. This is the possibility that a one patient in the experimental group passing the intervention to a fellow patient who happened to be in the control group. Not only could there have been contamination with letters being exchanged, but patients in the control group feeling they were missing out on information. This has to be an ethical consideration when planning RCTs. It is only ethical to proceed with a control group receiving no treatment when it is not clear whether the treatment does good. An example of when a psychological intervention has not had the desired impact is given by Johnston et al (1999) who found that a psychological intervention designed to increase attendance at CR, in fact decreased it. Hence prior assumptions as to the outcome of psychological interventions have to be made with caution.

#### 4.1.3. Qualitative methods

When deciding which method to adopt, I found it helpful to think of qualitative methods being on a continuum with content analysis at a positivist end and grounded theory at a social constructivist/post modernism end, with thematic analysis and interpretative phenomenological analysis (IPA) in the middle. Given that the intervention study had a strong theoretical underpinning, I felt that utilising a method based on social constructivist philosophy such grounded theory, would have involved too much of a philosophical shift. In addition, grounded theory is an extremely labour intensive methodology normally used with an aim of developing theory. At the other end of the continuum lies content analysis; however it could be argued that content analysis should not be classed as a qualitative method as it transforms

phenomena into numerical counts (Potter, 1998). This seemed to leave a choice of thematic analysis and IPA.

Thematic analysis (TA) should really be thought of as a process for encoding qualitative information rather than a separate method such as grounded theory (Boyatzis, 1998). At its most simple TA can be used to produce a list of themes, at its most complex to produce a model with themes and qualifications that are causally related. In addition, the themes can be generated from the raw information or deductively from theory and previous research (Boyatzis, 1998). Its all-encompassing nature was appealing, however at the same time its lack of a coherent theoretical philosophy appeared to be a drawback.

#### *Interpretative phenomenological analysis*

One of the other options to be considered was IPA, which is a method increasingly being used in the field of psychology (e.g. Osborn & Smith, 1998) in a bid to understand the participant's personal view of the phenomena being investigated. The method acknowledges that the researcher impacts on the research process by way of having to make sense of, and interpret the participant's personal world (Smith et al, 1999).

This explicit acknowledgement of the researcher's role appealed to me, as I felt that interpretation should be acknowledged as an integral part of the research process. As a person who had previously been a member of a CR team, I knew that I would have preconceptions about the differences between attenders and non-attenders. In addition, I had two models the Theory of Planned Behaviour and the Self Regulatory Model firmly planted in my mind as a framework for the way that people behaved. I realised that factors such as these

might play a role in how I carried out the analysis. Within this context of acknowledging my role, it was important that I aimed to set aside my own prejudgement beliefs, experiences and knowledge so that I could interview people with an unbiased receptive presence (Moustakas, 1994).

### *Validity*

The validity of qualitative studies should be considered as a different issue to that of quantitative studies. The results of a qualitative study are not necessarily about being representative, but about providing insight and increasing our understanding of the topic under investigation. One of the ways this is done is to give interview quotes to illustrate all the key points made.

Even though the results section was largely made up of quotes to ensure validity, it must be acknowledged that there are still some threats to validity. For instance there was a danger that having previously worked in CR, I would perhaps view the non-attenders in a less than favourable light. I was not aware that I did this, rather I was aware of trying to elicit the reasons behind their decision in a way that did not question their decision. Another threat to validity may have come from the prior knowledge of the two models. It is possible that given the use of the models, I attended more to those findings which fitted the model. This has to be an inherent danger when using a theory driven approach and qualitative methods. However the findings did not fit either model in its entire form or by itself which hopefully suggests that I was not 'theory-blinded'. For instance, perceived behavioural control (TPB) and illness identity (SRM) did not seem to be issues identified during the interviews.

#### 4.2. DIRECTIONS FOR FUTURE RESEARCH

The intervention enhanced motivation/intention to accept the programme and facilitated the behaviour of actually attending. Hence this research has implications for recruiting to cardiac rehabilitation and other health service programmes where motivation to attend may be an issue.

A study is currently being planned at Gloucestershire Royal to replicate the thesis intervention study in the Pain Management Service. However it should be noted that *no* research study has been conducted prior to this, showing the TPB to have utility when predicting attendance at a pain management clinic. It is possible that the beliefs underpinning attendance at such a programme are different to those at a CR programme, and so a TPB intervention may not be appropriate.

