Understanding the lived experience of how individuals aged between 33 and 62 years of age diagnosed with coronary heart disease (CHD) feel they obtain emotional support post percutaneous coronary intervention (PCI)

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Authorship Declaration

I, Sheona McHale, declare the work presented in this thesis is entirely my own.

When I have consulted the work of others, this has always been clearly stated and referenced.

Signed:

Dated:

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Abstract

Title:
Understanding the lived experience of how individuals aged between 33 and 62 years of age diagnosed with CHD feel they obtain emotional support post percutaneous coronary intervention (PCI)

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Background

Coronary Heart Disease (CHD) is a major cause of ill health in Scotland and one of the main methods of symptom management for this disease is Percutaneous Coronary Intervention (PCI). This treatment relieves the symptoms of the disease but does not halt the disease process, therefore, there is a need for the individual post PCI to adhere to secondary prevention information. With the advances in treatment and reduced length of inpatient stay, access to health professionals for support and information is a challenge. Research confirms patients' inability to access support increases the risk of them experiencing negative emotions which impair the individual's ability to adhere to secondary prevention. This study sought to explore the lived experience of how CHD patients feel they obtain emotional support post PCI.

Methods

A qualitative interpretative phenomenology approach was used and data were collected using individual semi-structured participant interviews. This method of data collection ensured the voice of the participant was shared. A purposive sample of 7 individuals diagnosed with CHD and treated with PCI within the past 12 months was recruited from a formalised phase IV gym-based exercise programme delivered in a community setting in one region of Scotland. The participants were mostly male with an average age of 47 years and 30% had comorbidities. Participants had undergone PCI between three and twelve months previously either as an intervention to control angina symptoms or to relieve the coronary artery obstruction caused by a myocardial infarction (heart attack). Data were analysed using an interpretive approach.

Findings

The methodological approach of analysis identified three overarching themes; PCI is not a fix, loss if identity and cardiac rehabilitation is a safety net. The use of Leventhal’s self-regulation model of illness perceptions contributed to understanding two main groups of emotions are experienced post PCI treatment. The emotions of fear, anxiety and disappointment are experienced in relation to the physical body and found to be due to the non-curative nature of the PCI. For the majority, this results in a fixation with diagnostic tests as a means of emotional support. The emotions of frustration, embarrassment and guilt are experienced in relation to a perceived loss of identity. For some a focus on lifestyle modification is a means of emotional support, for others, talking to others similar to themselves offers reassurance and for three male participants, risk-taking behaviour is exhibited as a means of taking back control. For the majority, cardiac rehabilitation provides an educational environment but fails to offer emotional support for individuals who do not trust the PCI treatment and have existing co-morbidities or experience complex social circumstances.

Conclusions

This is the first study to explore participant’s views of how age, gender, social circumstances and the presence of comorbidities affect emotions after the treatment of the PCI. Age and gender were associated with the experience of negative emotions related to the CHD diagnosis and non-curative treatment of the PCI. For some males, this resulted in risk-taking behaviour and for others, a fixation with diagnostic tests. For individuals who do not trust PCI as a treatment and have existing co-morbidities or females experiencing complex social circumstances, the information received within the current cardiac rehabilitation pathway is not sufficient to reduce negative emotions.

Contents

Chapter 1

Background

1.1 Introduction

This chapter provides an overview of Coronary Heart Disease (CHD) and the use of Percutaneous Coronary Intervention (PCI) used in the treatment of CHD. The emotions experienced post-procedure and the emotional support traditionally recommended in the pathway of care for this patient population will be explored.

1.2 Background to the CHD

Coronary Heart Disease (CHD) is a term commonly used to refer to the disease process of atherosclerosis (British Heart Foundation, 2014a). This is a build-up of fatty deposits in the coronary arteries which can result in reduced flow or a blockage of oxygenated blood flow to the heart (BHF, 2017). This reduction in blood flow may lead to a Myocardial Infarction (MI) either an ST segment elevated MI referred to as STEMI or a non-ST elevated MI, referred to as NSTEMI, where the patient may be experiencing ischemic symptoms such as chest pain (SIGN 148, 2016). Ischemic symptoms may also be associated with the condition unstable angina (SIGN 96, 2007). MI and unstable angina are referred to as Acute Coronary Syndrome (ACS) (SIGN 148, 2016). During the year 2013 to 2014, ACS contributed to more than 50% one of the major causes of ill health (Information Services Division, 2015b; SIGN 148, 2016). The reduced blood flow and ischemic symptoms may also lead to a diagnosis of stable angina (SIGN 96, 2007). Stable angina is one manifestation of CHD and is characterised where symptoms, not merely confined to chest pain, are commonly triggered, for example, after physical exertion or emotional stress (BHF, 2017). Of the 2.3 million people living with CHD, most have experienced angina (Linden, 2011). The British Heart Foundation (BHF) (British Heart Foundation, 2014a) confirms there to be 1.3 million people living with angina in the UK and when this figure is broken down by country and gender, the statistics indicate females have the highest prevalence rates in Scotland and males in Wales.

The risk factors associated with both primary and secondary development of CHD and angina include, but are not limited to, smoking, high blood pressure, diabetes and high cholesterol (Batty, Shipley, Smith, & Kivimaki, 2015). Large population studies within Scotland and England suggest risk factor reduction, such as systolic blood pressure and smoking, are linked to the reduction in CHD mortality rates with medical treatments, for example, the use of statins in the treatment of cholesterol, accounting for at least 50% of the mortality decline (Bajekal et al., 2012; Hotchkiss et al., 2014).

1.3 Treatment

PCI refers to an intervention used to restore blood flow within diseased or narrowed coronary arteries. This term is also used to refer to Percutaneous Coronary Transluminal Angioplasty (PTCA) or coronary angioplasty (SIGN 96, 2007). PCI may be used as a primary treatment for acute coronary syndrome (ACS) or as an elective or planned treatment, for stable angina (SIGN 148, 2016). The treatment involves inserting a catheter either into the femoral or radial artery and feeding this towards the site of the blockage thereafter inflating a specialised balloon to expand the artery and re-establish blood flow (Mehta, Agarwal, Ifedili, Rizk, & Khouzam, 2017). This procedure may or may not include the insertion of a stent which is a small fine wire mesh tube, often coated with drugs, which when inserted into the coronary artery will increase the diameter (SIGN 96, 2007). Another treatment used to restore blood flow is a surgical revascularisation technique called coronary artery bypass grafting (CABG) (SIGN, 2016). According to the British Heart Foundation's Cardiovascular Disease Statistics, there has been a rise in the use of PCI, a non-invasive surgical treatment, as a means of treating CHD and a decline in the number of CABG procedures (BHF, 2014a). During the year 2012, 1.6 million episodes of CHD were examined within UK National Health Service (NHS) Hospitals and approximately 92,000 PCI's were conducted compared to almost 17,000 CABG procedures. The figure related to PCI treatment has doubled within the past 10 years and Information Services Division Scotland confirms the trend in Scotland is comparable with that of the UK (Information Services Division, 2015b). Meanwhile, the number of CABG procedures has declined by 45.5% during the same period.

Contrary to this shift, a review of both medical and surgical procedures used in the treatment of CHD and angina symptoms, concludes medical treatments to be as effective as revascularisation treatments in controlling symptoms and reducing risk of future coronary events, especially when medical treatment is combined with effective risk factor modification (Deedwania, Carbajal, & Bobba, 2007). A recent extensive review of the evidence, including randomised control trials (RCT's), addressing revascularisation procedures relating to patients with significant disease, CABG was found to significantly reduce mortality risks when compared with PCI (Banning et al., 2015).

Treatment timeframes

In the initial presentation of ACS, the time from diagnosis to treatment is quick with a recommendation that the patient receives specialist cardiology support and medical treatment immediately in order to reduce the significant risks of mortality (SIGN 148, 2016). In the case of an STEMI, primary PCI is recommended at this same time point. Where primary PCI is not carried out initially, and medical treatment has failed to restore blood flow, rescue PCI may follow within a 12-hour period to reduce the significant risk of damage to the heart muscle (SIGN, 2016). Thereafter the duration of stay within the hospital setting will be dependent on the individual case, however, suggested time frames range from between 4 to 6 days (Information Services Division, 2015a).

In the case of an elective procedure for stable angina, the time from initial symptoms to treatment may be much longer (McKenzie, Turner, Khanna, Rahmat, & Curzen, 2008). To attempt to control angina symptoms the patient is more likely to be commenced on drug therapy as an outpatient in a primary care setting, and then referred from the General Practitioner (GP) to a secondary-tertiary care setting for clinical assessment (SIGN 96, 2007). According to Healthcare Improvement Scotland's local report summary, one example of the timescale is, from the initial referral from the GP surgery, the patient will be referred to the rapid chest pain clinic and expected to be seen within 5 days (NHS Scotland, 2011b). Where angiography indicates PCI to be necessary, the patient will be scheduled for this treatment. In Scotland, once the patient is referred by the consultant to have treatment, the maximum waiting time is 12 weeks (Information Services Division, 2015a). In England, the patient will expect to wait up to a maximum period of 18 weeks (NHS UK, 2015). This period of time may increase psychological distress for the patient (Astin, Jose Closs, Yusuf, & Keenan, 2014). According to studies investigating the adverse effects of waiting times, the findings of one RCT study suggest the risk of mortality is low; however, the negative risk to psychological health is increased (Harkness, Morrow, Smith, Kiczula, & Arthur, 2003). Another study confirms this period of time to increase psychological distress impacting upon risk reduction behaviours and suggests quality health information, such as educational support, is beneficial to reducing negative emotions linked with poor self-management. The advances in PCI treatment methods means the time in the hospital with access to health professional support is limited for this patient population. According to the Information Services Division, the length of an inpatient stay is approximately 1 day (Information Services Division, 2015a).

1.4 Emotional Support

According to theory emotion is predominantly psychological with key events in one's life provoking either a positive or a negative emotion, for example when an individual feels threatened, the resulting emotions of anxiety and/or fear may be experienced (Lazarus, 1994). For the CHD patient negative emotions can have a detrimental effect on a patient's ability to adhere to secondary prevention recommendations and are associated with a reduction in quality of life and an increased risks of mortality (Barth, Schumacher, & Herrmann-Lingen, 2004; Pedersen, Kupper, & van Domburg, 2011; Versteeg et al., 2009).

For the elective PCI patient, it is known that the longer waiting time pre-procedure increases levels of negative emotions (Astin & Jones, 2004). During this period the patient may be symptomatic, i.e., experiencing physical symptoms, and experiencing increased feelings of anxiety related to the scheduled event. According to Higgins et al. (2000), in an attempt to cope with their physical and emotional symptoms, the patient will seek out knowledge and support in the first instance. The main source of knowledge and emotional support at this time point will be the patients' GP.

Post-discharge it is recognised that the risks of emotions such as anxiety and the complex emotion of depression are higher within the first few days after surgery or intervention (Lauck, Johnson, & Ratner, 2009). This can lead to the patient experiencing an increased awareness of physical symptoms and feelings of uncertainty about future expectations, however, it is also recognised that these feelings will reduce over time (Barnason, Zimmerman, Nieveen, Schulz, & Young, 2012). In the case of the ACS patient, this initial period may be the first point of which they have time to reflect and digest the reality of their diagnosis. Therefore, this time point is an important opportunity for emotional support.

SIGN recommend early psychosocial assessment is carried out to identify any psychological, lifestyle and emotional issues (SIGN, 2016). However, according to Healthcare Improvement Scotland, although 90% of patients receive symptom and lifestyle advice prior to discharge; it recognises that work needs to be done to ensure all patients receive the necessary psychological assessment (NHS Scotland, 2011a). This assessment will enable the healthcare professional to provide individualised education and support for both the patient and the family or caregivers thus reducing misunderstandings about their illness and improving both their physical and emotional outcome (SIGN, 2016).

1.5 Methods of Emotional Support

In the immediate post procedure period, it is suggested that, in most cases, due to the fact the treatment has removed the physical symptoms such as pain; the main focus of the patient is emotional and how best to cope (Lauck et al., 2009). The patient may seek emotional support from a partner, family member or their wider social support network in an attempt to receive empathy and coping assistance. Although family support is suggested to be the strongest support mechanism, it is recognised that the absence of such support may have a negative impact on health outcomes (Gulanick, Bliley, Perino, & Keough, 1998; Peterson et al., 2010).

The ward nurse is traditionally seen as a provider of emotional support, offering empathy and reassurance to patients as well as a professional approach to health care and secondary prevention (Higgins et al. 2000). The nurse is rated a significant factor in the recovery process and viewed by patients as a trusted and reliable source of comfort, however, the short time spent in hospital limits the time available for ward nurses to provide support (Kilonzo & O'Connell, 2011). Once the patient is discharged from the hospital, the ward nurse is unable to provide support.

Another support mechanism is that of the cardiac rehabilitation programme (BACPR, 2012). It is a recommendation of SIGN that this patient population be referred to the cardiac rehabilitation services where a multi-disciplinary team will work with the individual to support their physical, psychological and emotional wellbeing through the use of a structured programme of activities (SIGN, 2016). However, the national audit for cardiac rehab (NACR) highlights only 10% of rehab programmes in England, Wales and Northern Ireland have a psychologist as part of their multi-disciplinary teams (British Heart Foundation, 2014b). Despite this fact, NACR confirms these programmes are successful in reducing patient anxiety and depression.

For the elective patient, the opportunity to access cardiac rehab across Scotland is variable. SIGN recognise this population are less likely to access a cardiac rehabilitation programme and Healthcare Improvement Scotland acknowledges the number of patients being offered the programme is unclear (SIGN, 96, 2007; NHS Scotland 11a). In contrast, Healthcare Improvement Scotland, confirm 80% of post-MI patients in Scotland are referred for Cardiac Rehabilitation and 60% of those attending complete the programme (NHS Scotland, 2011a). NACR indicate that in England, Wales and Northern Ireland, where cardiac rehab is offered, only 40% of elective PCI patients take up the offer, and when this figure is broken down by country, in Ireland this figure drops to 16%. Of the total number of patients audited, 39% were either not interested or rejected the offer of the programme (British Heart Foundation, 2014b).

The British Heart Foundation’s national audit of cardiac rehab highlights that during 2013, 25,000 PCI patients had this treatment as a day case leaving little time for staff to raise the question of cardiac rehab (British Heart Foundation, 2014a). Of those who were invited, the recommended maximum waiting time from treatment to starting cardiac rehab is 28 days; however, according to the National Audit of Cardiac rehabilitation, in reality, the time ranges from 20 days to 92 days (British Heart Foundation, 2014b). During this period, patients may return to daily living activities of work, driving etc.

In the absence of cardiac rehab and where the nurse and professional support is limited, the patient may seek alternative sources of emotional support in an attempt to understand their illness perceptions (Gentz, 2000). The alternative sources may come in the form of information gathering from books, leaflets, media sources or reliance upon spiritual and cultural beliefs. All of which may offer positive or negative support.

Positive emotional support offers both improved psychological and physical health outcomes for CHD patients (Tugade, Fredrickson, & Barrett, 2004). Positive emotional support is linked to mechanisms which encourage resilience and offer the patient numerous behavioural and coping strategies. In the absence of these strategies, negative emotions may hinder an individual's ability to cope. This fact compounded by the patient's lack of understanding of CHD and secondary prevention, encourage illness perceptions which are influenced by beliefs (Lauck et al., 2009). Beliefs related to the severity of their condition can positively influence their adherence to secondary prevention, i.e., the medication will protect them from future disease or negatively, i.e., the treatment has cured the disease and medication are not necessary (Stafford, Jackson, & Berk, 2008). The outpatient setting, the perceived simplicity of the procedure and the absence of physical signs of treatment may reinforce this belief that CHD is now cured (Higgins, Dunn, & Theobald, 2000; White & Frasure-Smith, 1995).

Higgins et al. (2000) conducted a cohort study where a sample (n11) of elective PCI patients was recruited to explore perceptions of recovery in the absence of cardiac rehab. One month after coronary angioplasty, the mostly male patients were keen to return to normalised activities, including work, and this was identified as a method of coping. The patients in this study chose to problem solve their own experience. The findings identified some patients deny having or experiencing negative emotions when talking to others, attempting to take control of their own anxieties. However, this approach offered mixed results. Despite some patients being readmitted to hospital, most reported low levels of energy which hindered their return to work. Most adhered to advice regarding diet and medication but none had commenced the secondary prevention advice of exercise.

1.6 Conclusions

This chapter introduces the morbidity rates for CHD and offers an explanation of the disease process and implications of CAD. An overview of the treatment options is discussed with the current trend to treat CHD patients with PCI treatment highlighted. The relevance and differences in the pathway to treatment for the ACS and patients who have elective PCI are reinforced in relation to the increased risks for negative emotions such as anxiety. An overview of the issues surrounding reduced access to professional guidance and cardiac rehab indicate negative emotions are unlikely to be addressed resulting in implications for both psychological and physical health. Where traditional methods of support are limited patients may seek alternative methods for support. In order to promote positive emotions and increase the likelihood of adherence to secondary prevention, there is a need to understand alternative methods of emotional support and identify how effective these methods are in addressing negative emotions for this patient population.

Chapter 2

Literature Review

2.1 Introduction

This chapter will introduce the importance and purpose of the literature review and provide an overview of the search strategy. The key words and databases used will be detailed and the inclusion and exclusion criteria will be specified. The critical appraisal approach to the literature will be explored and shared. The conclusion will provide a summary of the existing research, highlighting the gaps within the literature and justifying the research question used for this study.

2.2 The purpose of the literature review

The literature review will aim to offer a thorough study of the existing literature in order to understand and critically analyse what is already known in relation to the research topic and demonstrate any gaps which help justify the need for a new research study (Aveyard, 2014). The purpose of this literature review is to identify what is known about the most effective methods of emotional support for patients with CHD after they undergo PCI. This review was carried out in a logical and systematic manner demonstrating an unbiased summary of the literature and justifying the case for conducting this research study.

2.3 Searching the literature

In order to re-examine the literature in an efficient and effective process, it is suggested that a methodical approach is identified (Moule & Goodman, 2009). Although a systematic review is deemed to be methodical, providing a neutral evaluation of the research literature and where the protocol dictates, peer reviewed to strengthen the quality of the process (Bettany-Saltikov, 2012). This type of literature review methodology traditionally refers to quantitative research which in order to address the research topic would restrict the search strategy (Siu & Comerasamy, 2013). In order to retain the quality process, yet consider all empirical research related to the question Aveyard (2014) recommends a narrative review approach be carried out in a systematic manner. Applying a comprehensive systematic approach to this literature review will minimise bias and reinforce the quality process undertaken (Bettany-Saltikov, 2012). All practice and policy literature will be retained for background information and all theoretical or narrative reviews, which are generally considered to be limited in their ability to be replicated or restricted due to subject bias, will be excluded from the literature review (Moule & Goodman, 2009).