Given that Leventhal's model showed predictability (e.g. Cooper et al, 1999) on the Illness Representation Questionnaire control/cure scale, it is possible that an intervention based on this model may also increase attendance at CR. However it should be noted that the element of Ajzen's behavioural control in this thesis intervention study was nearer Leventhal's notion of control over illness, and so there would probably be little to be gained by just having an intervention based on Control/Cure.

### 4.3. CLINICAL IMPLICATIONS

By use of the simple cost-effective intervention, it seems that the number of those able to benefit from cardiac rehabilitation can be increased for a minimal outlay. Previous research has shown that interventions based on the TPB carried out by nurses have led to an increase in attendance but not enough to be cost effective (Jolly et al., 1999). In contrast this intervention is simple and cost effective to implement. Hence the clinical implications of this research seem potentially significant.

### 4.4. ETHICAL ISSUES

#### 4.4.1. Ethics committee

It is widely agreed that research participants should give their informed consent to take part in research, and that this should be obtained in writing (Bowling, 1997). However asking for and obtaining written consent seemed to impact on this research in several ways. It meant that recruiting to the study was a more cumbersome task for the nurse and this might have led to a reduction in the number of people she recruited.

When people were recruited they were told that the study simply involved being given a letter to read and an invitation to take part in an interview. However when people were then asked to sign a consent form, some became concerned. For some it seemed that by signing a form they were relinquishing control with one participant remarking "I've got to sign my life away have I?".

#### 4.4.3. Timing of recruitment

In order to impact on acceptance, I needed to recruit to the intervention study before the CR nurse had assessed them; within 3 days of them having an acute MI. For some this is a time of great stress and emotional upheaval. Despite this, the majority of people seemed happy to take part in a research project. However it should be noted that 12% of people refused. One woman had had time to reflect "I've always taken on too many things which is why I'm in here...so I'll say no". For some people it did seem that they found the prospect of taking part in any research project too stressful or too much to think about. There are ethical considerations here, in particular, the way the research is introduced and how refusal is handled. I tried to ensure that if someone said 'no', then they did not feel bad about it.

### 4.5. PERSONAL REFLECTIONS and LEARNINGS

#### 4.5.1. Theory/model based research

Early advice from Professor Johnston was 'pick your model first'. Having recent research (e.g. Johnston et al, 1999, Cooper et al, 1999) to follow on from, and having a model as a central focus has kept me on track and provided me with a framework to design, implement and interpret the results.

By using a model I have become more ordered and systematic in my thinking and approach. There is of course the danger that by using a model you only see what fits into your model. However I hope by using the Self Regulatory Model as well as the TPB that I was able to widen my scope slightly.

#### 4.5.2. Collaboration

When people are referred to the CR team, they are 'picked up' by the CR nurse who then goes to assess them. This research prised another stage into this process, with the nurse having to inform myself as the researcher of all referrals, and then allowing me to have the time to talk to the potential participants before they were invited on the CRP by the nurse. As I was not always on the ward, the plan was for the nurse to recruit as a back up. This meant her job was made more time consuming as she had to ask people if they would be willing to take part in the research, then give them the letter, allow them time to read it, and then return to assess the person.

That the nurse managed to recruit at all, is a testament to her commitment to the research. As the researcher I endeavoured to nourish this commitment from the very beginning of the research by keeping her informed of developments, asking for her opinion on what may be appropriate ways forward, and naming her as an author in submitted papers. Her input and insight were invaluable to me, and without them the research process may have been a very different story.

#### 4.6. CONCLUSION

By utilising out both qualitative and quantitative methods, I have been able to grasp an understanding of their respective philosophies and values, as well as when each is appropriate. I have a greater understanding of the ethical implications of research, and the essential need of collaborating with other staff. Using a theory driven approach to research has also been useful in providing me with a framework, as well as encouraging me to work in a systematic fashion.