The systematic approach to the literature review will use the following:

(Bettany-Saltikov, 2012)

- Identification of aims and objectives
- Identification of databases and key words
- Specification of inclusion and exclusion criteria
- Assess, appraise and extract data from selected literature

2.3.1 Aim of the literature review

The aim of the literature review is to explore what is known about the most effective methods of emotional support for patients with CHD after they undergo PCI.

To ensure the literature review is effective and identifies all relevant research, a search plan was devised. This plan is also referred to as a search strategy and will make use of the aim in order to offer clear objectives (Aveyard, 2014).

According to Bettany-Saltikov (2012) breaking down the aim into three or more elements will focus the search strategy and identify the type of question being asked. The elements most suited to the study question are identified by the acronym PEO, Population, Exposure and Outcome, and the breakdown of the elements is detailed below:-

P	E	O
Patients diagnosed with CHD and having received PCI treatment	Analysing the methods of emotional support or post procedure	Psychological issues Experiences Perceptions

		Feelings Views

Dissecting of the question in this way helps clarify the aims and the objectives of the literature review (Bettany-Saltikov, 2012).

Aim of literature review:
Explore the methods of effective emotional support for CHD patients post PCI

Objectives of the literature review:
Collect data on methods of emotional support for CHD patients post PCI
Compare the effectiveness of these methods of emotional support for this population
Compare the findings of the studies to offer a synthesis of the results

2.3.2 Databases and key words used

The following electronic databases were used for the literature search: (Appendix 1)

- CINAHL (Cumulative Index of Nursing and Allied Health Literature)
- MEDLINE
- PsycInfo

EBSCOhost (EBSCO) was used to access the above electronic databases. The Major Subject headings, identified by the letters MM were identified from medical subject headings (MeSH) for each of the three databases. PCI and emotional support may be referred to by a number of alternative terms known as key words; these key words may include terms such as balloon catheterisation or coping. Synonyms of emotional support were also considered, i.e., psychological and environmental words were used to identify the term psychosocial. The medical subject heading and key words were entered individually and then combined to increase the search hits. The

Boolean operator words of and, or and truncation symbols (*) at the end of the word were used to retrieve all words with the same stem (Bettany-Saltikov, 2012).

2.3.3 Inclusion and Exclusion criteria

To ensure the literature review is specific to the research question, it is recommended a clear set of criteria is outlined which states and justifies the evidence to be included along with recommendations as to what research will be excluded as unrelated (Aveyard, 2014).

The Inclusion and Exclusion criteria for this literature review:

- The use of published literature which has been peer reviewed for quality purposes: empirical research from both qualitative and quantitative studies
- Due to the time constraints of this research, literature from 2005 onwards was identified
- Primary research was the main focus with letters, commentaries, reviews, discussion papers, meta-analysis and systematic reviews retained for background information
- Grey literature will be used to set the background
- Research solely related to CHD revascularisation procedures with PCI were included with all other CHD manifestations such as congenital heart disease of heart failure being excluded
- Literature aimed at an adult population was included as it is known that the pathophysiology of CHD is unlikely within the child
- Primary research related to emotional support gained within hospital, community or the home were included
- Primary research related to emotional support with outcomes measuring coping included and physical effects of CHD population post PCI being excluded

- It was decided only to use literature published in English as the translation would have been time-consuming and can change meaning.

2.3.4 Search Results

According to Aveyard (2014), the search results should be presented in a full and transparent way. The search results will be broken down to show how the full-text papers were identified.

Potential relevant papers identified from 3 database searches: 134

Duplicates: 25

Abstracts screened against inclusion criteria: 109

Abstracts rejected as not meeting inclusion criteria: 96

Full-text copies obtained and screened against inclusion criteria: 13

Full-text copies identified as not meeting inclusion criteria: 7

Full-text papers identified in final literature review: 6

From the original search of 134 papers against the inclusion and exclusion criteria, 13 papers were highlighted as suitable to explore further. Upon completion of the search for full-text copies, 3 were rejected due to inability to obtain the full text in English. Upon reading the full texts of the remaining 10 papers, a further 4 were rejected due to the interventions being aimed predominantly at physical rather than psychological outcomes.

2.4 Approach to critical appraisal of the literature

To maintain a systematic approach, the critical appraisal will offer details of the process undertaken to appraise the final papers identified in the literature review (Aveyard, 2014). A detailed evaluation will examine the strengths and weaknesses of each paper and compare the findings of the research. To guide this process and maintain a structured and consistent approach with each paper, a critical appraisal tool will be used. A critical appraisal tool is formulated in such a way that it will provide a logical framework from which to guide the assessment of the research, (Bettany-Saltikov, 2012). Although there are a number of appraisal tools, the literature identified in this review is a mixture of qualitative and quantitative data. Where there is a mixture of research types a generic appraisal tool may be used, however, in order to ask questions that are specific to the study design, it is recommended to use a tool which is individualised to the research (Aveyard, Sharp, & Woolliams, 2011). The Critical Appraisal Skills Programme (CASP) devised by the University of Oxford has developed a number of tools suitable for the both qualitative and quantitative research (CASP UK, 2013). Due to the lack of complexity and logical layout of the questions within these tools, the CASP tools have been identified as best suited for the purpose of this review.

2.4.1 Organisation of the literature review

In order to review the literature and evaluate what is known about the most effective methods of emotional support for CHD patients post PCI, Bettany-Saltikov (2012) recommend using a data extraction form. This approach will assist in developing a comprehensive understanding of the data and prompt a standardised approach to extracting the relevant information from the primary papers (Aveyard, 2014). Since the search results identified both qualitative and quantitative papers, two data extraction forms were compiled (Appendix 2). The use of the standardised extraction forms ensured all papers were systematically reviewed in the same way and the data was extracted precisely as it was reported within the papers. At the conclusion of the data extraction, one paper, The Know and Go! Program was rejected from the literature review due to the study aims and findings being related primarily to the success of knowledge acquisition from a computerised intervention and offering no evidence of psychological issues (DeVon, Rankin, Paul, & Ochs, 2010). This leaves a total of 5 studies related to interventions aimed at addressing the review question.

According to Siu and Comerasamy (2013) subsequent to engaging with the individual literature and extracting the key evidence from each, a formal summary of the papers will offer a framework for managing the data extracted. This framework will retain an effective and systematic approach to analysing and critiquing the research. Table A offers a summary of the 5 papers critically appraised and included within the literature review.

Table A. Summary of literature review

Author(s) & Lo/cation	Study Design Methodology	Study Aims	Sample	Method of Data collection	Authors Conclusions	Strengths and limitations
(Nyklicek et al., 2014) The Netherlands	Quantitative randomised clinical trial	To examine effectiveness of mindfulness-based group intervention and examine if group format superior to minimal self-help	n = 114 PCI patients Intervention (n = 57) self-help (n = 57)	Socio-demographic and self-reported psychological health using Dutch index (SAD-4), Perceived Stress Scale, Dutch Global Mood Scale, Quality of Life measured using WHOQoL-Bref, SAQ, Mindfulness measured using FM1-s plus a self-reported compliance form	The intervention was superior to the minimal self-help only in patients younger than 60 years of age with the aim to decrease psychological symptoms of distress	Sample size pre-determined. Group size small (n= 114). 82% of the study was males. Allocation of concealment not verified. Study findings only supported in a younger age group.
(Furuya et al., 2015) Brazil	Quantitative randomised control trial	To develop, implement and test an educational	n = 66 intervention (n = 34) control (n = 32)	Socio-demographic and interview screening for	Both groups improved from baseline to 6 months in	No power calculation available, sample size small. All

		programme with telephone follow-up to improve self-care of patients who underwent PCI		Perceived Health Status using Medical Outcomes Study (SF-36), Self-efficacy using the General Self-Efficacy scale, Symptoms of anxiety and depression using HADS and Medication adherence assessed by MAT; Treatment Adherence Measure)	Physical Component Summary, and in the domains of Physical Functioning, Role-Emotional and Role-Physical. The educational programme group showed a reduction in anxiety from baseline to 6 months follow-up, while the control group showed a slight increase. No difference in symptoms in depression and self-efficacy were found and both groups reported high levels of	participants from single centre. Randomisation concealed. Study personnel unblinded at outcome. Self-Efficacy Scale not validated to Brazilian population.

					medication adherence.	
(Appels et al., 2006) The Netherlands	Quantitative Randomised Control Trial	The effect of a behavioural intervention on health-related quality of life. The intervention would lead to an improvement in quality of life, and a reduction in symptoms of exhaustion, depression, anxiety and angina	n = 710 intervention (n = 366) usual care (n = 344)	Baseline demographics and somatic comorbidity obtained from medical records and asking patients. Quality of life assessed by self-administered MacNew Heart Disease HRQ Questionnaire and translated, Major depression and somatization disorders assessed according to Diagnostic and Statistical Manual of Mental	The behavioural intervention improved HRQL and related psychological factors. Somatic comorbidity and a history of CAD limited the effect of the intervention.	Computer randomisation was successfully concealed. Consider validity of the study, population recruited from multiple centres is a strength but also consider differences in usual care. Females underrepresented at baseline. The title of the paper refers to angioplasty patients - study population

				Disorders (4th ed.), Anxiety assessed by State-Trait Anxiety Inventory, Hostility assessed by State-Trait Anger Scale. Assessments at 6 months included HRQL, anxiety & exhaustion (MQ), Assessments at 18 months HRQL, exhaustion MIVE & MQ), Anxiety, depression, hostility and angina assessed by London School of Hygiene interview		included MI, CABG and PCI.
(Shiloh et al., 2014) Isreal	Quantitative Randomised Control Trial	Investigating the potential effects of psychological processes during PCI on	n = 108 intervention (n = 57) control (n= 51)	Sociodemographic self-reported questionnaire. Self-reported Cognitive	A simple adjustment in the standard PCI protocol can become a highly	Convenience Sample. Small sample size at single site. The cognitive

	psychological and functional outcomes		measures not stated. Emotional measuring tool not stated but validity explained. Depression assessed by self-reporting Patient Health Questionnaire (PHQ9). Behaviour and self-efficacy assessments not stated but referenced and validity confirmed. Statistical analysis used SPSS version 19	beneficial psychological intervention for enhancing patient outcomes. The study group reported less pain, more positive affect, greater self-efficacy and stronger intentions to change health-related behaviours. At one-month follow-up, study group evaluated general health as significantly better, reported less negative affect, less cardiac anxiety, greater functional	assessment tool – perceived pain didn't confirm use of recommended BPI and McGill SFMPQ. Study was 87% Israeli male Jews, findings not relevant to female patients. Follow up is restricted to one month, study would benefit from a 3rd time point of post 6 months.

					self-efficacy and more positive outcome expectancies regarding diet, and quitting smoking.	
(Hagberth, Sjöberg, & Ivarsson, 2008) Sweden	Qualitative descriptive design	To examine how the Norwegian Vifladt & Hopen inspired model of a patient group education programme was experienced in Sweden by women over the age of 70 who had had a serious cardiac event including treatment with PCI	n = 17	Focus group interviews	A focus on knowledge exchange instead of knowledge transfer encourages talking about self-experienced needs. The women expressed benefits of the education programme since the discussions emerged for themselves. For the health care professional,	The study method was suitable as patients knew each other from a previous intervention programme. Due to drop out, the sample size is small, (n=13). One focus group contained 3 patients. Transcriptions validated by both authors. No explanation of how themes were derived.

	there are gains to be made from obtaining the women’s point of view and learning more about their needs.	Transferability restricted as research findings restricted to the older female study population.

2.5 Review of the literature

This section will aim to provide a brief description of each of the studies, critique the methodological quality of the studies and finally combine the evidence in order to establish what is known about the most effective method of emotional support for this patient group and what remains unknown from the literature.

2.51 Description of the studies

The review found a combination of 4 quantitative studies and 1 qualitative study. Of the four quantitative studies, all were randomised control trials (RCT's) investigating the effectiveness of an intervention (Appels et al., 2006; Furuya et al., 2015; Nyklíček, Dijksman, Lenders, Fonteijn, & Koolen, 2014; Shiloh et al., 2014). Three included experimental hypothesis predicting the effect of an independent variable (Appels et al., 2006; Furuya et al., 2015; Nyklíček et al., 2014). One study used a purposive sample of the population (Hagberth et al., 2008). Three others used probability sampling (Appels et al., 2006; Furuya et al., 2015; Nyklíček et al., 2014). The study sample sizes ranged from 17 to 710 with the mean age ranging from 53 to 70 years. All papers included samples that had undergone PCI treatment either as a primary or elective procedure. One study targeted a specific sub group of patients, older women and in the remaining four studies most subjects were males. One study was designed only for patients who were assessed and confirmed as being physically tired post PCI treatment and the four quantitative studies linked emotion to a combination of anxiety, depression or hostility. All papers represented a range of interventions aimed at supporting patient's emotional well-being as a primary or secondary outcome.

Two of the study groups were exposed to psychological interventions. One, investigating the effects of a four-session mindfulness-based intervention to address stress reduction by way of improving coping with disturbing thoughts and feelings. The patients were assigned to either a small intervention group of 6 to 8 people or to a minimal self-help group who were given a written booklet containing identical contents to the intervention group. Both groups were asked to complete homework of 30 minutes daily meditation (Nyklíček et al., 2014). Shiloh et al. (2014) assigned 108 predominantly male Jewish patients of one cardiologist in Israel to either a study group or to a control group. The aim of this study was to investigate the potential effects of psychological processes during the PCI treatment. The study group were instructed to watch the monitor screen during their PCI, receive procedural and anatomical information from the cardiologist and have the option to ask questions. The control group received usual care and both groups were followed up one month later.

Appels et al. (2006) exposed a study group to a behavioural intervention and its effect on Health Related Quality of Life (HRQL), exhaustion, depression, anxiety and angina complaints compared to usual care. The intervention covered a six-month period post PCI and promoted effective rest by way of relaxation exercises and stimulating physical exercise. The intervention included homework tasks of relaxation.

A further two studies looked at educational interventions; one RCT and the other a qualitative descriptive design using focus groups. In the RCT study by, Furuya et al., (2015) the aim was to test the effectiveness of an educational programme with telephone follow-up against usual care covering a four-month period post treatment. The programme was developed and implemented by two of the researchers and aimed to increase self-efficacy through verbal persuasion by way of discussing three booklets with the patients prior to the PCI and then again post treatment. Support post discharge was given in three telephone calls offering reassurance with changing habits. In the qualitative study by Hagberth et al. (2008) the aim was to examine how a patient group experienced a programme which focuses on self-understanding through sharing experiences between patients in a group format. This model was not pre-planned by the health professionals but structured around the information needs expressed by the patients. Focus group interviews were carried out one year after this three session programme to evaluate the experience.

2.5.2 Methodological quality of studies

The literature review objectives were to collect the data, compare the effectiveness of these studies and ascertain the strength of the evidence in relation to the research question.

The papers relevant to the review question offered 5 contrasting interventions addressing emotional support. Two of the four RCT’s offered emotional support as a primary outcome, the remaining two referred to emotional support as a secondary outcome. The one qualitative study captured emotion through a structural analysis of patients' views by way of a descriptive phenomenological design.

Of the four randomised control trials, one did not include a control arm and may be referred to as a randomised trial (Nyklíček et al., 2014). Another could be referred to as a quasi-experimental study due to the randomisation approach of the patients being carried out by the same treatment interventionist (Shiloh et al., 2014). Two of the four studies can be referred to as controlled but due to the lack of methodological detail, could be classified as non-randomised and at risk of participant contamination or selection bias (Nyklíček et al., 2014; Shiloh et al., 2014). In three studies blinding of personnel cannot be validated due to lack of detail regarding concealment, therefore there may be a risk of bias in the results (Hagberth et al., 2008; Nyklicek et al. 2014; Shiloh et al., 2014).

Ethical approval was confirmed in 3 papers (Hagberth et al., 2008; Nyklicek et al., 2014; Shiloh., 2014). Two studies failed to provide ethical detail, omitting information of this kind fails to confirm whether the participants fully understood the implications of the treatments and had agreed to the potential risks of taking part in the study (Appels et al., 2006; Furuya et al., 2015).

Study designs varied within the interventions. Three studies offered group discussion, two including methods of relaxation and one referring to mindfulness (Appels et al., 2006; Hagberth et al., 2008; Nyklicek et al., 2014). The intervention duration ranged from 3 sessions, four in another compared to one study with sessions spanning a 6 month period. Although studies aimed to measure a number of different outcomes so cannot be directly compared, two of these studies did include psychological measures, and therefore the differences in the duration of the treatment may influence the results.

The setting of the studies may impact external validity and the ability to generalise the findings. Two studies were carried out in the Netherlands, one in Israel, one in Brazil and one in Sweden. The cultural and healthcare systems in these countries may differ in their recommendations and guidelines regarding recovery periods post procedure. Two interventions initiated relaxation and yoga style activities within one week of treatment (Appels et al., 2006; Nyklicek et al., 2014).

Recruitment of personnel was justified within three studies (Hagberth et al., 2008; Nyklicek et al., 2014; Shiloh et al., 2014). Two studies reported the significant role of the personnel within the intervention, however, in one of these studies, the internal validity may be compromised due to the fact the same interventionist also saw the control group in a setting where regulation of information transfer between patient and interventionist cannot be guaranteed leaving a risk of the control group being contaminated (Furuya et al., 2015; Shiloh et al., 2014).

The clinical relevance and the effect of the treatment are potentially limited due to the study samples and the small sample sizes. Sample sizes were small in four of the studies which can lead to an overestimation of the effect of treatment (Appels et al., 2006; Furuya et al., 2015; Hagberth et al., 2008; Shiloh et al., 2014). One study confirmed the use of a power calculation to identify the minimum sample required for an effect size; however, the number of participants recruited to each arm of the study was less than that predicted so reducing the power of the result (Nyklicek et al., 2014). In one study a total of 4159 patients were initially approached, the final 710 patients represented just over 17% of the population under study a fact which may reduce the statistical power of the effect in the population being studied (Appels et al., 2006). Four of the studies were made up of mostly males, therefore, the results may not be relevant to a female population. The one qualitative example, a purposive sample of 43 older females, only 40% engaged in the intervention with a further 23% failing to be included within the results (Hagberth et al., 2008). One study was carried out within a Brazilian population, where the inclusion criteria included only those who had access to a telephone. This restriction may deny a general representation of the PCI population, in this case, one participant was excluded (Furuya et al., 2015).

In comparing the control groups to the study groups, three studies compared the intervention group to usual care without clarifying usual care (Appels et al., 2006; Furuya et al., 2015; Shiloh et al., 2014). Usual care in one country may be different to another thus reliability may be reduced due to the inability to replicate the study. The differences in baseline characteristics may increase the risk of bias in the outcome measures. In 3 of the studies the populations differed in marital status or living with significant other, a relevant fact is seen in previous studies which may influence measures for psychological or emotional outcomes (Hagberth et al., 2008; Nyklicek et al., 2014; Shiloh et al., 2014). Two studies had differences in smoking habits at baseline (Furuya et al., 2015; Shiloh et al., 2014).

Although the quantitative studies confirmed outcome measures were pre-validated tools, the external validity can be challenged in the collection of the data and the number of outcomes used. All RCT studies used a combination of questionnaires with scales (Appels et al., 2006; Furuya et al., 2015; Nyklicek et al., 2014; Shiloh et al., 2014). The validity of these outcome measures relies upon the responder to take their time and understand the scales in order to self-report their feelings and emotions. In one study, the questionnaire was completed within hours of the PCI treatment expecting the patient to recall their perceived pain during the procedure. This recall of information may lead to bias in the results. The same study did not provide detail of the clinical arrangements prior to or during the PCI in regard to whether local anaesthetic or sedation was offered and accepted by any subjects, a point which may impact upon the recall of pain (Shiloh et al., 2014).   Another study used 5 different questionnaires with an approximate combined total of 77 questions completed at two time points, six weeks apart. The control group in this study included a population where 37% reported having a higher level of education and for this same group 42% had a comorbidity and 85% reporting using non-steroidal anti-inflammatory drugs (NSAIDs) suggesting the quality and reliability of the outcome data may be compromised (Nyklicek et al., 2014).

The qualitative study failed to provide detail regarding how themes were derived, a point which may compromise the validity of the data analysis (Hagberth et al., 2008).

Due to differences in the study design and the variety of outcome measures of all 5 papers, a narrative synthesis of the findings of these papers will follow.

2.5.3 Findings of the literature review

The study population included a combination of patients treated with PCI either electively or post-MI, no studies were found to address exclusively an elective PCI population in order to compare the findings of the papers and offer a synthesis of the results the studies will be discussed in relation to the methods of emotional support. Aveyard (2014) suggests the use of themes as a method of summarising the literature. From the 5 papers, three themes emerged as relevant to the aims of the literature review (Appendix 3): Education, Mindfulness and Home Activity.

Education

Education is a theme running through all five studies with interventions including a number of different study designs addressing secondary prevention. The success of these interventions was assessed from a mixture of Quality of life and emotional outcomes (Appels et al., 2006; Furuya et al., 2015; Hagberth et al., 2008; Nyklicek et al., 2014; Shiloh et al., 2014).

Two studies identified their interventions as educational, one examined transcripts of focus groups to ascertain the outcome of a patient inspired programme to improve self-understanding. Hagberth et al. (2008) identified the approach to learning an important finding, indicating the group format offers an opportunity for emotional support. The group format offers a vehicle to address individual anxieties, reduced through listening to others and receiving reassurance that others share similar feelings. Furuya et al. (2015) appraised measures of perceived health status, self-efficacy and symptoms of anxiety and depression to explain the outcome of a programme combining written information and verbal persuasion. The study focus was to motivate self-care through persuasion relative to the theory of self-efficacy; however, the outcome measure for self-efficacy indicated the intervention did not have the intended effect and in the absence of the programme, self-efficacy improved slightly in both groups over time. The primary outcome measure of perceived health status indicates no significant difference by participants from pre to post intervention in both the mental and physical components. When analysing for measures of anxiety the results indicate a significant improvement and probably not due to chance, ($P = 0.04$). The authors confirm the intervention did offer improvement in relation to the symptoms of anxiety but not in relation to symptoms of depression. The results of the control group confirm anxiety increased slightly, therefore, strengthening the author’s findings, but indicate depression decreased in both groups regardless of the intervention.

Despite Hagberth et al. (2008) and Furuya et al. (2015) approaching learning and teaching from differing methods, initial findings suggest educational interventions may offer emotional support in relation to anxiety, however, the behavioural and psychological studies also include measures of anxiety and depression as an outcome (Appels et al., 2006; Nyklicek et al., 2014; Shiloh et al., 2014)

All assessment tools varied, therefore, the results cannot be directly compared, see Table A, for a summary of assessment tools. In analysing the results, depression improved in two interventions, one behavioural and one psychological (Appels et al., 2006; Nyklicek et al., 2014). The group format and relaxation activities offered by Appels et al*.* (2006) contributed to a statistically significant reduction in depression, (P = 0.03). The third intervention identified by the authors as a psychological intervention failed to improve depression (Shiloh et al., 2014). Psychological interventions generally aim to modify behaviour; and in view of the fact this study design delivered visual and restricted verbal information regarding the PCI procedure and coronary anatomy, it can be suggested the intervention is suited to support education regarding the process of CHD and therefore restricted in the ability to affect depression.

Anxiety improved in four interventions (Appels et al., 2006; Furuya et al., 2015; Nyklicek et al., 2014; Shiloh et al., 2014). One behavioural intervention had a significant effect on the reduction of anxiety in females (P = 0.01), with no effect in males (P = .37); the authors suggest the group discussions may be favourable to the female population (Appels et al., 2006). A fact confirmed by Hagberth et. al. (2008). One psychological intervention found anxiety improved only in those younger than 60 years of age (Nyklicek et al., 2014). Another psychological intervention found cardiac related anxiety improved specifically in relation to bodily sensations (Shiloh et al., 2014).

In order to ascertain whether it was, in fact, the interventions that improved anxiety, a comparison was drawn from the control groups. Furuya *et al.* (2015) confirmed anxiety increased over time in the control group (P = 0.04); however, an explanation offered is that the control population were recorded as less active, contained a higher number of smokers and confirmed to have an increased obesity, identified by the authors as comorbidity. Appels et. al. (2006) confirmed anxiety to be negatively affected by an existing comorbidity (P = 0.05), but in relation to the favourable findings in relation to females, failed to clarify the distribution of the comorbidities across the genders. The controls in another study resulted in cardiac anxiety to be higher than the intervention group at one month post PCI; however, in the absence of a comparative measure prior to the treatment and the intervention, it cannot be concluded whether the intervention contributed to the lower cardiac anxiety score in the study population. A further consideration is that the randomisation procedure may have resulted in the intervention group including a higher number of patients experiencing angiography for the first time; therefore, it may be suggested the study group were made up of first time PCI patients for whom the treatment may alleviate cardiac anxiety in the absence of the intervention, a fact which may suggest either sampling bias or reporting bias (Shiloh et al., 2014). In another psychological study results for anxiety and depression improved in both the intervention and the control groups, however, both groups received information, albeit by different modes of communication but in absence of a further control group receiving usual care, these results cannot be conclusive (Nyklicek et al., 2014).

QOL and HRQL are assessments tools which offer an indication of how an individual is coping with their disease and include a number of measures related to physical and psychological health including emotion. Two studies assessed these outcome measures pre and post interventions (Appels et al., 2006; Nyklicek et al., 2014). One study, a mindfulness-based stress reduction treatment, concluded the intervention to improve both psychological and social quality of life, with the physical dimension showing no differential effect between the groups (Nyklicek et al., 2014). Comparing the control group results to the intervention results, it appears both groups offered similar results from pre-treatment to post-treatment. This comparison may suggest there to be no superiority between the mindfulness-based group intervention when compared to the self-help group. This result may be due to the fact both groups received information, one group was considered the control but received written information as opposed to verbal, however, in the absence of a further control group, this suggestion cannot be confirmed.

Appels et al. (2006) assessed a series of small group discussions, facilitated by a counsellor. The results were not reported in relation to comparing the intervention to the control group but were presented in tabular form as two results, one for those patients who had comorbidity at baseline and the other for those with no comorbidity due to differences between the groups at baseline. The authors concluded that the 6-month long intervention improved HRQL in the longer term. The results confirm a significant improvement at 18 months (P = .05). However, in comparing the control results to the intervention, it would suggest HRQL improved in the absence of the intervention. One explanation may be explained by the fact the intervention was described by the authors as behavioural, indicating the behaviours needing to be addressed were those stimulated by stress, therefore, the small group discussions based on solutions and the relaxation exercises learned by the study population may not improve anything other than stress. Interestingly this study did not include measures for stress, instead measured hostility. The intervention did not result in a reduction of hostility. The mindfulness-based intervention shared the aim to reduce stress choosing a similar small group format to Appels et. al (2006). Alternatively, behaviour and stress reduction education was provided in one session by a certified clinical psychologist. The results indicate perceived stress decreased in both groups, but significantly more within the intervention group (Nyklicek et al., 2014). Both these interventions included similar settings, the group format, home exercises, engaging the study population in the learning process. However, Nyklicek et. al. (2014) communicated information by way of a tutor-led approach whereas Appels et. al. (2006) identified the tutor as a facilitator of group discussion actively involving the participants in the communication of information. In the absence of a further control group, it is difficult to assess whether the influence of the expert or the quality of the information had an impact on the outcome of stress. Hagberth et. al. (2008) suggests the influence of the tutor, or the expert, impacts upon the study group in reducing stress. The study group requested the opportunity to speak to an expert in order to receive specific information with regard to their fears of death. The study findings highlight the group fears benefited from the trust and reliability of the information received.

In summary, the control group comparisons of all four quantitative studies indicate in the absence of these interventions that an increase in anxiety is probable (Appels et al., 2006; Furuya et al., 2015; Nyklicek et al., 2014; Shiloh et al., 2014). The studies confirm educational information, regardless of whom or how it is presented, offer improvement in anxiety. However, it would appear information sharing by way of the group format is favourable to females whereas information received either in a written or visual format may offer more success for the male population.

With regard to depression, the group format, including individual involvement through practical activities, may suggest the greatest success. The results for HRQL and perceived stress are inconclusive and may be explained from addressing the control group information.

Mindfulness

The authors of one study concluded that a Mindfulness-Based Stress Reduction (MBSR) programme contributed to the significant effect in reducing symptoms of anxiety, depression and perceived stress in those under the age of 60 years (Nyklicek et al., 2014). In order to claim a significant effect, the sample size would have to be large enough to represent the population under study. In this case, the numbers of participants recruited to each arm of the study were less than the minimum number predicted by the power calculation.

With regard to the significant effect being found in those under the age of 60 years, the baseline characteristics confirm the mean age of the intervention group to be 55 years but do not confirm how many of the study population were under or over the age of 60 years. Therefore, it is difficult to confirm the strength of the results.

The exclusion criteria ensured all patients in this study were under the age of 70 years but did not detail why individuals over the age of 70 years were excluded.

The authors suggest mindfulness requires an open mind and indicate the study population over the age 60 years may have had difficulty in taking on new ideas to address their emotional wellbeing. An alternative suggestion may be found within the control group. Mindfulness requires the patient to practically participate in activities, the baseline information confirms 42% of the control group had comorbidity; it is unclear whether this fact may have had an effect on the results.

The results of the Mindfulness Inventory were not discussed in relation to the primary outcomes, but complicated by including analysis for co-variables to take account of baseline differences within the groups. The intervention group at baseline differed significantly in relation primary PCI, perceived stress and symptoms of anxiety and depression. The presentation of the results for psychological outcomes and quality of life take account of these differences, as well as co-variables for age, education level and comorbidity, making it difficult to ascertain the true significance of the effect in the intervention group.

In summary, the results of this study are in relation to a brief mindfulness programme shorter than the traditional MBSR and therefore cannot be generalised. The author's conclusions do not make this point clear.

Home Activity

Two papers required the study population to participate in a home activity (Appels et al., 2006; Nyklicek et al., 2014). One study used MBSR meditation activities to help reduce symptoms of stress, anxiety and depression (Nyklicek et al., 2014). These activities are referred to as mindful practices aiming to encourage awareness of bodily sensations, emotions, thoughts and feelings in relation to stress. All exercises were modified from the traditional MBSR exercises so as to ensure the safety of the study population during activity. Another study included home-based relaxation exercises aimed at improving exhaustion by way of coping with the stressors which contribute to exhaustion (Appels et al., 2006).

Both the MBSR and the relaxation exercises will require the development of skills in order to understand and learn before being able to practice them within the home. The mindful practices were taught by an expert of MBSR within three sessions (Nyklicek et al., 2014). The relaxation exercises were taught by a counsellor (Appels et al., 2006).

Both groups were asked to practice the activities at home. The participants of the mindful practices were requested to practice for 30 mins per day (Nyklicek et al., 2014). Appels et. al (2006) did not explain how home exercise was encouraged. In the absence of a control group, Nyklicek et. al (2014) offers a comparison group, the self-help group. This group did not receive support from either the group or the expert therapist but were provided with written instructions regarding the daily mindful practices.

Since both studies identified the relevance of the physical activities in relation to psychological outcomes, recording and follow up will identify the value of this home activity in relation to the outcome measures. Nyklicek et. al (2014) recorded minutes of home activity for both groups within a compliance form whereas Appels et. at. (2006) provided no method of capturing this activity. In the absence of this detail, it is difficult to know whether relaxation activity had an impact on the results.

Within the mindful practice, the results confirm both groups recorded minutes of home activity with the taught group recording an increased total time spent on home practice. After calculations for effect in relation to the psychological outcome measures the authors concluded this additional practice correlated significantly with a decrease in perceived stress (P = 0.03) and also contributed to an increase in psychological QOL. The correlations also suggest a decrease in anxiety (P = 0.001) in those under the age of 60 years.

Conclusions

The small number of papers identified within this review and the fact that none included a Scottish population suggests interventions aimed at emotional support for patient's post PCI remains an area requiring further study. In the absence of emotional support, the control group information indicates anxiety to increase. All interventions, including educational information, reduced anxiety, but only for patients without a co-morbidity or under the age of 60 years. The variety of study designs and outcome measures makes it unclear which component within these interventions contributed to the improvement in anxiety. The interventions offering education, by way of information sharing in a group format, may offer a greater success in supporting the emotions of a female patient population. Therefore, there is a need to identify which type of information is most effective in addressing emotional support for individuals with co-morbidity and those over the age of 60 years. There may also be a difference between what each gender needs in way of information regarding emotional support.

The inclusion of relaxation activities which take account of individual participation appears to have a significant effect on reducing perceived stress and may further enhance interventions aimed to reduce symptoms of anxiety. However, for individuals over the age of 60 years or those classified as having co-morbidity this type of activity may not be the most appropriate treatment. There is a need to better understand the barriers to emotional support and the alternative methods of emotional support for these particular sub groups of patients.

Despite the fact that RCT studies are considered to be at the top of the hierarchy of evidence when comparing the effectiveness of an intervention, the self-reporting questionnaire results assess the success of the intervention and do not communicate the patient's experiences or feelings regarding the most effective method of emotional support. The one study which did report patient views also assessed the programme's effectiveness at offering this emotional support. These studies do not identify how patients feel they obtain emotional support nor do they clarify whether the improvement in anxiety was due to the intervention itself or the individuals involved in the intervention.

The aim of the current study is:

Aim:

Understanding the lived experience of how CHD patients feel they obtain emotional support post PCI

Objectives:

- Explore patients emotions after Percutaneous Coronary Intervention
- Explore how age, gender, the presence of comorbidities and social circumstances affect emotions post PCI
- Understand participants' views about what type of information is most effective in improving emotions

Chapter 3

Study design and methodology

3.1 Introduction

This chapter will focus on the research aim and introduce the research method considered most suitable to address the objectives. The study design will be clarified, include a description of the population to be studied and an overview of the ethical considerations. A detailed description of the study process will include explanations of the sample strategies, the method of data collection and the data analysis.

3.2. Research questions

From the existing studies identified in the literature review, the researcher determined there is a need to understand the lived experience of how CHD patients feel they obtain emotional support post PCI. The existing research confirms emotions such as anxiety increase in the absence of emotional support but did not reveal the participants' views about what type of information is most effective in improving emotions. The researcher identified a gap within the literature requiring further exploration. The research aim is: Understand the lived experience of how CHD patients feel they obtain emotional support post PCI

: The research questions are as follows:

- What emotions are experienced by individuals diagnosed with CHD post PCI?
- How does age, gender, the presence of comorbidities and social circumstances affect emotions post PCI?
- What are the participant's views about the type of information most effective in improving emotions?

3.3. Research methods

The process of gaining new knowledge and developing a greater understanding of a subject is referred to as research (Ellis, 2010). Empirical research is the acquisition of new knowledge gained from evidence gathered from a subject either by direct or indirect observation (Moule & Goodman, 2009). Research aimed at understanding the study of human nature may obtain evidence directly by observing the behaviours of a subject or indirectly by observing information gained from the subject about their behaviours.

The process of empirical research can either be approached from a quantitative or qualitative study design. The quantitative approach refers to a method of research which collects and analyses information from numerical data (Ellis, 2010). One example of this method would be to collect numerical information from a subject within a study to provide a statistical analysis of whether one treatment or intervention is better than another. This offers a measure of what the human subject has experienced otherwise referred to as a phenomenon. According to literature, quantitative research is an approach which produces evidence that can be scientifically verified, referred to as a positivist approach to the study of phenomena (Moule & Goodman, 2009). Appendix 9 will offer a summary of quantitative research approaches.

The qualitative approach refers to a method of research which collects and analyses information gained from a subject by way of data collection methods such as interviews or group discussions (Padgett, 2012). One example of this approach is where evidence regarding a patient’s experience is captured from a face to face interview using questions and interpreted by the researcher in order to construct and reveal new meaning. Qualitative research enables the researcher to observe the commonalities within the data in order to develop concepts or theories, also referred to as inductive reasoning (Moule & Goodman, 2009). According to Ellis (2010), qualitative researchers aim to offer an interpretative approach to the study of human behaviour and language and in nursing, this approach may be used in order to explain a patient’s experience. Appendix 9 will offer a summary of qualitative research approaches.

To ensure the study follows a logical and systematic process a number of different qualitative methodologies such as grounded theory and phenomenology have been considered.