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## LIST OF APPENDICES

1. Ethics Committee Approval
2. Consent Form
3. Interview Format
4. Information sheet given to all potential participants
5. Nominal letter given to control group
6. Nominal letter given to experimental group
7. Intervention letter 1 given to experimental group
8. Intervention letter 2A sent to experimental group
9. Intervention letter 2B sent to experimental group
10. Instructions to Authors, Coronary Health Care Journal
11. Journal & Conference Correspondance

## APPENDIX 1

Ethics Committee Approval

Victoria Warehouse  
The Docks  
Gloucester  
GL1 2EL

Tel: (01452) 300222  
Fax: (01452) 318800

Direct Tel: (01452) 318864  
Direct Fax: (01452) 318868

Please contact: Hazel Moynihan  
(Administrator, Glos LREC)

Our Ref: 99\_92G(25\_2).doc

25 February 2000

Mrs Sarah Wyer  
Parton Court Farmhouse  
Parton Road  
Churchdown  
Gloucester  
GL3 2JG

Dear Mrs Wyer

**Study No 99/92G : Increasing attendance rates at a cardiac rehabilitation programme using the theory of planned behaviour: an intervention study**

Thank you for attending Gloucestershire LREC on 23 February 2000 with Louise Earll. The committee are able to give you full approval to proceed with your study. We would appreciate sight of letters 1, 2a and 2b in the form in which patients would get them, together with the Patient Information Sheet and Consent Form on Gloucestershire Royal headed paper.

The Committee draws your attention to:

- a) It is the responsibility of the investigator to notify the LREC immediately of any information received by him/her, or of which he/she becomes aware which would cast doubt upon, or alter, any information contained in the original application, a later amendment application or verbal resume submitted to the LREC. The committee should be informed immediately if this information would raise questions about the safety and/or continued conduct of the research.
- b) The need to comply with the Data Protection Act 1984.
- c) The need to comply, throughout the conduct of the study, with good clinical research practice standards.
- d) The need to refer proposed amendments to the protocol to the LREC for further review and to obtain LREC approval thereto prior to implementation (except only in cases of emergency where the welfare of the subject is paramount).

APPENDIX 2

Consent form



Gloucestershire Royal Hospital  
Great Western Road  
Gloucester  
GL1 3NN  
Tel: 01452 528555

## CONSENT FORM

### Recovery after a Heart Attack Research Project

Name of Researcher: Sarah Wyer

Patients name & DOB:

Please initial box

1. I confirm that I have read and understand the information sheet for the above study .....
2. I understand that my participation is voluntary and that I am free to withdraw at any time without my medical care or legal rights being affected. ....
3. I agree to take part in the above study.....

\_\_\_\_\_  
Name of patient

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name of person taking consent  
(if different from researcher)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Researcher

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

## APPENDIX 3

### Interview Format

## Interview Format

Could I start by asking you when you had your heart attack?

OK...so its been ...months since your heart attack...

How have things been since then?

In your opinion, how has your heart attack affected you? (Consequences)

What has been the most difficult thing to cope with? Has anything made that easier to cope with? (Coping)

How do you see yourself in a years time? (Timeline)

Do you have any ideas about what caused your heart attack? (Cause)

What are your thoughts/views about your recovery now? (Control)

With regard to your recovery do you view it as something you have control over? Or is it something thats going to take its own course?

Do you feel yourself that there is anything you can do to make a difference to your recovery? (Control)

Remembering back to when you were on the ward, and were first told about CR, what were your first thoughts/reaction/response? (Attitude)

Prompt: Did you accept the offer? Would you be able to say abit about your reasons for accepting/declining?

Did you have ideas about what the programme was about? (Attitude)

Did you think the cardiac rehabilitation programme would have an effect on your recovery in any way? (Attitude)

Were you of the opinion that the doctors & nurses thought you should attend the cardiac rehabilitation programme? (Subjective norm)

What did your family & friends think about the cardiac rehabilitation programme? Did they think you should attend? (Subjective norm)

Were there things that would have made it difficult for you to attend? (Behavioural control)

When you went home, what were your thoughts then about the programme?

Attendance:

Did you attend a cardiac rehabilitation programme ?

Explore reasons for decision to attend/not to attend? So what made you decide to .....

When did you make the decision?

Is there anything that would have made you change your mind?

What did you see as the benefits/drawbacks of attending?

## APPENDIX 4

Information sheet given to all potential participants

## Recovery after a Heart Attack Research Project

### Information Sheet

The aim of this research is to improve recovery for those people who have had a heart attack.

Taking part would involve being given a short letter to read. Some of those who take part will also be invited to take part in an interview.