Grounded theory offers the researcher a logical process to develop theory from qualitative data (Ellis, 2010). This methodological approach has roots in sociology and explores human interactions (Moule & Goodman, 2009). The study population will generally be a homogeneous sample, all sharing the same experience. The data is collected within the subjects' own environment via interviews or observations. The continual analysis and coding of the data will generate themes which when categorised will reveal a theory (De Chesnay, 2015).

Phenomenology approaches are historically linked to philosophy and offer a process of gathering data to reveal the lived experience of a subject (Moule & Goodman, 2009). The data may be collected from a number of methods including in-depth interviews, diaries, conversations or written journals of emotions and feelings. The two main approaches are descriptive and interpretative phenomenology (De Chesnay, 2015).

The descriptive approach, founded by Edmund Husserl, requires the researcher to be neutral, recording his/her own thoughts and feelings separately from the data collected, referred to as 'bracketing' (Moule & Goodman, 2009). Thus the evidence is a description of the lived experience from the subject's point of view with findings being themed from the data itself. Whereas the interpretative approach, founded by Martin Heidegger, aims to understand the lived experience also referred to as Hermeneutics (De Chesnay, 2015) The researcher will engage with the process, continually exploring and analysing the data in an attempt to draw out new meanings (Moule & Goodman, 2009). This process will include reference to the researcher's previous experience in order to make sense of the phenomena (Ellis, 2010). The findings from the evidence will be interpretive and therefore open to others interpretation of the phenomena (Manen, 1990).

Within the interpretative theme and in keeping with historical roots, contemporary philosophers and psychologists offer step by step approaches to the methods of phenomenology research. Phenomenologists such as

Amendio Giorgi refer to descriptive phenomenology in their methods to reduce the narrative gained from collection methods into themes (Giorgi, 1975). This approach does not offer the researcher an opportunity to interpret the data. Whereas the interpretative approach offered by Max Van Manen (1990) extends the hermeneutic theory to examine the everyday experience of the individual. Manen (1990) focuses on the use of language to understand the human lifeworld, supporting a ‘pedagogical’ approach to comprehending the everyday practice. Van Manen’s hermeneutic phenomenology method is specific to the lived experience and relevant to answer the questions asked in this study.

3.4 Study Design

The interventions used in the studies referred to in chapter 2 failed to improve the emotion of anxiety in subjects who had comorbidity or were over the age of 60 years and in the absence of support the evidence confirms this emotion will increase. Therefore, there is a need to understand whether these sub groups of CHD patients post PCI obtain or even seek emotional support. In relation to obtaining this knowledge, a quantitative study approach to this problem would make it difficult to evidence the views or perceptions of the study population. Examples such as a survey design would not capture information about emotion whereas a qualitative approach offers discursive methods of data collection which communicate a deeper understanding of the lived experience rather than a broad superficial understanding.

Within the conclusions of chapter 2, it was identified that information to support the emotion of anxiety may differ dependent upon gender. In order to explore this objective, the subject’s views need to be heard in order to reveal the lived experience which will offer an understanding of how the two sexes gained emotional support and what type of support was most effective. Therefore, the qualitative data collection methods most suitable to this study will be those offered from phenomenology.

The study aim is to explore the individual human experience of how emotional support was obtained after they had received the treatment of PCI and the study seeks the participant’s views about what was the most effective information to improve emotions. In order to achieve this aim and answer the question, the participants will need to reflect back to the experience and describe a “pre-existing world”, reliving events with an awareness of emotion and explain their view with regard to what emotional support they felt was most effective at that time (Smith, Flowers, & Larkin, 2009). According to Smith et al. (2009), when an individual is required to reflect upon an experience or event in a previous time, and give their view, this is no longer a description; this is a participant interpretation of what has gone before. The descriptive branch of phenomenology would set aside or bracket off the participant opinion and retain the description of the event, thus the knowledge gained from participant reflection regarding beliefs around the most effective emotional support would not be captured (De Chesnay, 2015). The hermeneutical branch of phenomenology supports the participant views and opinions and, in addition, the interpretative phenomenology method encourages the researcher to examine the conversation and interpret the language expressed by the participant in order to understand the true meaning of the experience (Smith et al., 2009).

Over many years the researcher in the role of phase IV cardiac rehabilitation exercise instructor has observed how negative emotions impact upon participants’ decisions regarding their secondary prevention regime. For example, some individuals seem more aware of their bodily sensations and therefore are fearful of increasing their heart rate or experiencing sweating. During the first few weeks of exercise these fears and anxieties related to exercise usually subside with the support of the researcher but for others these emotions are overwhelming and they stop the exercise programme. Although this is just one example, there are much more and the programme the researcher works within does not have access to Psychology Services and offers no intervention aimed at supporting the emotions related to the recovery process. With this in mind, the researcher needs to explore and understand the lived experience post PCI and not describe the lived experience of the participant. The interpretive theme of phenomenology offers a continuum from the description thus the initial description offered by the study participant, may be progressed towards the revelation of meaning and offering a deeper understanding of these emotions. This study aims to ask the participant to reflect and recall their emotions and in the process of doing this both verbal and non-verbal methods of communication will be evident. The interpretative approach to phenomenology will capture this evidence and with the use of language, the feelings can be voiced to ensure the reader understands what it feels like to live the experience. The study will, therefore, follow the hermeneutic interpretative approach to phenomenology in order to reveal answers to address the research questions (De Chesnay, 2015; J. A. P. a. Smith, Flowers, & Larkin, 2009).

In order to understand the lived experience, the hermeneutic interpretative approach to the data needs to encourage the researcher the option to explore the narrative to reveal meaning . Max Van Manen (1990) offers a method of interpreting phenomena, yet retaining Heidegger's original understanding of the relationship between language and the lived experience. The 'pedagogical' method of Manen encourages the researcher to retain an open mind and seek to understand from mutual connection between the life-world and the language used by the participant; for example, language used to explain the lived time, lived space, lived body and lived other, referred to as life world existential (Manen, 1990). According to Smith et al. (2009) contemporary interpretative phenomenological analysis (IPA) and Van Manen's approach share many commonalities, not least hermeneutics and phenomenology. With IPA there is much flexibility when approaching the data, whereas, Manen's pedagogical approach provides detail to aid the researcher in making sense of the data and, in the case of this study, aids the researcher in drawing out the emotions experienced by the participants and understanding how the participants feel they obtained emotional support.

3.5 Study population and sample

A purposive sample technique will be used in this study to ensure the participants recruited all share the same experience (Smith et al., 2009). This technique will also ensure the study sample will represent both males and females across a wide age range and the researcher recruit's individuals who are further down the recovery journey and therefore able to reflect upon and share their lived experience of emotions post PCI treatment. According to Manen (1990) in order to be true to interpretative hermeneutic phenomenology an individual cannot effectively recall their lived experience whilst still living it. Therefore, this study population will be recruited within one year after they are discharged from the care of NHS staff or cardiac rehabilitation services and returned to their community.

It is usual for quantitative studies to recruit a large number of subjects in order that their findings may be generalised to the wider study population (Moule & Goodman, 2009). In qualitative hermeneutic phenomenology studies, the findings aim to provide a wealth of data which helps the reader understand what it feels like to live the experience of the subject, therefore, the researcher needs to spend sufficient time with each of the participants in order to achieve this aim (Ellis, 2010). Unlike quantitative studies, this understanding cannot be generalised but can help the reader achieve awareness and a greater depth of understanding of how it feels to live the experience. Therefore, this approach to collecting data will have implications for the sample size of a study. In order for the researcher to ensure the quality of the data collection and analysis is maintained the recommended sample size is between six to twenty participants (Ellis, 2010; Moule & Goodman, 2009). Although Smith et al. (2009) indicate the ideal study size for interpretative phenomenology to be between three and six participants.

3.5.1 Inclusion and Exclusion

To ensure the aims and objectives of the study are achieved the inclusion and exclusion criteria will be robust. The inclusion criteria will ensure the prospective study participants are suitable to be involved in the study and have the characteristics necessary to gain the best outcome from the qualitative data collection methods of interviewing (Manen, 1990). The exclusion criteria will reduce the ethical concerns of the study and ensure the safety of the participants (Moule & Goodman, 2009).

Inclusion

- **Individuals diagnosed with CHD who have been treated with PCI within the last twelve months**: Individuals re-vascularised with PCI, elective to manage angina symptoms and primary PCI for management of acute coronary symptoms (ACS), were both included with all other CHD manifestations such as congenital heart disease or heart failure being excluded

- **Individuals who have been discharged from the care of NHS or cardiac rehabilitation services and returned to their community:** Individuals who have either been discharged from the acute care of NHS post PCI or discharged from NHS Cardiac Rehab Services and returned to normal activities of daily living.
- **Individuals who are able to understand and speak English**: The qualitative method of data collection for this study requires the participant to understand the researcher and the researcher to understand the participant. The project time constraint of one year restricts time for translation of both the interview and the transcriptions. Translation of transcriptions may lose information, alter the meaning or bias the results.

Exclusion.

- **Individuals experiencing symptoms related to CHD or feeling unwell**: This evokes emotions specific to their current condition and inhibits the individual from reflecting upon previous emotions specific to the study.
- **Individuals diagnosed with cognitive impairment**: This may impair their ability to recognise or reflect upon emotion.
- **Individuals diagnosed with a psychological disorder**: The interview process could impact upon their mental wellbeing.

3.5.2 Recruitment of participants

The interpretative phenomenological approach requires the researcher to identify the ideal participants for whom the questions in this study will be meaningful (De Chesnay, 2015; Smith et al., 2009). The researcher is a qualified Phase IV instructor of the British Association for Cardiovascular Prevention and Rehabilitation BACPR (2012) supervising a gym based Phase IV cardiac rehabilitation programme. This programme is based in central Scotland and offers a group environment one evening per week where individuals diagnosed with CHD gain access to individualised exercise advice and general support to maintain lifestyle changes positively linked to risk factor modification. The programme is accessed by over seventy participants per year with the average time spent within the programme being ten weeks. The researcher has a good understanding of both the programme and the participants attending. The participants have been discharged from NHS Cardiac Rehab Services and referred to a local sports and leisure trust to be offered a place within the exercise-based cardiac rehabilitation classes. Permission to access this particular group was granted by the Leisure Trust (Appendix 6).

According to Manen (1990), it is important to ensure the sample recruited share similarities not merely confined to their diagnosis and treatment but also in the phenomenon. To explain this point, many participants within this programme share the experience of PCI, some as a primary treatment for ACS and others as an elective treatment for alleviation of angina symptoms. All participants are discharged from the acute care of NHS post PCI or NHS Cardiac Rehab Services and referred to attend the gym-based programme for a period of ten weeks. These individuals have therefore experienced a period of time whereby they have been living their everyday life and dealing with their own emotions in the knowledge of their diagnosis. A reflective period of time such as this not only offers an ideal opportunity for exploration but the ideal subjects for an interpretative hermeneutic phenomenology study. This group offer the ideal homogeneous sample of the population for which this study aims to recruit.

The literature review confirmed most studies to recruit mainly male participants with other studies recruiting all-female samples, in order to avoid over or under representation of one particular sex a purposive sample of participants will be recruited. A minimum of 25% of cardiac patients is female therefore 25% of the subjects will be female. This approach will ensure the composition of the study sample is able to address the research questions.

3.6 Ethical Considerations

The researcher has undertaken the research as part of a research degree and in order to gain access to this subset of the CHD post PCI population, it was necessary to gain ethical approval from Edinburgh Napier University. In addition, where research involves NHS patients, it is a requirement of the university to apply for NHS ethical approval. In accordance with the policies of Edinburgh Napier University the researcher gained approval from the Research Ethics Committee, a copy of the approval letter is attached (Appendix 10). NHS ethical approval was not required for this study owing to the fact that the participants were no longer NHS patients and discharged from the care of NHS cardiac rehabilitation services. The participants were paying customers of the leisure trust. A copy of the leisure trust permission to access customers is included (Appendix 6).

Potential participants were identified by the researcher from the referral form provided by the NHS Cardiac Rehab Services. This referral form is an approved document of the British Association for Cardiovascular Prevention and Rehabilitation (BACPR, 2012) and will provide details of any cognitive or psychological disorder. Prior to taking part in the study all subjects within the group were given a participant information sheet informing them about the study and inviting them to take part. This sheet also provides contact details of the independent advisor should they wish independent advice (Appendix 4). The participants will have one week, or more if they need it, to consider this. To ensure the study gained evidence only from those individuals wishing to take part in the study, participants recorded their willingness to share their experiences by completing and signing the informed consent sheet (Appendix 5).

Upon completion of the participant consent, a limited amount of personal information will be obtained. Personal information such as age, gender, the reason for PCI and whether there is an existing comorbidity will be required for participant commentary in order to address the research questions. At the start of each interview, participants will be reminded of their ability to decline or stop the interview at any point.

3.7 Methods of data collection

To examine phenomena related to an individual, data may be collected by way of observational methods either in a structured approach or a non-structured approach (Moule & Goodman, 2009). One example of a structured approach would be observing an individual’s behaviour through the use of a questionnaire. This example would encourage the researcher to observe the behaviour indirectly from data collected in a pre-validated tool. A non-structured approach to this example would encourage the researcher to directly observe the individual’s behaviour from watching the behaviour as it occurred naturally. This would require the researcher to see the participant in their natural setting whilst maintaining a safe distance so as to avoid influencing the participant and biasing the data (Smith et al., 2009). These methods of data collection limit the interaction between the participant and the researcher. The aim of this study is to seek the views of the participants regarding what type of information is most effective in improving emotions, therefore, the researcher will need to talk to and interact with the participant in order to gain in-depth data which can reveal phenomenon (De Chesnay, 2015). For this reason, interviewing the participant is the chosen method of data collection and most suited to the aim of this study.

The interpretative phenomenological approach necessitates interviews take an in-depth approach thus encouraging the participant to share their intimate experience (Smith et al., 2009). In order to reveal these innermost feelings without too many constraints, a person to person interview, rather than a group interview, will be sensitive to this discussion and permit the participant to talk and be listened to (Moule & Goodman, 2009). The interview may take either a structured, unstructured or semi-structured approach. This study is seeking to address a number of research questions and although the unstructured interview approach may encourage the participant to speak freely the data collected may not communicate the answers (Lincoln & Guba, 1985). Using a semi-structured approach rather than a structured approach to the questions within this interview will afford the opportunity for extended discussion whilst retaining the focus (Smith et al., 2009). The in-depth one to one interview using a semi-structured approach to questioning will encourage conversation (Manen, 1990). This will grant the participant the opportunity to express their views and feelings whilst also allowing the researcher the flexibility to listen and explore or probe further in order to gather data that may offer a deeper understanding of the phenomenon (Lincoln & Guba, 1985).

3.7.1 Interview Schedule

The researcher is inexperienced in the qualitative interviewing process, therefore, an interview schedule will ensure prior thought and planning is evidenced. The schedule supports both the research process and the participants involved in the study ensuring the environment and the questions have been considered with enough detail so as to safeguard the individuals and the quality approach to the data collection (Smith et al., 2009).

The interview schedule (see Appendix 7) contains 8 open-ended questions to encourage conversation relative to the research questions. The research questions were drawn from the identified gaps in the literature review within chapter 2. The schedule provides a semi-structured approach to the interview and retains the flexibility to include pre-prepared prompts or alter the sequence of the questions should the participant either find difficulty in discussing any feelings or emotions or should the focus of the conversation stray from the lived experience (Smith et al., 2009).

In keeping with the hermeneutic approach the opening question is designed to ignite the conversation affording the participant the opportunity for reflection; thereafter all questions prompt re-living the experience by way of recalling and exploring their thoughts, views and feelings (Manen, 1990). According to Smith et al. (2009), the opening question should be generalised to the research aim offering an opportunity to set the scene and support an atmosphere of safety and relaxation prior to provoking feelings or emotions.

The planned interviews took place in a private room on the premises of one of the local sport and leisure facility venues. According to Manen (1990), the venue should be familiar to the participant encouraging a relaxed non-threatening atmosphere. The participants already attend the local sport and leisure facility for their exercise programme and may, therefore, be familiar and relaxed within this location. A copy of the local sport and leisure facility permission to interview on their premises is attached (Appendix 11). The planned interview time was approximately 60 to 90 minutes (De Chesnay, 2015). This allowed sufficient time prior to the interview for the researcher to greet the participant and explain the process. At the finish, the researcher handed the debrief sheet (Appendix 8) to the participant and allowed sufficient time for them to read this. The researcher concluded the interview by thanking the participant for sharing their experience and asked if there were any further questions.

During the collection of data field notes were taken by the researcher. These notes were brief and include the researcher’s thoughts or observations of body language and non-verbal cues which were a support and a source of reflection during the data analysis process. According to Manen (1990) during the interview process, the participant may emphasise a particular point by way of their body language and expressions and without the field notes recording these observations the intensity of this experience may be lost in the narrative.

Interpretive phenomenology requires a word for word account of the interview in the language used by the participant (Smith et al., 2009). An audio tape recording was used to capture the oral data and provide a record of the conversations. This was retained for transcription and analysis and as evidence against bias or contamination. In accordance with the policies of Edinburgh Napier University the research data was stored in a password protected computer and the data storing devices such as audio recorders were retained in a locked cabinet. During transit between the local sport and leisure facility and the School of Nursing, Midwifery and Social Care all data was kept in the possession of the researcher and encryption software was used to enhance the data protection.

3.8 Validity and Reliability

According to Smith et al. (2009) within quantitative studies, validity and reliability are addressed within the data collection methods and evidenced from assessing the risk of bias within the tools used. Whereas the qualitative inquiry data collection methods are varied and specific to the phenomena, the tools used to collect evidence are in fact the participants thus challenging a standardised approach to validity and reliability. To establish the strength of this study in relation to validity and reliability, Lincoln and Guba (1985) recommend an alternative approach to ensuring the data analysis and study conclusions offer a true reflection of the data collected. The following criteria offered by Lincoln and Guba (1985) will be addressed:

Credibility: To ensure the researcher had verbatim transcripts of the participant’s words the researcher returned to the participant prior to the data analysis stage to gain feedback and confirmation that the transcripts were accurate and true to the participant’s experience. This process, referred to as member checking, offers objectivity and confidence to the reader that the study findings are believable (De Chesnay, 2015).

Dependability: In addition to member checking, the researcher had the transcript and initially interpreted themes examined and probed by the researcher’s supervisor. This is referred to as peer debriefing and offers independent verification as to the risk of bias within the data analysis process and the data findings (De Chesnay, 2015).

Confirmability: According to Lincoln and Guba (1985) regardless of diligence in creating an audit trail of the data collection and analysis process, the replication of an interpretative phenomenology study is difficult due to the fact that another researcher may interpret the same data with a different conclusion.   Despite this fact, an audit trail will offer evidence of increased objectivity and within this study, therefore, the researcher retained the audio recordings of the conversations and verbatim transcripts. The field notes from the observations and thoughts of the researcher throughout the interviews and during the analysis and thematic analysis process were recorded within an electronic diary.

Transferability: Unlike quantitative studies, the aim of an interpretive phenomenology study is not to offer a generalisation of the findings to all post PCI patients, however, by offering an audit trail, including member checking and peer debriefing this study can retain the ethos of the study approach yet offer reliability with regard to the lived experience of how this patient group feel they obtain emotional support.

3.9 Management of the Data

Prior to the audio data collection, consent forms and personal information were coded so as to retain anonymity. The numerical code assigned to each participant was logged within a word document and stored within the university password protected computer with access restricted to the researcher.

Upon completion of the audio data collection, the audio file was downloaded and word processed to form a written verbatim version of the transcript. The audio file was named with the participant identification number and stored along with the researcher’s field notes and the scanned signed consent form. The participant was also given a pseudonym by the researcher. This fictional name retains the anonymity of the participant whilst avoiding the narrative of lived experience being interrupted by the use of numbers. The transcript will be identified by the pseudonym and stored within the folder containing the audio file.

3.10 Data Analysis

The approach to the data analysis within interpretative phenomenology is not unconnected to the approach used in the data collection; there is no pre-set hypothesis, the researcher listens to the participant during the data collection and again during the data analysis. The components within each stage of the project are determined by the research question (Moule & Goodman, 2009). According to De Chesnay (2015), researchers may opt for computer assisted data analysis packages which synthesise the transcribed text into coded segments of offers a clear and transparent coding structure, however, this approach distances the researcher from the analysis process. In order to gain an insight into the lived world of the participant and to support the process of interpretation, the researcher must reflect upon the transcribed words many times and the use of a computer-assisted data analysis package may dilute this opportunity. The data analysis stage is the first act in the process of analysis but the third step in phenomenology research after the development of the question and the collecting the data (Manen, 1990).

3.10.1Reflection

Upon the conclusion of the interview, the researcher should take the time to reflect, taking into consideration both the verbal and non-verbal communication and capturing this reflection within electronic written notes. The audio file was transcribed as soon after the interview as possible in order to initiate the reflection process. According to Manen (1990), the reflection will start with an open mind, encouraging the researcher to relive the interview, listening to the audio recordings a number of times and reading the electronic field notes retained by the researcher after each interview. This process will encourage the data to be heard intact.

To an inexperienced researcher, the reflection stage would benefit from guidance in order to listen and observe the true “essence” of what the participant has described. Manen offers this guide and refers to the four fundamental “lifeworld existential” composed of lived space (spatiality), lived body (corporeality), lived time (temporality) and lived human relation or other (relationality or communality) (Manen, 1990). The lived space refers to the interaction between the spaces surrounding the individual, e.g., the home or the hospital and how it affects how the individual feels. The lived body refers to awareness of physical presence within the world and how the physical body makes the individual feel. The lived time refers to how the individual feels in their mind in relation to the past, present or future. The lived human relation or other refers to how the individual feels in relation to others.

When reflecting upon the shared experience of the participant these four existential will be considered. This will encourage the researcher to gain an insight into the lifeworld of the individual.

3.10.2 Methods of Data Analysis

Smith et al. (2009) confirm there to be many theories related to how data analysis might be approached. Moule et al. (2009) discuss a technique referred to as content analysis which offers a stepped approach to preparing the data for analysis and interpretation. Terms such as key words, codes and themes are applied to the reduction process. The lived experience shared by the participant is captured in the data collected narrative and the aim thereafter is to reduce this textual data in such a way as to unearth the meaning or meanings within experience (De Chesnay, 2015). Interpretative Phenomenology Analysis (IPA) offers a comprehensive qualitative approach to the data which will aid the researcher in making sense of how the participants feel they obtained emotional support (Manen, 1990; J. A. Smith & Osborn, 2003; J. A. P. a. Smith et al., 2009).

The ethos and logic offered by Max Van Manen (1990) afford the researcher the opportunity to interpret the data through his framework and use of language. He describes his perspective as a “pedagogical” approach to discovering meaning. In other words, the subject may be able to describe their experience after treatment but may not understand this experience and only by having their descriptions and silences analysed from out with will the embodied meaning be exposed. Manen (1990) offers a logical guide to support the researcher not merely in the analysis of the transcribed narrative but also in the learning process which will take place from reading and reducing the language and words spoken by the participants as well as taking account of the observations of the researcher. This framework will ensure the voice of the subject is shared and thereafter interpreted in order to reveal answers to address the research questions.

Organisation of the Data

Smith et.al. (2009) recommends a holistic approach to the study of the human experience and suggests avoiding mechanical approaches to the text when seeking out the meaning, instead recommending the transcript be observed as a whole and looking for common phrases. This is not dissimilar to one of the approaches of Manen (1990), who provides additional guidance to the “wholistic” reading of the text by way of encouraging the researcher to identify the overall meaning of the phenomenon, expressing this meaning through the formulation of a phrase. The second approach Manen recommends is the “selective reading approach”, encouraging the researcher to identifying statements which are essential to the phenomenon. The third approach to data analysis recommended by Manen (1990) is the “detailed reading approach”, whereby every sentence or a sentence cluster is observed in order to reveal meaning. In order to answer the research questions, the researcher will adopt the “detailed reading approach”, observing every sentence and look for the common phrases within the collected data. Manen (1990) provides the following guidance within the detailed approach to reducing the data:

- Read and reread every sentence or sentence cluster looking for elements and discoveries within the text
- Write notes and paragraphs to formulate thematic statements
- Draw out thematic descriptions

This will encourage the reading and rereading of the transcripts to allow the researcher to look and observe the repeated “elements”. The reference to elements rather than key words or codes is recommended by Manen in the search for “discoveries”. The elements represent both the participant’s descriptions and the interpretations within the narrative and should not be restricted to the “mechanical” application of key words or codes (Manen, 1990). The elements will be highlighted as discoveries within the text which provide insight into how it feels to live this experience. When reading and rereading the text, the researcher will draw out these discoveries, highlighting the common phrases from the participant’s stories thereafter gathering them into a separate column headed meaning statements (Appendix 15). These discoveries and the accompanying text will then be collated and analysed to form thematic statements. The thematic statements will be documented and thereafter an interpretation of the narrative description will be referred to as themes communicating meaning within the lived experience which Manen refers to as “structures” of meaning. This reduction process to developing themes will form the hermeneutic phenomenology analysis stage.

When comparing the data analysis approach of Manen (1990) to the traditional IPA approach, Manen provides an increased structure to reducing the data, and in addition, supports the researcher during the phenomenology reflection process by way of his four lifeworld existential. His approach helps determine between “incidental” themes and “essential” themes.

Phenomenology writing will follow the data analysis in order to present the thematic descriptions through the use of language. The hermeneutic circle is the theory of interpretation and understanding (Manen, 1990). In this study the data represents the participant’s pre-reflective understanding of the lived experience; however, after the IPA reduction of the narrative as a whole into individual parts, the reflected understanding of the lived experience thereafter is drawn from reference to these individual parts in relation to the whole. Therefore, the hermeneutic circle makes sense of the participant’s experience. The written word will represent and mediate to the meaning of the lived experience of the participant through the interpretation and synthesis of the data analysis.

Upon completion of the thematic analysis and to enhance the credibility, reliability and validity of coding, the transcripts will be shared with the participants and peer reviewed to check the same elements are identified and there is an agreement in the formation of common themes.

3.11 Chapter Summary

This chapter introduced the research aim and research questions. An overview of the study approaches has been discussed and the study design justified. The sampling techniques, study population and inclusion criteria have been explained along with the recruitment process and ethical considerations. The chapter concludes with a detailed overview of the approaches adopted for data collection and data analysis.

Chapter 4

The aim of this chapter is to provide an overview of the participant recruitment process, detail the sample characteristics, provide an overview of the data collection period including a summary of how the data was prepared and conclude with a review of the analysis and findings of the study. This chapter will also present an audit trail of the study to ensure the findings are a true reflection of the data collected.

4.1 Overview of Recruitment

Upon receipt of the approval letter from Edinburgh Napier University Research Ethics Committee (Appendix 10), seven participants were recruited by purposive sampling based on age, sex and whether PCI treatment had been completed on an elective basis for the management of stable angina or post-Myocardial Infarction (MI). Seven participants were either invited to attend the first week, current attendees or recent graduates of the Fife based phase IV exercise programme lead by the researcher in one venue of a local sport and leisure facility. These individuals were identified as meeting the inclusion criteria and given a participant information sheet and consent form at the end of their session and asked to take some time to think about whether they wished to participate or not. Upon receiving the consent forms of all seven participants, a convenient date and time for the interview were agreed between the participant and the researcher.

4.2 Details of participants recruited

A limited amount of personal information was obtained from the participants in order to be able to purposively sample. Details such as age, gender, and months since PCI, weeks attending cardiac rehabilitation sessions, the reason for treatment and whether there was an existing comorbidity were required for participant commentary in order to address the research questions. Each participant was also given a pseudonym by the researcher. This fictional name retains the anonymity of the participant whilst avoiding the narrative of the lived experience being interrupted by the use of numbers. A summary of the sample characteristics is provided in 4.2. Table A:

4.2.1 Table A. Summary of Sample Characteristics

Pseudonym	Age	Gender	Months since PCI	Weeks attending Cardiac Rehab	Reason for PCI	Comorbidity Present Y/N
James	58	Male	11	31	MI	Y
Peter	33	Male	9	12	MI	N
David	48	Male	5	0	MI	N
Sarah	46	Female	5	13	MI	N
Jane	62	Female	12	22	Elective	Y
Mark	48	Male	5	10	Elective	N
Frank	37	Male	4	10	MI	N

The sample included seven English-speaking adults ranging from 33 to 62 years of age, two female participants and two individuals who had co-morbidities, one with Type 2 diabetes diagnosed post PCI and the other diagnosed with cancer 18 months previous to the PCI treatment, but now in remission. Time since PCI treatment ranged from between four months to one year. Four participants were married, two were separating from their partners and one was single. All seven participants were in employment and had returned to work. According to a recent systematic review of exercise-based cardiac rehabilitation studies (Heran et al., 2011), of the 16 new trials studied, the mean age was 47.5 to 71.0 years and woman represented less than 15%, the mean age of the current sample is 47.4 years and females represent 29% of the sample, indicating the age group of this study is aligned with other studies and the study does include more females than the 'normal' PCI population. In relation to the presence of co-morbidities, although variable when reported, comorbidities in the current study represents 29% which is higher than those mentioned in the studies reviewed by Heran. In relation to employment and return to work, 100% of the current study population have returned to work. According to previous studies, although between 43% and 75% of post PCI participants return to work, 100% is not representative of the average post PCI population (Biering, Nielsen, Rasmussen, Niemann, & Hjollund, 2012;

Maznyczka, Howard, Banning, & Gershlick, 2016; Samkange-Zeeb, Altenhöner, Berg, & Schott, 2006).

4.3 Details of Data Collection

The semi-structured interviews were conducted in a small private room within one venue of a local sport and leisure facility. The room was warm and lighting adjusted to create a relaxed atmosphere. The interviews were scheduled at a time convenient to the participants and took place over a three week period. Although the planned time for the interview was between 60 and 90 minutes, the interviews were guided by the individuals themselves lasting between 50 and 80 minutes with no interruptions to the interview process experienced throughout the three weeks.

Prior to each interview, the researcher met the individual outside the room and once seated thanked the participant for their time. There followed a short period of general conversation between the participant and the researcher in order to establish a relaxed atmosphere.   Smith et al., (2009) suggest setting the scene in this way provides the ideal opportunity to build rapport and can increase the success of data collection process. During the introduction of the recorded interview the informed consent was reviewed along with the ethical considerations such as confidentiality, and anonymity, the participant was reminded of the right to decline or stop the interview if they wished to do so. All participants confirmed their permission and satisfaction to continue with the interview.

All seven interviews started with question one of the interview schedule encouraging the participant to talk. During the first two interviews, the interviewer took brief written notes however this was felt to distract the flow of the interview and thereafter the interviewer listened intently to the one-sided conversation thus allowing the participant to talk freely without interruptions. The interview schedule was used to ignite the conversation and retain the focus whilst the prompts and probes were used to encouraged extended discussion and explore areas where a deeper understanding of the experience could be offered. For example, where an emotion was expressed and the researcher felt the need to understand this feeling, the participant was invited to explain this experience further.

The interviewer sat at a slight angle to the participant with the microphone placed upon a table in between the interviewer and the participant.

The interviews were concluded once they came to a natural close or when the participant had answered all the questions within the interview schedule. The natural close can be explained as when no new information was being shared or information was being repeated (Moule & Goodman, 2009).

Upon completion of the interviews, the researcher thanked the participant for sharing their experience and invited the participant to read the debrief sheet (appendix 8). The researcher invited the participant to chat and ask questions.

The researcher kept field notes of each stage of the interview process including thoughts and observations of body language and non- verbal cues prior to and during the interview. These notes refer to the researcher’s views of the participants including examples of where participants appear nervous, emotional or where their facial expressions communicate a message which does not match their verbal language. These notes also contain the researcher’s feelings during periods when participant’s strong emotions become uncontrolled and overflowed (Appendix 12).

Brief reflections of the interview were written electronically during a quiet time in the interview room after the participant had departed (Appendix 13). These notes refer to the researcher’s thoughts and views of the interview technique and the success of the questions. The notes include reference to the researcher’s initial thoughts and interpretations of the shared experience including the role within both the interview process and the participant’s journey. For example, in one interview, the researcher reflects upon thoughts regarding stopping the interview due to the participant’s emotional reaction during answering the question and doubts whether there was sufficient time given to the participant for recovery.

4.4 Preparing the Data

According to Lincoln and Guba (1985), it is advantageous to attend to the data preparation soon after the interview has been completed. This will encourage the researcher to listen to the interview whilst it is still current within their mind. This is useful especially to the inexperienced researcher as it can help assess the effectiveness of the interview questions in relation to the aims of the study. This approach was adopted and at the end of each interview, the researcher downloaded the audio file. The audio file was listened to with the researcher feeling content in the knowledge that the interview questions were achieving the aim and no adjustments to the interview schedule were required.

In order to improve the validity of the study and follow the recommendations of Lincoln and Guba (1995), the seven printed transcripts were placed within sealed envelopes and handed to each of the participants for their perusal. In order to reduce the risk of bias and enhance credibility, the participants were invited to read their transcripts and confirm with a signature their satisfaction that these transcripts offered a true record of their words. Participants were also invited to chat to the researcher or add comments and additional information if they so wished but none took up this offer. One participant declined to read the transcript but signed it indicating the emotions and experience shared within the interview would cause distress. The researcher chatted with the participant and both agreed this decision was acceptable. The seven participant signatures on the last page of the transcripts were scanned and stored in the designated electronic folder.

4.5 Data Analysis

The study aims to explore the lived experience of how individuals diagnosed with CHD feel they obtain emotional support after they have undergone PCI and the qualitative research approach of interpretative phenomenology has been justified in the previous chapter as best placed to meet the aims of this study. The electronic transcripts were prepared for analysis using a layout where margins were left either side of the verbatim data thus allowing comments to be inserted (Moule & Goodman, 2009).

The Interpretative Phenomenology Analysis (IPA) approach provides guidelines to aid in the discovery of knowledge and the first stage of this process is to read the transcripts many times encouraging the researcher to explore and gain an awareness of the participant's experience (Smith & Osborn, 2004). Each transcript was read and re-read several times with the initial thoughts of the researcher being logged in electronic notes (appendix 14).

The next phase of IPA is to both observe the data and look for the common phrases. Both Smith et al. (2009) and Van Manen (1990) offer suggestions to help the researcher interpret the data with both referring to the importance of language in reducing the data. Smith draws upon a psychological approach to analysing the data suggesting this be a cognitive process to gaining knowledge of the participant’s experience. Whereas Manen’s philosophical approach refers the “things themselves” enabling the researcher to draw out meaning from the participant's words themselves otherwise referred to as epoche.

Smith and Osborne (2004) recommend the researcher focuses in on one of the transcripts which offer a ‘rich’ and interesting experience. Smith et al. (2009) recommend taking one transcript at a time and reading every line looking for the repeated elements. Following this recommendation, the transcripts were prepared into the middle of two margins (appendix 15). Each transcript was headed with the title of the research aim and the research questions were coded red, green and blue. These colour codes were not used during the process of thematic analysis but merely used by the researcher to show how the excerpts link to the questions. The reference to elements rather than key words or codes is recommended by Manen in the search for “discoveries (Manen 1990). The stories of the participants were observed and the repeated elements related to emotional responses were extracted from the transcript into the left-hand margin under the heading ‘meaning statements’ (see transcript example Appendix 15). These meaning statements were extracted from an inductive standpoint and were not influenced by the research questions. The inductive coding in the left-hand column is discoveries within the text which provide insight into how it feels to live this experience. These discoveries and the accompanying text were then analysed by the researcher to form higher level themes and are referred to as thematic formulations which were placed in the right-hand margin. The thematic formulations are commonly referred to as thematic statements (Smith & Osborn, 2004). This reduction process to developing the thematic statements formed the hermeneutic phenomenology analysis stage (Manen 1990). During this stage, the researcher felt it important to truly understand what it was like for the participants to live their experience and wished to honour the participants by ensuring their stories were genuinely communicated to the readers in the final written account. With this point in mind and the fact that the researcher was new to IPA the lifeworld existential framework presented by Manen (1990) was identified as fitting to help interpret the language and encourage a deeper understanding of the experience.

The participant's words were reflected from analysing their lived space (spatiality) to gain an understanding of what it was like to live in their world, for example, the hospital, their home, work and within the space offered by cardiac rehabilitation. The language used around the lived body (corporeality) for example the words used when discussing the PCI treatment, or when they talked to others about their diagnoses or their explanations when referring to exercise were evaluated to understand how they felt. The researcher analysed their lived time (temporality), for example in relation to words related to future mortality or pre PCI treatment. Their language around the lived other (relationality) was explored in order to appreciate how the participants felt in relation to others whether it was doctors, nurses, friends, family, work colleagues or other participants within the cardiac rehabilitation programme. This approach was invaluable to the process of developing the thematic formulations which were checked back to the transcripts to ensure the researcher's analysis was indeed linked to the participant’s words.