The research does not involve any medical treatments or procedures. If you do decide to take part, it will not affect your treatment in any way.

If you would like to discuss this further please feel free to contact me on ext. 4144.

Thank you for reading this.

Sarah Wyer, Researcher,  
University of Warwick, &  
Gloucestershire Royal NHS Trust.

## APPENDIX 5

Nominal letter given to control group



Gloucestershire Royal Hospital  
Great Western Road  
Gloucester  
GL1 3NF  
Tel: 01452 528555

## **Recovery after a Heart Attack Research Project**

Thank you very much for agreeing to take part in this research project.

I will be writing to a random selection of patients in approximately 3 months to ask if they would be willing to take part in a short interview. If you are selected I will write to you then. You are of course free to decline the invitation.

If you have any questions or comments, please feel free to contact me on 01452 528555 ext. 4144.

With best wishes,

Sarah Wyer, Researcher,  
University of Warwick & Gloucestershire Royal NHS Trust.

## APPENDIX 6

Nominal letter given to experimental group



Gloucestershire Royal Hospital  
Great Western Road  
Gloucester  
GL1 3NN  
Tel: 01452 528555

## **Recovery after a Heart Attack Research Project**

Thank you very much for agreeing to take part in this research project.

I will be writing to a random selection of patients in approximately 3 months to ask if they would be willing to take part in a short interview. If you are selected I will write to you then. You are of course free to decline the invitation.

I would be grateful if you would read the enclosed letter. You will receive a second letter in a few weeks time.

If you have any questions, please feel free to contact me on 01452 528555 ext. 4144.

With best wishes,

Sarah Wyer, Researcher,  
University of Warwick & Gloucestershire Royal NHS Trust.

## APPENDIX 7

Intervention letter 1 given to experimental group



Gloucestershire Royal Hospital  
Great Western Road  
Gloucester  
GL1 3NN  
Tel: 01452 528555

Like many other patients who have had a heart attack, you will shortly be offered a place on a Cardiac Rehabilitation programme.

The medical and nursing professions recommend that people who have had a heart attack should attend a cardiac rehabilitation programme. This is because those who attend such a programme are more likely to recover sooner and better than those who do not attend. In addition, research has shown that attendance can reduce the chances of dying from another heart attack.

During this programme, you will be offered advice and information about the best ways to recover after a heart attack. This will help you to make informed choices enabling you to recover as well and as quickly as possible. Experience has shown that the more effort you can put in, the more quickly these results will be achieved. So, to a certain extent, how you recover will be up to you.

If you have any questions about Cardiac Rehabilitation you will be able to ask Julia Harrison, the cardiac rehabilitation nurse, when she comes to talk to you about the programme (Julia is based on Ward 13).

With best wishes for your recovery

The Cardiac Rehabilitation Team

## APPENDIX 8

Intervention letter 2A sent to accepters in experimental group

Date

Name  
Address

Dear ,

Whilst you were an in-patient you accepted a place on the Cardiac Rehabilitation Programme. As you are probably already aware, attending such a programme is one proven way to ensure the best possible recovery for yourself.

In addition, by attending such a programme you will be following the current medical and nursing guidelines and recommendations.

During the programme the specialist team will be on hand to give you advice and information to help you to make informed choices about your rehabilitation.

In the meantime, if you have any questions please don't hesitate to get in contact with Julia Harrison on ward 13 (01452 394764).

With best wishes,

The Cardiac Rehabilitation Team

APPENDIX 9

Intervention letter 2B sent to experimental group

Date

Name  
Address

Dear ,

Whilst you were an in-patient you were offered a place on the Cardiac Rehabilitation Programme, but decided not to take up the offer.

We do know from experience that some people change their mind about attending the programme, when they return home. This letter is just to let you know that if you do change your mind, you are more than welcome to come along to a programme.

If there is anything about your recovery or cardiac rehabilitation that you wish to discuss, please feel free to contact Julia Harrison, the cardiac rehabilitation nurse on 01452 394764.

With best wishes

The Cardiac Rehabilitation Team

APPENDIX 10

Instructions to Authors

Coronary Health Care Journal

# Coronary Health Care - AN INTERNATIONAL JOURNAL

## INSTRUCTIONS TO AUTHORS

The journal editors, Grace Lindsay and Ann Taylor, welcome articles for publication in the journal. As your article is double blind refereed, we require three copies of your typescript and illustrations and these should be sent to: Grace M. Lindsay, Nursing and Midwifery School, Glasgow University, 68 Oakfield Avenue, Glasgow G12 8LS, UK.

### DISK SUBMISSION

The submission of a disk along with your typescript is encouraged. The editor will accept a 3.5 inch disk in any IBM or Macintosh word-processing format. Please indicate on the label attached to your disk, your name, address, typescript title, and the name of the word-processing package used.

### DIGITAL OBJECT IDENTIFIER

Churchill Livingstone assigns a unique digital object identifier (DOI) to every article it publishes. The DOI appears on the title page of the article. It is assigned after the article has been accepted for publication and persists throughout the lifetime of the article. Due to its persistence, it can be used to query Churchill Livingstone for information on the article during the production process, to find the article on the Internet through various Web sites, including IDEAL, and to cite the article in academic references. When using a Churchill Livingstone article in a reference section, it is important to include the article's DOI in the reference as volume and page information is not always available for articles published online. The References section, below, shows samples of DOI included in references. Further information may be found at <http://www.academicpress.com/doi>.

### TYPES OF ARTICLE AND WORD COUNT

We can accept full original and review articles of between 3000 and 5000 words in length. Shorter articles of between 1000 and 1500 words devoted to *clinical perspectives* or *cases in curative care* are welcome. The result of articles submitted to this section should be to highlight areas of good clinical practice ideally where research findings have been utilised and where evidence of improvement in effectiveness of care delivery has been demonstrated.

### PRESENTATION OF TYPESCRIPTS: Review and Original Articles

Your article should be typed on one side of the paper, double-spaced with a margin of at least 3 cm. Three copies of your typescript and illustrations should be submitted and authors should retain a file copy. Rejected articles will not be returned to the author except on request.

Papers should be set out as follows, with each section beginning on a separate sheet: title page, abstract, text, acknowledgements, references, tables, and captions to illustrations.

#### Title page

The title page should give the following information:

- title of the article
- full name of each author
- you should give a maximum of four degrees/qualifications for each author and their current relevant appointment
- name and address of the department or institution to which the work should be attributed
- name, address, telephone, fax number and e-mail address of the author responsible for correspondence and to whom requests for offprints should be sent

#### Abstract

This should consist of 150-200 words summarizing the content of the article.

#### Text

Headings should be appropriate to the nature of the paper. The use of headings enhances readability. Three categories of headings should be used:

- major ones should be typed in capital letters in the centre of the page and underlined
- secondary ones should be typed in lower case (with an initial capital letter) in the left hand margin and underlined
- minor ones typed in lower case and italicized

Do not use 'he', 'his', etc. where the sex of the person is unknown; say 'the patient', etc. Avoid inelegant alternatives such as 'he/she'. Avoid sexist language.

#### References

The accuracy of references is the responsibility of the author. In the text your reference should state the author's surname and the year of publication (Smith 1989). If there are two authors you should give both surnames (Smith

& Black 1989). When a source has more than two authors, give the name of the first author followed by 'et al.'.

A list of all references in your manuscript should be typed in alphabetical order, double-spaced on a separate sheet of paper.

Each reference to a paper needs to include the author's surname and initials, year of publication, full title of the paper, full name of the journal, volume number and first and last page numbers.

Here are examples:

Bowman GS, Thompson D, Lewin RJP 1998 Why are patients with heart failure not routinely offered rehabilitation? *Coronary Health Care* 2(3): 187-192

Taylor A 2000 The effects of exercise training on patients with chronic heart failure. *Coronary Health Care* 4(1): 10-16

References to books should be in a slightly different form:

Keith EM. *Cardiac rehabilitation*. In: Lindsay GM, Gaw A (eds.) *Coronary heart disease prevention: a handbook for the health care team*. Churchill Livingstone, Edinburgh

When citing a Churchill Livingstone journal, include the digital object identifier (DOI), if noted, from the article's title page. Please note the following examples:

Nandori B, Zimaik P 1998 *Archives of Biochemistry and Biophysics* 362: 167-174, doi: 10.1054/abbi.1998.1009

Prasad R K, Ismail-Beigi F. *Archives of Biochemistry and Biophysics*, doi: 10.1054/abbi.1998.1026

#### Tables

These should be double-spaced on separate sheets and contain only horizontal lines. Do not submit tables as photographs. A short descriptive title should appear above each table and any footnotes suitably identified below. Ensure that each table is cited in the text.