Once all seven transcripts were analysed and to ensure dependability the researcher sent the annotated transcripts to a supervisor for independent verification otherwise referred to as peer debriefing (Lincoln and Guba 1985). Thereafter all thematic formulations were gathered into a table as seen in Appendix 16 Thematic Analysis. From this table, a comparison of all formulations was completed to look for commonality and fifty-three statements were identified as sharing 8 meaningful common thematic headings. The common headings were then placed within a further table and the fifty-three statements were re-ordered and clustered under the representative subordinate themes. This process to form sub-themes is detailed within Appendix 16 and followed the recommendations of Smith and Osborne (2004). These 8 meaningful thematic headings formed the sub-themes of 3 overarching main themes which are deemed by the researcher as essential to the understanding the phenomena of how individuals diagnosed with CHD feel they obtain emotional support post PCI treatment.

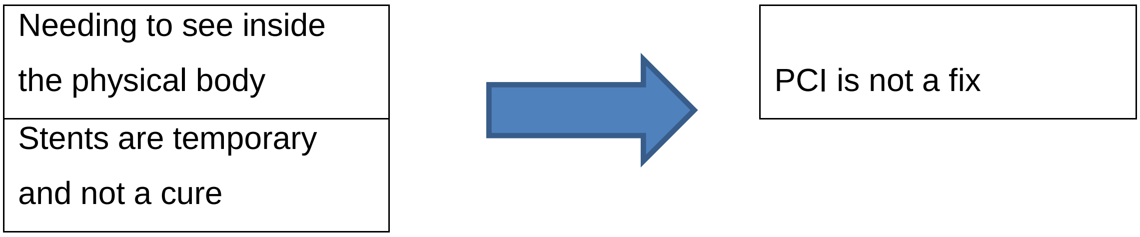
The main emergent themes are:

Sub Themes	**Overarching Themes**
Needing to see inside the physical body	**PCI is not a fix**
Stents are temporary and not a cure	
I am weak in the eyes of others	**Loss of Identity**
I have the disease of old age	
Feeling Lost	
I can test the boundaries of my physical body	**Cardiac Rehabilitation is a safety net**
Exercise gives me confidence to take back control	
Talking to others similar offers reassurance	

The subsequent headings within this chapter will highlight and thereafter emergent themes will be presented and their associated sub-themes. Quotes from the participant accounts will be used to discuss the sub-themes and Manen's lifeworld existential framework will be referred to throughout the discussions. Excerpts from the transcripts will be referenced according to the pseudonym with gender and age referred to in brackets.

4.5.1 PCI is not a fix

Conversations with all seven participants referred to their diagnosis of CHD and the experience of having PCI treatment. Some of the language used by the participants during the discussion of the PCI refers to this treatment as 'stents' or 'angioplasty'. The theme PCI is not a fix was developed from 2 sub-themes:



Needing to see inside the physical body

Five participants received this treatment after they had experienced myocardial infarction and two received this treatment to improve blood flow after they had experienced symptoms of breathlessness or chest tightness which was subsequently diagnosed as CHD. Throughout the participants' stories, there is frequent reference to needing reassurance regarding how well their heart is coping after this treatment. Their descriptions around future health results in a preoccupation with test results. James and David describe how they gain reassurance from blood pressure and temperature results as well as blood tests carried out by the cardiac nurse specialist during home visits:

> "….BP's been fine blood tests have been fine so I'm on the way to making this recovery…." (James: Male, 58)
>
> "…when she came in taking blood pressure, taking bloods, taking temperatures and all the rest of it still support and reassurance that obviously still living and still going to keep living …" (David: Male, 48)

The tests became a strategy for most participants to assess what was happening within their physical bodies and whether they were progressing in their journey to recovery. This strategy became a support to address negative emotions related to thoughts of another heart attack or in some cases death.

In order to understand these negative emotions and the reassurance they gained from the tests, Manen's lifeworld existential the "lived body" (Corporeality) guided the researcher to reflect upon the language used by the participants. The emotions of fear and anxiety were evident within the participant's stories, especially when describing their awareness of every twinge or pain within their body.

> "….I do occasionally, and they said this would happen, any time you feel anything in your chest you sort of not panic but I start thinking what's that mmm…a lot of the time when I leave here (cardiac rehabilitation) on a Wednesday I'm quite happy that I've not had anything, like I keep saying I've already said to you I don't have angina…every time I do any exercising or go for a walk or come here I'm quite pleased that when I leave there's nothing and I suppose I'm probably more optimistic about the future…" (Peter: Male, 33)

Peter made it clear that he is not experiencing angina symptoms but he is gaining relief from anxieties related to the physical sensations. He uses physical activity as a means of reassuring his thoughts related to the treatment and his fears related to the disease. For others gaining relief is more of a challenge. One description indicated that in the absence of further invasive tests the emotional support of using tests such as blood pressure and blood tests is a limited method of support:

> "…I would always love if they could put a wee kind of camera in and see how it's all going, if it's all working perfectly but since they can't do that I've just got to use all these blood tests that are being done just now and that should show up if there is any sort of problems at all." (James: Male 58)

For this participant, there is a need to seek reassurance from inside his body to support negative emotions such as fear arising from the physical sensations or worry and anxiety related to thoughts of future ill health. The opportunity to see inside the body can be achieved for some individuals during the PCI procedure. Two participants were invited by the specialist cardiologist to watch the PCI procedure on a monitor within the catheter laboratory. One participant declined and the other, Frank initially started watching but felt this heightened his feelings of fear and turned his attention to observing the face of the cardiologist for reassurance during the remainder of the procedure. Upon completion of the procedure, the specialist cardiologist explained still images of the diseased arteries before and after stents. This provoked initial shock at the realisation of what smoking had done.

> "…to think that you know I'd done myself that much damage..." (Frank: Male 37)

Stents are temporary and not a cure

From the descriptions related to the stents inserted within the coronary arteries the researcher deduced feelings of disappointment around the fact that the PCI treatment did not cure the disease. For some participants, this disappointment was exacerbated by the fact they were told some arteries were not treated and remained diseased. The language used to break this news confirmed future disease progression may only be controlled if contributing lifestyle issues were addressed.

> "When he (specialist cardiologist) came back out, he'd done the procedure and the consultant (specialist cardiologist) says, that's us put two stents in and we are going to have to keep an eye on a third artery which has had a slight bit of furring up however it's not, it's not at the stage where it needs a third stent in so we'll keep an eye on it." (Mark: Male 48)

> "You know he (specialist cardiologist) told me that the other two arteries had got a wee (little) bit of fattiness on it but he says that, that'll no (not) cause you any problems as long as you stop smoking and you, you know, you exercise..." (Frank: Male 37)

> "….. I'm no (not) exactly fixed because I mean they've only, they've only managed to sort out the two arteries so the one at the back of my heart is still blocked…" (Sarah: Female 46)

For a number of participants, it was apparent their focus on lifestyle issues was a means of coping with this news. The stopping smoking, exercising or losing weight helped them feel in control of the disease and thus offered hope for the future.

> "….the doctor (specialist cardiologist) came round and basically explained what had happened and what they'd done it was fairly, even with my lifestyle that it was fairly unusual for somebody my age to have one but if I make these changes then I should be fine. ...I've got a chance

> to lose some weight, get healthier and fitter and make the changes that I need to make to make sure that I may get past 40…” (Peter: Male 33)

All participants understood they still have the disease and do not view the stents as a cure, however, for some the stents were considered unreliable. For these participants there is a fear the disease can progress and this results in fear related to the future. From the following extracts of two female participants their fears surrounding negative thoughts of the stents were generated from information received either from the experiences of others or in Sarah’s case from the specialist cardiologist:

> “There’s some kind of sense is the stent working properly or has something happened to it and I think that comes from my husband’s experience of having stents done and then about nine months later the stents had not worked properly so he had to have them redone, so there’s that thought in the back of your head is this happening? “(Jane: Female 62)

> “he (specialist cardiologist) said as long as the stents last a year we should be alright…….I didnae (didn’t) want to go through it if it lasts a year I wanted the triple bypass. I know that sounds daft but I didnae (didn’t) want to go through the year of waiting or doing anything like that, I just wanted the triple bypass and get it done…” (Sarah: Female 46)

Both these stories view the stents as unreliable and in the case of Sarah, the PCI is viewed as a temporary fix with the triple bypass seen as a permanent solution. Thus in Sarah’s thoughts, the PCI is a second rate treatment and the option which the specialist cardiologist decided was best for her. This view was not merely confined to female participants; it was also seen in male stories.

> “.. I take the medication, do what I’m told to do and just fingers crossed you know that my stents last a year” (Sarah: Female 46)

> “I think at my age 57 coming on 58 your thinking how eh, how long have I got now so that’s why we’re thinking about doing a will…” (Andrew: Male 58)

The disappointment of still having the disease and the emotion of fear related to their future health are strongly expressed within their stories and these emotions appear to be unsupported for these participants leaving them feeling helpless and vulnerable to thoughts of early mortality. Four participants explained there to be no emotional support post diagnosis, indicating the information received, whether written or verbal, was procedural and related to the timelines to recovery, medication and lifestyle management and did not include information to address their fears:

> “Well just mm people to talk to, more information about how this can affect you know, thought processes and how you think, how you manage when those thoughts come when your fears come…” (Jane: Female 62)

Jane is indicating verbal information to be her preferred source for emotional support but for some written information received within “The Heart Manual” was described as a logical source of information:

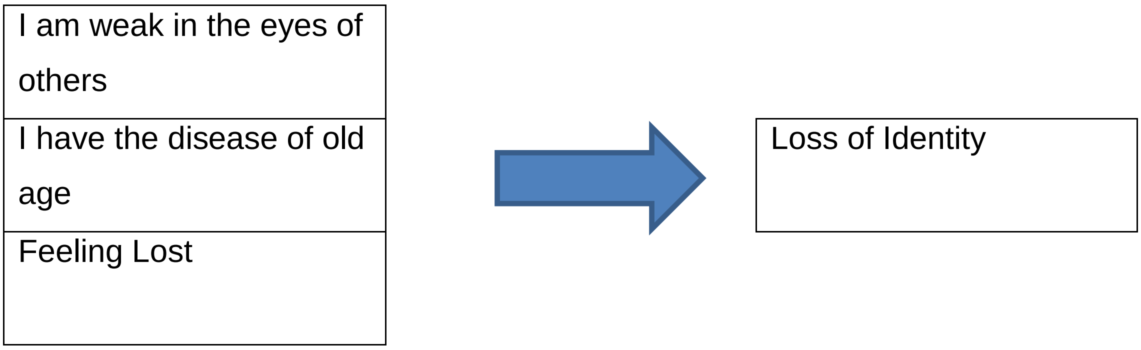
> “… it kind of explained things in laymen’s terms, obviously doctors talk about and give you all these great big huge words and stuff whereas the book kind of brought it back down to earth” (David: Male 48)

Theme Summary: PCI is not a fix:

- Fear of disease progression is alleviated by results of physical tests such as blood pressure, blood tests and heart rate for many participants.
- Lifestyle focus helps achieve feelings of control over disease progression for some.
- For a few participants, emotional support is not found in relation to fear of mortality.

4.5.2 Loss of Identity

According to Manen (1990) the lived other (relationality) refers to how an individual may feel in the presence of others or how they may view others. The theme loss of identity was interpreted from the following sub-themes:



I am weak in the eyes of others

The participants’ stories describe their current relationships with family, friends and work colleagues as being altered from pre-diagnosis and treatment. Expressions of their previous identity refer to themselves as “fit” or “healthy” but when comparing this to post PCI, their language around identity is not discussed in relation to their own thoughts but refers to the thoughts of what they believe other people are thinking of them. This leads them to believe they are not who they used to be and are now being defined by their disease and viewed as weak or vulnerable. The following stories refer to their thoughts and feelings:

> “…I dinnae (don’t) want people to look at me and go that’s a shame something like that I dinnae (didn’t) want to be treated like an invalid.” (Sarah: Female 46)
>
> “…I’m no (not) gonnae (going to) be an invalid because of this you know I’m no (not) gonnae (going to) let it … take me backwards you know….” (Frank: Male 37)
>
> “…I didnae (didn’t) want to tell people because I didnae (didn’t) want their sympathy do you know what I mean I didnae (didn’t) want people to feel sorry for me…” (Frank: Male 37)
>
> “…everybody round about … trying to hold you back.” (David: Male 48)

These quotes refer to the participants’ thoughts of themselves as an invalid and are not the thoughts of others. This thinking produces feelings of vulnerability linked to a perceived helplessness in the eyes of others and highlights the unease felt by the participants. The feeling of being “held back” is reinforced by the actions of others. A number of participants discussed the phased return into the workplace as a welcomed return to normality but for two males and one female, the restricted duties reinforced the feelings of weakness. Work colleagues inadvertently strengthened these feelings by way of their offers of help and assistance with daily living tasks. This results in the participants describing themselves as frustrated at having their physical ability devalued.

In an attempt to show control of these emotions one participant describes how his improved fitness helps him feel stronger and overcome his identity frustrations.

> "..I thought, in the early days after the stents I would say that I'm no (not) gonnae (going to) be able to,…….do this anymore, I'm no (not) going to be able to do that anymore you know, mm but as I've got fitter and now that I'm back at work I'm no (not) gonnae (going to) ……let myself be pigeon-holed into well he's had a heart attack…" (Mark: Male 48)

Mark is comparing his negative thoughts to his positive thoughts but in doing this he still makes reference to being weak in the eyes of others within the words, "let myself be pigeon-holed into well he's had a heart attack". Whereas another participant admits to deviant behaviour in an attempt to control his emotions:

> "…very frustrating but to be fair I did do stuff (exercise) that I wasn't allowed to..." (David: Male 48)

David is describing doing large amounts of exercise knowingly against professional advice. For a number of participants, the focus on exercise was a way of reclaiming self-identity in the eyes of others. This is one method of supporting the emotions related to frustration but for others adopting avoidance strategies such as humour helps retain their identity and protect themselves from the reaction of others:

> "Even some of my closest friends that I've known since I was like four years old I still felt quite embarrassed going and saying Oh I had a heart attack at the weekend. Mmm so I suppose trying to laugh about it …. was a way to not make it more light-hearted but make it a bit easier for me to deliver…." (Peter: Male 33)

The use of humour is a coping mechanism to suppress emotions for a few participants.

I have the disease of old age

According to the accounts of the participants, there is frequent reference to the lived time (temporality) in relation to the language around future life being shortened. Regardless of age, gender or reason for PCI, a number of participants refer to themselves as having the disease of old age:

> “...I feel quite ashamed of saying it because in my line of work you associate my condition with somebody older…” (Sarah: Female 46)
>
> “Just probably embarrassed, I mean when you think of heart attacks you think of older people, no older people, you think of like maybe people in their 50s, 60s, 70s I’m just ashamed of the fact that I knew I had to do something but I didn’t do anything…” (Peter: Male 33)
>
> “…. I’m a reasonably young guy coming out of a cardiac care unit and it's just, you know, it’s just and I don’t know if other people judge you or not for it but I was judging myself for it and I suppose it goes back to being ashamed of myself and embarrassed….” (Peter: Male 33)
>
> “Obviously people that I knew with heart attacks were in their eighties and obviously older and obviously it's only now that I found out it affects people my kind of age and younger ….” (David: Male 48)
>
> “...the people that I seen in the …(Hospital) were a good 20 or 30 years older than me, you know, and you just felt like Christ I can’t believe I’m in the same bracket now…” (Frank: Male 37)
>
> “so there’s that kind of sense of I’ve got the disease of older age sooner than I would have perhaps liked.” (Jane: Female 62)

These stories refer to discomfort around their diagnosis and the perception that heart disease is related to older age. This suggests there is a stigma associated with having CHD. The stigma of CHD appears to be related to the participant’s thoughts of once being fit and healthy, compared to their thoughts of who they are now in relation to the disease. Despite a previous diagnosis of cancer, the following excerpt confirms the stigma of CHD is related to a perception of an inevitable decline in the physical body whereas cancer has the opportunity of remission:

> “...I think that recedes a little bit as each year goes past and you get past another, another year’s survival but even with the heart condition I think there’s that sense of mm what will this actually mean, will this mean that I will be slowed down younger, I think there’s a kind of sense of, mm you know there’s that bit of how healthy you are, how long you remain healthy before you get into old age.” (Jane: Female 62)

The stigma of the disease leads the participants to feel embarrassed and ashamed when telling others of their condition. These feelings lead to guilt related to their past actions and a worry related to their future health.

> “…I don’t know if other people judge you or not for it but I was judging myself for it and I suppose it goes back to being ashamed of myself and embarrassed about basically, I just kept thinking these poor people are having to deal with this for me because I have not done what I should have done.” (Peter: Male 33)

> “Normally people you hear of having a heart attack die and I’m still living. Which is strange.” (David: Male 48)

> “I thought Christ am I that sick? You know I didnae want to be that sick you know, but obviously, you know I wasn’t as sick as them you know but I was still in the same boat I suppose, you know as these boys...” (Frank: Male 37)

The participant stories do not just reveal the stigma within their own thoughts but also reveal this stigma to be present within society. The words “you are so young to have…” reinforce the disease to be perceived as the disease of older age. The stigma is continually being reinforced in the words of others, including professionals when comparing their chronological age against the accepted social norms of the disease.

> "…. the doctor (specialist cardiologist) came round and basically explained what had happened and what they'd done it was fairly, even with my lifestyle that it was fairly unusual for somebody my age to have one…" (Peter: Male 33)

Feeling Lost

As previously mentioned a few participants discussed guilt around their previous actions but from one story when this self-guilt is combined with feeling judged by others the participant feels the need to protect herself:

> "Then people started blaming my weight you know obviously, of course, she's had a heart attack, because you know, because she's overweight, that was the first thing, and then I had to start and tell people… eh no my weight doesn't help but I've got a genetic condition..." (Sarah: Female 46)

In adopting this coping mechanism of protection, the participant describes feelings of isolation which results in social withdrawal:

> "I kind of went into myself a wee (little) bit and didnae (didn't), I didnae (didn't) go out…" (Sarah: Female 46)

This action leads to the participant avoiding situations where she is likely to be judged and in the absence of social support her emotions escalate. This results in every part of the participant's lifeworld being experienced as stressful and in attempting to take control her thoughts turn to taking drastic action:

> "…in the last six or seven months it's been everything, I mean I've been thinking about everything. I've been thinking about changing my job because of stress, my husband and I are separated, aye (yes) we're separated eh I've been going through giving everything up, selling the house, just going for an easier life, trying to everything, I have been re-evaluating everything…" (Sarah: Female 46)

The words of Sarah are also expressed with a spontaneous outburst of tears and interpreted as an experience of significant emotional distress. When Sarah is asked how she is coping with this drastic action, she answers

> “Not very well… just getting to grips with what has actually happened… getting things into my head you know… because I dinnae (don’t) want people to think that I cannae (can’t) cope so at my work if it gets too busy and I get stressed, it's actually it’s the weirdest thing because I can do all the stuff at the gym and all the rest of it and I’m fine but when it gets into a stressful situation that’s when it seems to be, it’s no (not) the exertion it’s the stress...” (Sarah: Female 46)

The description of wanting to change all components of life may suggest a loss in the ability to cope and results in symptoms of stress.

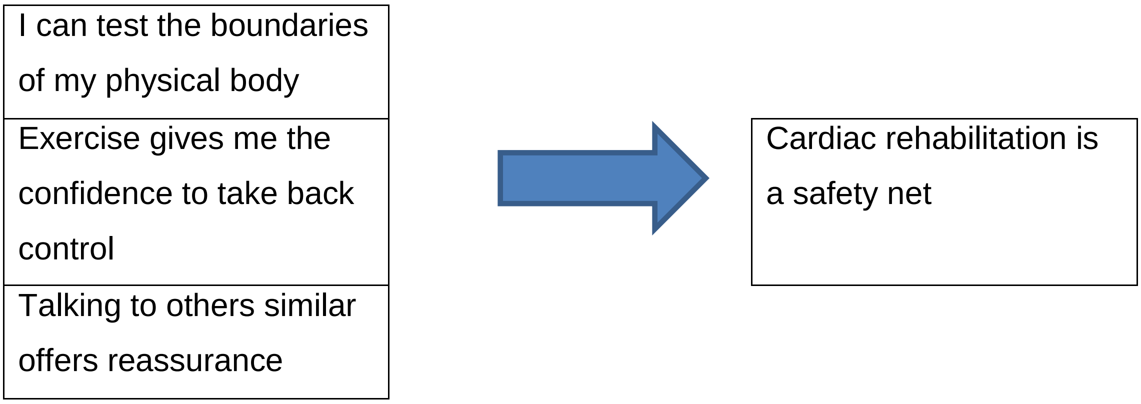
Theme summary: Loss of Identity

- Frustrations of feeling weak in the eyes of others were supported for some by return to work and focusing on exercise
- Stigma of old age disease leads to embarrassment and guilt for individuals but appears to be a perception held by society
- When frustrations, guilt and embarrassment are combined and not supported feelings of helplessness result

4.5.3 Cardiac Rehabilitation is a safety net

Cardiac rehabilitation was referred to by all participants. Three participants referred to the circuit-based exercise programme delivered by NHS staff within the setting of the hospital and six participants referred to the phase IV gym-based exercise programme delivered by the researcher within a community-based leisure centre.

This theme describes how the participants within this study gained emotional support to address the experiences shared in the previous two themes of PCI is not a fix and loss of Identity.



I can test the boundaries of my physical body

Five of the participants describe cardiac rehabilitation as a place where they felt comfortable to assess their concerns with regard to their physical bodies. Using the lifeworld existential of the lived body, lived other and lived space to analyse their descriptions of cardiac rehabilitation their language indicates the participants felt comfortable and confident in the both the environment and in the staff's ability to support them whilst increasing the demands of exercise.

> "Gave me confidence, confidence to push myself a bit…" (James: Male 58)

> "…the exercise classes have been extremely useful for me because they mm allowed me to test out or check out how far I could go with doing things and know that there are people around that will notice or go oh no, we need to get that rechecked or we need to do something about that so there is a kind of safety element there of being able to try out more exercise and increase that exercise which then gives you the sense of everything's working alright…." (Jane: Female 62)

> "…. the first few weeks I came here and then and every week since especially when the level goes up a wee bit that feels quite good as well and it sort of reaffirms that you are going to be okay and you can manage this and nothing's happened to you yet." (Peter: Male 33)

> "…when I started coming to the gym I knew that mm that I could do these things and I wasnae (wasn't) going to drop down dead…" (Sarah: Female 46)

The stories highlight the emotions of fear and anxiety is present in relation to both the thought and the physical feeling of increasing the demands on their heart. The participants spoke of feeling reassured by seeing their heart rate responses in exercise not producing any negative symptoms. Their words reveal the depth of trust they have in the cardiac rehabilitation staff's ability to help them overcome these fears and anxiety. They talk of gaining confidence in being able to challenge their own boundaries which help to reduce their negative thoughts in relation to their condition or the mistrust in the PCI. These words indicate they were holding themselves back from physical exertion. However, the use of words such as "nothing's happened to you just yet" indicates that for some their anxious thoughts around future health still remain.

> "…you've got back up in case something goes wrong, I don't know what's in her bag if it's any wee (little)... but at least if she knows that something's going on then you've got someone there who is kind of trained to spot certain signs and they'll know, they'll know whether to call an ambulance or not – just really a comfort blanket…" (James: Male 58)

The contents of "the bag" are an automated defibrillator which sits within a corner of the room. The words "in case something goes wrong" and "comfort blanket" describe James as being reassured by this environment but anxieties still remain unsupported around fear of mortality. Other participants talk of cardiac rehabilitation as giving them hopes for the future.

> "….so every time I do any exercising or go for a walk or come here I'm quite pleased that when I leave there's nothing and I suppose I'm probably more optimistic about the future…" (Peter: Male 33)

> "...I think just giving you reassurance and on the exercise bikes, machines stuff and then seeing the results, taking your pulse and obviously heart still going, still working so there is light at the end of the tunnel shall we say when walking, exercising, swimming its building it up and starting to feel better again." (David: Male 48)

Their descriptions of the physical body compare the future with the past thus indicating their negative emotions are being supported by the cardiac rehabilitation staff, environment and the activities.

Exercise gives me the confidence to take back control

The exercise component of cardiac rehabilitation is discussed within all participants' stories. Their descriptions refer to the structure of the exercise itself, for example, the warm up or the cardiovascular component, including language which refers to the content of an exercise session, for example, the activity of cycling or the activity of lifting weights. Two participants refer to the experience of exercise as a learning process gaining the ability to contextualise the information into daily living activities.

> "…I suppose I've gained that understanding of being in that zone of knowing how much to do so keeping that there and in actually getting me moving again, actually doing it, it helps, because then the more you are doing it the more you realise you can do it. And therefore when you realise that well actually if I can do ten minutes on the treadmill or however, whatever it is that I am doing then yes I can walk up this flight of stairs, and no I don't have to take the lift to go up there, you know, so that feeds, that feeds into outside because you start to generalise that ability…" (Jane: Female 62)

> "I was still kind of moving slowly and we went to the exercise class I must have been only in it on one week or two weeks and even that gave me a help because it showed me that I could still move my arms and swing my legs and do small kind of exercises and stretches etc., and that helped me as well a lot just doing that small class it gave me – I said yes you are, you are getting better you can do weights you can do this, you can do that so that in itself helped me…" (James: Male 58)

These descriptions enable the researcher to understand how exercise information taught during cardiac rehabilitation sessions is received by the participant and thereafter employed. The participant's words describe this information to have been received and employed in lifestyle change strategies, understanding the benefits of exercise and the use of exercise within stress reduction and confidence building.

> “More importantly it’s over an hour’s worth of good physical workout that I know my whole body’s getting the benefit of …” (Mark: Male 48)

> “I mean I’m not saying I go out for a walk and every day I’m thinking about things that are bothering me but when something is troubling me or I need to think about something I find it’s a bit easier. I’m out of the house I’m away from distractions…” (Peter: Male 33)

> “…I feel as if I’m doing stuff that I would never ever have done – never ever done before in my life.” (James: Male 58)

The participant’s stories talk of exercise in relation to information being received from their own experiential learning. The information results in positive thoughts and emotions encouraging personal feelings of empowerment which help overcome the real life problems such as fatigue resulting from a previous cancer diagnosis and the restrictions placed upon their physical body by their own negative thoughts.

> “I think more optimistic I think if you had asked me this a year ago you would have got a very different picture because I think as my energy levels have come back up again and I’m much more enthusiastic about doing things than I was and much less fatigued so that’s made a huge, huge difference and I think doing more exercise and increasing the exercise increased the amount of energy that I have so, therefore, there is that sense of actually it’s okay. It’s better than it was” (Jane: Female 62).

> “…it was proof that I could push myself further than I thought I could, I mean it’s easy to go for a walk eh go out for a couple of hours and go for a walk and come back after a bit exercise but to have somebody there like yourself who maybe will say next week maybe we’ll put that up a wee (little) bit whereas I might be tempted just to think that’s hard enough …” (Peter: Male 33)

Within these stories, there is a reference to increasing of exercise intensity. This suggests the support around a gradual increase of fitness has provided not just improved physical benefits but also improved confidence and motivation by way of the realisation that they can, in fact, work harder. These participants are reflecting upon their exercise experience and demonstrating they have gained knowledge from this support. Frank and Mark refer to exercise as a “lifeline” indicating there is hope for the future. For the participants of this study, exercise offers a learning process to cope with and overcome negative emotions related to both physical and mental limitations.

Talking to others similar offers reassurance

Participants discuss talking with others throughout their stories. Talking to others offers both positive and negative support. For some in the early day's post treatment, they refer to avoidance techniques in talking to others and indicate it reinforces their embarrassment and guilt around being diagnosed with CHD. Others refer to telling their story to work colleagues and friends as supportive, feeling positive from their perception of helping others understand the physical warning signs of the disease. With regard to the participant's accounts of talking with others who are similar in the cardiac rehabilitation sessions, there is a difference in the language used. Their language refers to comparing themselves with others in order to feel similar. In the following excerpt, Peter feels reassured that he is similar to others in the cardiac rehab class and this helps him feel normal thereby relieving his guilt around the disease.

> “…. just that you weren’t the only one if that makes any sense mm and it helped me probably helped me open a bit about it and it’s probably partly why I don’t feel so ashamed of myself anymore.” (Peter: Male 33)

Peter uses this social comparison to evaluate his progress in a positive way whereas in the following excerpt from David, he is comparing himself to evaluate his CHD diagnosis in a negative way.

> “…speaking with people and people who have went through it, obviously I had quite a massive heart attack and I had to go in and get all four

> arteries done whereas other people I've spoke to have had either just been on drugs or had one stent or two stents…" (David: Male 48)

This social comparison is not beneficial and leads to confirmation of his fears.

> "…that made me feel like that I was very close to death then, obviously if I've had a lot more done than what other people …" (David: Male 48)

The majority of participants did not report these negative comparisons and reported gaining positive reassurance from talking to similar others within cardiac rehab.

> "...I suppose being around people who have the same, maybe not exactly the same thing happen to them, some people had bypasses and what not but I would imagine everybody's had the same thoughts at some point when you've been told what's going to happen or what's happened to them and yet everybody's come out the other side and all seem quite happy and optimistic for the future…." (Peter: Male 33)

The shared experience reduces feelings of isolation and reduces feelings of anxiety.

Theme Summary: Cardiac Rehabilitation is a safety net

- Cardiac Rehabilitation staff and environment provide support for fears and anxiety around perceived limitation of heart health and level of exertion
- Exercise offers a learning process to cope with and overcome negative emotions related to both physical and mental limitations.
- Talking to similar others reinforces normality and reduces feelings of social isolation

4.6 Summary of findings

This study has identified the following findings from each of the overarching themes, PCI is not a fix, Loss of identity and Cardiac Rehab is a safety net:

- Fear of disease progression is alleviated by results of physical tests such as blood pressure, blood tests and heart rate for many participants

- Lifestyle focus helps achieve feelings of control over disease progression for some
- For a few participants, emotional support is not found in relation to fear of mortality
- Frustrations of feeling weak in the eyes of others were supported for some by return to work and focusing on exercise
- Stigma of old age disease leads to embarrassment and guilt for individuals but appears to be a perception held by society
- When frustrations, guilt and embarrassment are combined with unsupported feelings of helplessness the result for one participant is social isolation.
- Cardiac rehabilitation staff and environment provide support for fears and anxiety around perceived limitation of heart health and level of exertion
- Exercise offers a learning process to cope with and overcome negative emotions related to both physical and mental limitations.
- Talking to similar others reinforces normality and reduces feelings of social isolation

4.7 Chapter Summary

This chapter has provided an overview of study recruitment including details of the sample characteristics. The collection and preparation of the data have been discussed and data analysis includes reference to how the researcher established trustworthiness in relation to developing themes from the transcripts. The findings are presented under sub-themes and include quotes from the participants. The chapter concludes with a summary of the findings from the overarching themes.

Chapter 5

In this chapter, the results of the research will be discussed in relation to the study questions. Each of the questions will be discussed separately and the findings related to existing literature in order to reinforce the significance of this study. In order to explain the findings of this study, one theoretical model, Leventhal's self-regulatory model of illness perceptions, will be discussed and thereafter referred to throughout the answering of each question.

5.1 Introduction

The study aim is to understand the lived experience of how CHD patients feel they obtain emotional support post PCI and the study questions are as follows:

- Explore participant's emotions after percutaneous coronary intervention
- Explore how age, gender, the presence of comorbidities and social circumstances affect emotions post PCI
- Understand participant's views about what type of information is most effective in improving emotions

The findings from the current study were presented within three overarching themes:

- PCI is not a fix
- Loss of Identity
- Cardiac Rehabilitation is a safety net

5.1.2 Theoretical Frameworks

In order to explain the findings of this study and understand the participants' responses, theoretical frameworks were explored but the one that aligned most closely with the findings of this study was the self-regulation model (Becker et al., 1977; Conway, 2015; Horwood, Williams, & Mandic, 2015) The self-regulation model also known as the illness perception or common sense model, offers a framework to examine an individual's thoughts in relation to their illness and the subsequent coping behaviours including reference to the influence of emotions (Leventhal, Diefenbach, & Leventhal, 1992). This model suggests that upon receiving news of an illness diagnosis, the individual will be motivated to find a way of coping with the news or the symptoms in order to regain normality. There are three stages to this model:

Interpretation – the individual will make sense of, and assign meaning to, the illness diagnosis by way of assessing the symptoms, consequences and social messages.

Coping – the individual will take action and adopt a coping strategy, for example, talking to others, avoidance, seeking medical advice etc.

Appraisal – the individual will assess their coping strategy as either successful, and continue, or unsuccessful, and be motivated to search for an alternative strategy.

This model takes account of the individual's cognitive and emotional reactions to the illness diagnosis, referred to as the illness perceptions and has been successful in explaining illness beliefs and the subsequent coping responses of individual's diagnosis with CHD (Byrne, Walsh, & Murphy, 2005; Lau-Walker, 2007). The individual's illness perceptions are central to this model (Leventhal et al., 2011).

The findings of this study provide an insight into the emotions experienced by the participants and share how age, gender, comorbidities and social circumstances affect emotions. In order to understand these findings and the findings related to the most effective information in improving these emotions, the self-regulation model of illness perceptions will be used to interpret the participant responses and referred to through the discussion.

5.2 Discussion

The findings of this qualitative study provide an insight into the emotions felt by this population post PCI. Each of the study questions will be discussed in relation to the findings within the themes, PCI is not a fix, Loss of Identity and Cardiac Rehabilitation is a safety net. The participants were between four months and twelve months' post PCI at the time of this study.

5.2.1 Study Question 1

Explore the participant's emotions after percutaneous coronary intervention

All participants reported a mixture of both positive and negative emotions in the immediate post-treatment period with some stories confirming negative emotions remain and even increase over the longer term. The participant's stories disclose prominent emotions of shock, fear, relief, worry, disappointment, frustration, embarrassment, guilt, anxiety and depression with some of these emotions being spontaneously expressed during the interview conversations.

Shock is presented in many studies, not merely confined to a diagnosis of CHD or the treatment of PCI, and explained as an emotion experienced within the immediate recovery period of an unexpected diagnosis. The participants in this study express shock similar to the participants of other qualitative studies and is related to the initial diagnosis of CHD and not in relation to the PCI treatment (Keaton and Pierce, 2000; Peterson et al., 2010). Words such as "stunned" or "surprised" are used to describe the emotional impact of how they felt upon receiving this news;

> "…I was quite shocked when I first heard…" (James: Male 58)
>
> "I was a bit stunned because although I think, I thought there might be something, I hoped that there wasn't" (Jane: Female 62)

From the analysis, emotions surface in relation to two domains; emotions experienced from thoughts and feelings related to themselves and their physical body and emotions experienced from thoughts and feelings in relation to others. According to Leventhal's self-regulatory model of illness perceptions (Leventhal et al., 1992), an individual's coping behaviour will be influenced by their illness belief. In other words, if an individual interprets their diagnosis of CHD as a threat, either due to physical experience or their understanding of the illness from information received within society, the subsequent emotions, such as shock or fear, will impact upon the way in which they cope thereafter.

Emotions in relation to the physical body

Emotions related to the physical body are found to be predominantly within the overarching theme of PCI is not a fix. All participants understood the stents were not a cure for the CHD and most appreciated their role in changing behaviours to reduce risks associated with disease progression.

> “You know he (specialist cardiologist) told me that the other two arteries had got a wee (little) bit of fattiness on it but he says that, that’ll no (not) cause you any problems as long as you stop smoking and you, you know, you exercise...” (Frank: Male 37).

For the majority the knowledge of still having CHD and for a minority feeling unable to halt the disease resulted in the emotions of fear, anxiety and disappointment. Fear is in relation to thoughts of early mortality, a finding shared in two qualitative phenomenology studies with sample sizes ranging from five to fifteen post PCI and MI participants, suggesting the emotion is experienced in relation to the diagnosis of CHD and not merely confined to participants post PCI treatment (Hasankhani et al., 2014; Keaton and Pierce, 2000).

Anxiety and disappointment are prominent in relation to participants who discuss an awareness of physical sensations within their own body and mistrusting the PCI treatment. These emotions were present in stories of individuals as long as eleven months after the treatment.