### ILLUSTRATIONS

You may consider that illustrations would help to clarify your material. Line drawings and figures should be clearly labelled, bearing in mind that they may be reduced in size. Captions should be typed double-spaced on separate sheets and all figures and photographs should be clearly labelled on the back with a soft crayon. Do not use ink.

*Reproduction of borrowed illustrations or table or identifiable clinical photographs*

Permission to produce materials (illustrations and tables) must be obtained from the original publishers and authors, and submitted with the typescript. Borrowed material should be acknowledged in the captions in this style: 'Reproduced by kind permission of ... (publishers) from ... (reference)'.

### COPYRIGHT

A paper is accepted for publication on the understanding that it has not been submitted simultaneously to another journal in the English language. You should include with the typescript a signed copy of the copyright form which can be obtained from the publisher or the Editors of the journal.

### PAGE PROOFS

Page proofs are sent to the correspondence author for checking. The proofs, with minor corrections, must be returned to the journal editor within 48 hours of receipt.

### OFFPRINTS

Twenty-five free offprints are supplied to the correspondence author to whom offprint request are made. An offprint order form will be sent to the author with the page proofs for the purchase of extra copies.

### CHECKLIST

Please check your typescript carefully before you send it off to the editor, both for correct content and typographical errors as it is not possible to change the content of accepted typescripts during the production process.

- Three copies of typescript and illustrations
- Reference list in correct style
- Permission to use previously published material
- Signed copyright form

APPENDIX 11

Correspondence from:

Coronary Health Care Journal

European Health Psychology Conference 2001



# Coronary HEALTH CARE

**AN INTERNATIONAL JOURNAL**

## Editors

Grace M. Lindsay PhD  
Nursing and Midwifery School  
University of Glasgow  
68 Oakfield Avenue  
Glasgow G12 8LS  
UK

Ann E. Taylor PhD  
Physiotherapy Division  
Biomedical Sciences  
King's College London  
Shepherds House  
Guy's Campus  
London SE1 1UL  
UK

Sarah Wyer  
Health Psychology Department  
Gloucestershire Royal NHS Trust  
Great Western Road  
Gloucester  
GL1 3NN

Tel: +44 (0) 20 7848 6328  
Fax: +44 (0) 20 7848 6325  
E-mail: ann.taylor@kcl.ac.uk

31 January 2001

Dear Sarah

**Our Ref CHC/01/191**

**'Increasing attendance at a cardiac rehabilitation programme:  
An intervention study using the Theory of Planned Behaviour'**

Thank you for your paper. Ref No as above. The manuscript has been passed to the Editors for their decision on whether it should be sent out for peer review. I will be in touch with you as soon as I have their decision.

If there is any further information you require, please contact me quoting the above reference number.

Yours sincerely



ANNETTE CHRISTIE

*Editorial Assistant*

*Direct Line : 0141-330 4804*

*E-mail : A.C.Christie@clinmed.gla.ac.uk*

D1-a.\ackltr.doc

The Editorial Office  
*Coronary Health Care*

Tel: +44 (0) 141 330 4804 Fax: +44 (0) 141 330 3539 E-mail: a.c.christie@clinmed.gla.ac.uk

# Coronary HEALTH CARE

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## Editors

Grace M. Lindsay PhD  
Nursing and Midwifery School  
University of Glasgow  
68 Oakfield Avenue  
Glasgow G12 8LS  
UK

Ann E. Taylor PhD  
Physiotherapy Division  
Biomedical Sciences  
King's College London  
Shepherds House  
Guy's Campus  
London SE1 1UL  
UK

Sarah J Wyer BSc (Hon) BA (Hon)  
Health Psychology Department  
Gloucestershire Royal NHS Trust  
Great Western Road  
Gloucester  
GL1 3NN

Tel: +44 (0) 20 7848 6328  
Fax: +44 (0) 20 7848 6325  
E-mail: ann.taylor@kci.ac.uk

07 March 2001

Dear Sarah

**Our Ref CHC/01/196**

**'Predicting attendance at cardiac rehabilitation:  
A review and recommendations'**

Thank you for your paper, Ref No as above. The manuscript has been sent out for peer review and I will be in touch with you as soon as I have their comments to hand.

Whilst writing, can you please clarify something for me? Should I treat both papers, CHC/01/191 and CHC/01/196, as Review Articles or as Original Articles? Please just Email your reply to me.

If there is any further information you require, please contact me quoting the above reference number.

Yours sincerely



ANNETTE CHRISTIE

*Editorial Assistant*

*Direct Line : 0141-330 4804*

*E-mail : A.C.Christie@clinmed.gla.ac.uk*

**The Editorial Office**  
*Coronary Health Care*

Tel: +44 (0) 141 330 4804 Fax: +44 (0) 141 330 3539 E-mail: a.c.christie@clinmed.gla.ac.uk

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**Editors**  
Grace M. Lindsay PhD  
Nursing and Midwifery School  
University of Glasgow  
68 Oakfield Avenue  
Glasgow G12 8LS  
UK

Ann E. Taylor PhD  
Physiotherapy Division  
Biomedical Sciences  
King's College London  
Shepherds House  
Guy's Campus  
London SE1 1UL  
UK

Sarah J Wyer BSc (Hon) BA (Hon)  
Health Psychology Department  
Gloucestershire Royal NHS Trust  
Great Western Road  
Gloucester  
GL1 3NN

Tel: +44 (0) 20 7848 6328  
Fax: +44 (0) 20 7848 6325  
E-mail: ann.taylor@kcl.ac.uk

29 March 2001

Dear Sarah

**Original Article : Our Ref CHC/01/200**  
**'Deciding whether to attend a cardiac rehabilitation programme:  
an interpretative phenomenological analysis'**

Thank you for your paper, Ref No as above. The manuscript has been sent out for peer review and I will be in touch with you as soon as I have their comments to hand.

I enclose a Journal Contributor Copyright Assignment form and, whilst this does not guarantee publication of the article, I would be grateful if you would complete the form and return it to me at the address on the form.

If there is any further information you require, please contact me quoting the above reference number.

Yours sincerely



ANNETTE CHRISTIE  
*Editorial Assistant*  
Direct Line : 0141-330 4804  
E-mail : A.C.Christie@clinmed.gla.ac.uk

**Health Psychology 2001**  
**Conference of the European Health Psychology Society**  
**and the Division of Health Psychology of the British Psychological Society**  
**Changing Behaviour: Health and Healthcare**

Send your abstract form to reach the conference organisers by February 14, 2001 to:  
 Health Psychology 2001, School of Psychology, University of St Andrews, St Andrews, Scotland, KY16 9JU

Title (Capital letters)

INCREASING ATTENDANCE AT A CARDIAC REHABILITATION PROGRAMME:  
 AN INTERVENTION STUDY USING THE THEORY OF PLANNED BEHAVIOUR

Author(s), Institution, City, Country

WYER S, EARLL L, Gloucestershire Royal NHS Trust, JOSEPH S, University of Warwick, HARRISON J, GILES M, Gloucestershire Royal NHS Trust & JOHNSTON M, University of St Andrews.

Abstract

*Purpose:*  
 Cardiac rehabilitation (CR) is an efficient and effective use of resources, resulting in reduced mortality and morbidity (e.g. Linden et al, 1996). But despite proven benefits, uptake of services is low (King & Teo, 1998). Recent research (Johnston et al, 1999) has found components of the Theory of Planned Behaviour (TPB) (Ajzen, 1985) predict attendance at CR. Hence the aim of this research was to develop and implement a psychological intervention based on the TPB, with the intention of increasing attendance rates at a CR programme.

Word limit 250 words

*Methods:*  
 A psychological intervention was developed in the form of two letters given to patients post myocardial infarction (n = 87). Using a randomised control trial design, attendance rates for those patients who received the intervention letters were compared with patients in a control group who received a nominal letter.

Read the instructions from Submissions and Abstracts in the announcement booklet

*Results:*  
 Attendance rates for the experimental group were significantly higher than those in the control group ( $p < 0.0025$ ), with an attendance rate of 86% for the experimental group compared to 59% for the control group.

Presentation

*Conclusion:*  
 By use of this simple cost-effective intervention based on the TPB, the number of those able to benefit from cardiac rehabilitation can be increased for a minimal outlay. The TPB provided a useful intervention format, directing attention to both enhancing motivation/intention to accept the programme and facilitating the behaviour of actually attending. Hence this research has implications for recruiting to cardiac rehabilitation and other health service programmes where motivation to attend may be an issue.

Please indicate preference

- Paper (P)
- Interactive Poster (I)
- Oral symposium (S)
- Poster symposium (PS)
- Workshop (W)
- Round table (R)
- Other

Full Name of Presenting author

Sarah J Wyer

Full correspondence address of presenting author

Health Psychology Department, Gloucestershire Royal Hospital, Great Western Road, Gloucester, GL1 3NN.

Is presenting author a postgraduate student  
 YES/NO

Phone: 01452 394144 Fax: 01452 394195

Email: wyer@blueyonder.co.uk

Has presenting author completed their PhD  
 in the last 3 years YES/NO

Keywords, please tick up to 3

- |  |  |
|--|--|
| <input type="checkbox"/> Assessment methods in health psychology   | <input type="checkbox"/> Stress appraisal and coping             |
| <input type="checkbox"/> Theoretical issues                        | <input type="checkbox"/> Life stressors and health               |
| <input type="checkbox"/> Social influences on health               | <input type="checkbox"/> Family and children health              |
| <input type="checkbox"/> Health behaviours and cognitions          | <input type="checkbox"/> Worksite and community health promotion |
| <input type="checkbox"/> Psychological risk and protective factors | <input type="checkbox"/> Environmental risk perception           |
| <input type="checkbox"/> Stress and mind-body interactions         | <input type="checkbox"/> Primary prevention programs             |
| <input type="checkbox"/> Health promotion in the life-cycle        | <input type="checkbox"/> Communication in clinical practice      |
| <input type="checkbox"/> Psychosocial aspects of chronic disease   | <input type="checkbox"/> Health promotion and minorities         |
| <input type="checkbox"/> Quality of life and health                | <input type="checkbox"/> Training in health psychology           |
| <input type="checkbox"/> Personality and health                    | <input type="checkbox"/> Others                                  |

Acceptance email from European Health Psychology Conference 2001

30 April 2001

Dear Ms Wyer

Re: Increasing Attendance at a Cardiac Rehabilitation Programme: An Intervention Study Using the Theory of Planned Behaviour

I am pleased to be able to inform you that your submission to the joint conference of the DHP and the EHPS, HP2001, has been accepted for an oral presentation. Oral presentations have been allocated 20 minutes, (15 minutes presentation plus 5 minutes for questions).

We have already filled all the possible times for oral presentations. If for any reason it becomes impossible for you to present your paper please let us know so that your space can be allocated to someone else.

There have been over 500 submissions to this year's conference. We therefore expect it to be one of the biggest and best meetings held by the two societies. We look forward to you joining us in St Andrews in September.

Professor Derek W Johnston Professor Marie Johnston  
Conference Presidents

Acceptance email from European Health Psychology Conference 2001

2<sup>nd</sup> May 2001

Dear Ms Wyer

Re: What Makes People Decide to Attend a Cardiac Rehabilitation Programme? An Interpretative Phenomenological Analysis

I am pleased to be able to inform you that your submission to the joint conference of the DHP and the EHPS, HP2001, has been accepted for an interactive poster presentation. We propose to make posters a major feature of this year's conference. We have already accepted over 200 posters, many more than the number of oral presentations we can schedule, and expect to receive more by the rapid communications (posters) closing date (31st May). If for any reason it becomes impossible for you to present your poster, please let us know so that your space can be allocated to someone else.

Each of the 3 poster sessions will be allocated 90 minutes in a central venue in the conference without any other competing conference activities. We anticipate that the posters will form a particularly lively and critical feature of the meeting. During the poster sessions there will be a discussion of posters in groups near to the poster boards. In order to confirm the time of your presentation please consult the final programme which will be on the website by the end of July

There have been over 500 submissions to this year's conference. We therefore expect it to be one of the biggest and best meetings held by the two societies. We look forward to you joining us in St Andrews in September.

Professor Derek W Johnston Professor Marie Johnston  
Conference Presidents