> “There’s some kind of sense is the stent working properly or has something happened to it and I think that comes from my husband’s experience of having stents done and then about nine months later the stents had not worked properly so he had to have them redone, so there’s that thought in the back of your head is this happening? “(Jane: Female 62).

The time lapse since treatment did not alleviate the anxiety and for a minority, resulted in a hyper-awareness of physical feelings despite patients rationalising these feelings as unrelated to the signs and symptoms of CHD. Quantitative studies, (Furuya et al., 2015; Nyklicek et al., 2014) have confirmed anxiety to rise in the post PCI population and in one study of 117 study participants of mixed gender, anxiety increased to a level requiring intervention at 6-8 months' post treatment (Astin et al., 2005).

The understanding that the PCI has merely relieved the symptoms of the disease combined with uncertainty about the treatment, results in a fixation with tests such as blood tests, blood pressure and heart rate regardless of gender or age.

> "…I would always love if they could put a wee kind of camera in and see how it's all going, if it's all working perfectly but since they can't do that I've just got to use all these blood tests that are being done just now and that should show up if there is any sort of problems at all." (James: Male 58)

> "…when she (nurse) came in taking blood pressure, taking bloods, taking temperatures and all the rest of it still support and reassurance that obviously still living and still going to keep living …" (David: Male, 48)

The need to seek reassurance that the stents are working effectively is a strategy for all participants in this study except one male. This participant has a number of friends and immediate family members who have received stents and he believes these individuals are coping well. He trusts the stents and perceives the triple bypass as the "worst case scenario"; and is therefore relieved that he had the PCI treatment rather than the invasive treatment associated with coronary artery bypass surgery. According to Leventhal's illness perceptions theory, this individual does not interpret the PCI treatment as a threat due to the social messages surrounding him. This is contrary to the thoughts of the majority, and for one female participant, the social messages related to the PCI treatment is interpreted as being a problem, offering a temporary solution to the disease of CHD, whereas the thoughts related to the triple bypass emphasise that this treatment would be perceived as the ideal solution.

> "he (specialist cardiologist) said as long as the stents last a year we should be alright.……. I didnae (didn't) want to go through it if it lasts a year I wanted the triple bypass." (Sarah: Female 46)

The fixation with test results is interpreted as a coping strategy to help address the emotions related to the mistrust of the PCI treatment. However, in the absence of complete reassurance, the anxiety related to whether the stents are working will continue to rise. A qualitative study carried out by Higgins et al (2000) of eleven patients post elective PCI confirmed anxiety to be an issue related to ‘uncertainty over future health’. The findings of the literature review in chapter 2 confirm that in the absence of support, anxiety will continue to rise, leading to increased risks for disease progression (Appels et al., 2006; Furuya et al., 2015; Hagberth et al., 2008; Nyklicek et al., 2014; Shiloh et al., 2014).

Emotions in relation to others

The emotions experienced from their thoughts and feelings in relation to how others view their diagnosis leads to the majority of participants explaining frustration, embarrassment and guilt.

> “…. I’m a reasonably young guy coming out of a cardiac care unit and it's just, you know, it’s just and I don’t know if other people judge you or not for it but I was judging myself for it and I suppose it goes back to being ashamed of myself and embarrassed….” (Peter: Male 33)

These emotions are found within the overarching theme of Loss of Identity. Frustration is experienced in relation to thoughts of a previous self, interpreted as being strong. For some, the recovery period generates physical limitations, such as haematoma or feelings of fatigue, resulting in both the health professionals and the participants’ social support network offering assistance. The participants understand why they are being restricted; however, the assistance offered by others contributes to feelings of frustration and is perceived by some as a restraint from achieving normality.

> “…everybody round about and their trying to hold you back whereas mm I actually felt better once I started getting out and going back to work and doing stuff instead of sitting in the house...” (David: Male 48)

There is a dominant theme of needing to reclaim identity and unburden themselves from feelings of restricted living resulting in risk associated action, two participants returned to work earlier than advised and one individual admitted to exercising out with the safe recommendations. According to

Leventhal, these risk associated actions are interpreted as means of coping in order to avoid the feelings of weakness (Leventhal et al., 1992). The feelings and emotions associated with a loss of identity are consistent with other qualitative studies. A similar phenomenology study of the lived experience of a purposive sample of five males confirms the CHD diagnosis to contribute to a loss of control of self, resulting in previous activities and future plans being halted (Keaton & Pierce, 2000). Nymark et al. (2014) confirm the findings of a qualitative descriptive study of interviews with ten men and four women post-MI and report the participants to experience fear related to losing their healthy identity.

To the best of our knowledge, this risk taking action, to cope with the emotions linked to loss of identity within a post PCI population, is not shared in the literature. This finding is contradictory to the recommended risk reduction advice. According to SIGN (2016), risk reduction information should be shared with patients upon discharge, follow-up and within the cardiac rehabilitation setting. The participant stories confirm receiving this information but knowingly going against the advice. Risk-taking behaviour in relation to serious health conditions has been largely focused on public health messages rather than individual behaviours (Ammouri, Neuberger, Mrayyan, & Hamaideh, 2011; Farrugia & Fraser, 2016). Other studies have indicated risk taking behaviour to be linked with masculinity (Mahalik, Burns, & Syzdek, 2007). A qualitative study of 16 purposively recruited male participants, aged 53 years to 79 years diagnosed with CHD and Type 2 diabetes from Dale et al. (2015) explored risk behaviours in relation to masculinity and attendance at cardiac rehabilitation and found the social and material demands of the men's life can influence the uptake of expert advice and reduce their efforts to adhere to risk reduction information. This study does not aim to generalise the findings but in order to compare the research to the evidence, this study did find the risk taking actions related to the male participants.

5.2.2 Study Question 2

Explore how age, gender, the presence of comorbidities and social circumstances affect emotions post PCI

How age affects emotions post PCI

Age is prominent within all stories. The emotions of embarrassment and guilt are found within the sub-themes of “I have the disease of old age” and “feeling lost”.

> “Just probably embarrassed, I mean when you think of heart attacks you think of older people, no older people, you think of like maybe people in their 50s, 60s, 70s I’m just ashamed of the fact that I knew I had to do something but I didn’t do anything…” (Peter: Male 33)

Embarrassment was found in the stories of both the primary and elective PCI participants and does not appear to be related to the treatment, more so, to the diagnosis of CHD. The belief that CHD affects individuals much older than themselves leads to the emotional experience of embarrassment and perceiving themselves as too young to have CHD. During the initial recovery period, the embarrassment leads to feelings of guilt related to the belief that their past actions have contributed to the diagnosis of CHD. The embarrassment and age-related findings are shared within a qualitative study by Nymark et al. (2014) who found participants within a mixed gender sample (n=15), aged 39 years to 86 years, felt they were too young to have a heart attack and experienced guilt and embarrassment in relation to their diagnosis, believing this diagnosis to indicate they had not maintained a previously healthy lifestyle.

A prominent finding of this study is the majority of participants used lifestyle modification as a means of coping with their illness beliefs and the emotion of guilt. For some, the focus on lifestyle modification offered a means to accept the diagnosis and control the emotions of embarrassment and shame. This finding is supported by a qualitative study of a purposive sample of 45 mixed gender post PCI participants, aged 34 to 74 years of age (Gulanick et al., 1998). Gulanick confirms lifestyle modification to be viewed as a means of controlling the disease. Interestingly those participants who didn’t focus on lifestyle change were unconvinced this action would have an effect on the disease progression. The study discussion indicated lifestyle change is a support for the emotions related to past actions but not a support for emotions related to the risks of future mortality. Gulanick et al. (1998) did not confirm whether age influenced views of lifestyle modification. Within the current study, the participant’s chronological age made no difference in relation to fear of early mortality, however, for those participants under the age of 50 years, there is evidence of time feeling precious and believing adherence to lifestyle change will help them enjoy this time. For two participants, a male aged 58 and a female aged 62, there is a feeling that time is running out and worries around living until retirement dominate their thoughts of the future.

> “I think if you had asked me this a year ago you would have got a very different picture because I think as my energy levels have come back up again and I’m much more enthusiastic about doing things than I was and much less fatigued so that’s made a huge, huge difference and I think doing more exercise and increasing the exercise increased the amount of energy that I have so therefore there is that sense of actually it’s okay. It’s better than it was” (Jane: Female 62).

According to the illness perceptions theory, lifestyle modification is a coping strategy appraised by most as an effective control for emotions experienced as a result of illness beliefs related to age and disease progression but not in relation to the PCI treatment.

How social circumstances affects emotions post PCI

In relation to social circumstances, one participant was single and living with dependent children, and two participants reported separating from partners since their diagnoses. In a mixed methods study, including participants post PCI treatment, the results of quantitative measures for Health Related Quality of Life (HRQoL) were analysed against qualitative findings of participants one year after diagnosed with CHD (Lukkarinen, 2005). The findings confirm that participants, who had marital difficulties, experienced increased problems with emotional reactions and in addition, those aged between 34-54 years of age, who felt depressed reported feeling socially isolated. This study concurred with the findings of Lukkarinen (2005) and would add, for those individuals experiencing separation or living alone and feeling a lack of support from others, the negative emotions of stress were found.

> “…. well since I had, because it’s been since October, in the last six or seven months it’s been everything, I mean I’ve been thinking about

> everything. I've been thinking about changing my job because of stress, my husband and I are separated, aye (yes) we're separated eh I've been going through giving everything up, selling the house, just going for an easier life, trying to do everything, I have been re-evaluating everything…" (Sarah: Female 46)

Sarah has been previously mentioned as not trusting the stents and these thoughts indicate she is not coping and is unable to problem solves her emotion. Previous studies have found females to experience a lack of emotional support more so than males (Boutin-Foster & Charlson, 2007; Lukkarinen, 2005). This study supports these findings, however, for this female participant, the feelings of social isolation and stress leads to an increased awareness of physical symptoms perceived to be related to angina. A worrying point was during this period of time when the participant was feeling both psychological and physical symptoms; the patient perceived that the relationship with her GP had broken down, leaving the individual feeling lost, helpless and unable to form effective coping strategies to deal with such negative conditions. The current study cannot confirm whether the feeling of isolation and stress is the result of the social circumstances, however, this study can confirm these emotions were not found in stories of those participants who were married.

How gender affects emotions post PCI

Gender has been discussed previously in relation to the risk-taking behaviours seen within the younger males and in relation to social isolation and feelings of stress in relation to marital status. Other than these two findings, gender did not appear to influence emotions in this study.

How comorbidities affect emotions post PCI

Within this study the presence of comorbidities complicates emotions, leading to increased anxiety, in relation to thoughts of restricted living. The additional medical treatment and physical symptoms, for example, the treatment side effects of fatigue and weight gain from a cancer diagnosis, results in feelings of frustration and hopelessness in relation to risk reduction strategies.

> "So you're trying hard to get the weight off because of your heart and the other medication is kind of going in the other direction and putting it back

> on again so it’s really difficult because I’d taken off about a stone and then put on about just over half a stone…… absolutely horrible” (Jane: Female 62)

The physical effort to improve lifestyle results is a perceived struggle to achieve such recommendations. Large-scale longitudinal studies related to public health and including participants with a diagnosis of CHD, confirm from quantitative measures that individuals who perceive life as a struggle or as stressful are at increased risk of future disease progression (Grewal, Gravely-Witte, Stewart, & Grace, 2011; Renzaho et al., 2014; Wagner et al., 2012). Within the current study, two participants describe stress and worry in relation to their future health and both discuss future retirement as a period of uncertainty. A systematic review of 61 studies looking at the effect of worry upon CHD patients suggests worry be associated with the increased incidence of CHD (Tully, Cosh, & Baune, 2013). This literature would suggest if the negative emotions are not addressed these individuals are at an increased risk of further CHD events. Of the two study participants, one individual had a previous diagnosis of cancer followed by a period of remission before receiving the PCI treatment as an elective procedure, the other individual received a diagnosis of Diabetes type 2 within two months of the primary PCI treatment post-MI. These individuals are of similar age. The individual diagnosed with cancer recalls skills learned during cancer rehabilitation with regard to mindfulness practice to help cope with the negative emotions. Whereas the individual diagnosed with Diabetes type 2 describes a fixation with diagnostic test results. These differing coping strategies offer varying solutions to the negative emotions of anxiety, worry and stress. The ‘fixation strategy’ is a short-term solution for anxiety leading to actions which contradict the cardiac rehabilitation objective of developing independent skills to take control of secondary prevention (BACPR 2012). The individual may appraise the fixation strategy as successful resulting in a continued dependency upon health professionals to provide future reassurance by way of test results. This study can add additional weight to the suggestion of dependency on health professionals from the information in Table 4.2, weeks attending cardiac rehabilitation; this particular individual had attended for 31 weeks. This is triple the traditional attendance figure for cardiac rehabilitation of 10 weeks. Comparing this to the mindfulness practice, a number of studies confirm cancer patients to experience improved emotional outcomes from mindfulness (Johns et al., 2016; Schellekens et al., 2016); however, the literature review within the current study confirms this practice was not successful in reducing anxiety for individuals with comorbidities and diagnosed with CHD. The weekly attendance figure of 22 weeks may add weight to this finding, indicating this individual to have appraised the mindfulness strategy as not working and reappraised cardiac rehabilitation as a successful coping strategy and therefore continues to attend. The findings suggest the presence of co-morbidities means the emotions of anxiety, worry and stress are challenging to support within the traditional 10-week cardiac rehabilitation setting and the information received is not sufficient to reduce negative emotions.

5.2.3 Study Question 3

Understand participant's views about what type of information is most effective in improving emotions

Information from health care professionals

SIGN (2016) recommend individuals post PCI treatment understand their diagnosis in order to avoid the stress related to escalating negative emotions such as fear, anxiety and depression. Emotional support is explained as the source of reassurance which helps a patient cope with the psychological effect of their illness (Schaefer, Coyne, & Lazarus, 1981). Examples of emotional support include talking to others or reading information. In studies related to cancer, emotional support has been referred to as any support which helps an individual make sense of their fears and anxieties related to their illness (Slevin et al., 1996). The SIGN guidelines advocate the cardiac rehabilitation pathway as a vehicle to provide such support.

The cardiac rehabilitation environment is viewed in this study as an educational environment and place of safety in which to explore both perceived and actual limitations. The British Association for Cardiovascular Prevention and Rehabilitation (BACPR, 2012) explain cardiac rehabilitation to provide an environment which promotes physical, mental and social support so as to encourage individuals to learn independent skills to address health behaviour change. The behavioural focus of cardiac rehabilitation is reinforced within the findings of the current study. For some participants the knowledge gained from written information such as heart rate, test results and charted exercise progress, reassures the emotions of fear and anxiety related to the effectiveness of the PCI treatment and for others offers a strategy to cope with the understanding that the PCI treatment has provided symptomatic relief, but has not cured the disease progression.

The advice within the SIGN guidelines would suggest negative emotions be reduced when an individual has sufficient information about their condition. However, this study found the participants to differentiate between informational support and emotional support. Four individuals explained there to be no emotional support post diagnosis merely “procedural information” or “written information” adding “no-one spoke to me”. These findings challenge the recommended pathway of care for this population and indicate there is a need for additional support to be included specifically targeting emotions. The interpretation of the lived experience would suggest talking about their emotions to be the desired support.

> “Well just mm people to talk to, more information about how this can affect you know, thought processes and how you think, how you manage when those thoughts come when your fears come…” (Jane: Female 62)

The cardiac rehabilitation pathway offers opportunities for health professionals to talk with patients and this study confirms these discussions to be beneficial.

> “…the nurse that came in, the sort of community nurse, she was brilliant as well you know she was you know phoning me asking me if I was alright and … answering any questions...” (Frank: Male 37)

The discussions with the health professionals were confirmed to provide instructional support regarding medication, addressing expectations and timelines to recovery and reinforcing information related to lifestyle management. This information is perceived as a support to reduce the stress related to the physical recovery. The emotions such as fear and anxiety related to the distrust of the PCI and their lack of control to halt the disease progression are not supported.

> “I think I’ve been very aware that the programme here is quite mm it’s geared towards the exercise and stuff more than towards the psychological aspect of managing it. (Jane: Female 62)

Both male and female participants indicated there to be no emotional support. A previous quantitative study by Astin et al. (2005), did not find attendance at cardiac rehabilitation to reduce anxiety.

For three individuals the information related to timelines, medication and lifestyle management were received from a written manual. “The Heart Manual”, described by the participants of this study and other studies as containing useful information in a logical format and in language which is non-technical (Clark, Kelly, & Deighan, 2011). The written information was deemed more useful to three male participants than the discussions with health professionals.

> “… it kind of explained things in laymen’s terms, obviously doctors talk about and give you all these great big huge words and stuff whereas the book kind of brought it back down to earth” (David: Male 48)

Interestingly, the three males describing written information as more beneficial than verbal information are the three participants that are mentioned previously as engaged in risk taking actions which contradicted the risk reduction advice provided by health professionals. A narrative review by Timmins (2005) discusses the difficulty in identifying the information needs of patients with ACS, highlighting the nurse’s role in educating and supporting the patient in lifestyle modification may conflict with the patients’ individual information needs during their recovery (Timmins, 2005). A narrative literature review of illness perceptions being a barrier to cardiac rehabilitation by Conway (2015) highlights the need to first understand where the individual is in relation to their acceptance of their illness prior to establishing the order of risk reduction advice (Conway, 2015).

Information from family, friends and others similar

Some participants sought emotional support from their families; however, this was not found to be a dominant support for emotions in this study but predominantly a support for the behavioural aspects of the recovery process, for example encouraging lifestyle change of increasing physical activity, weight loss and improving healthy eating.

Talking to others similar to themselves within the cardiac rehabilitation setting is deemed helpful by a few participants. The one participant who declined the offer of cardiac rehabilitation found talking to others similar to himself a source for social comparison from which he perceived his condition to be more life-threatening. For the majority of this study, the verbal discussions with others similar to themselves, offer reassurance related to both the physical recovery process and in relation to the acceptance of their diagnosis. The emotions of shame, guilt and embarrassment related to the CHD diagnosis are discussed in relation to social expectations and are positively supported and reduced from discussions with others whom they view as similar to themselves.

> “…you weren’t the only one if that makes any sense mm and it helped me probably helped me open a bit about it and it’s probably partly why I don’t feel so ashamed of myself anymore and embarrassed to talk about it. For I have seen people that I have met 10 seconds ago come up to me and say so what happened to you this is what happened to me… I had a bypass or I had two stents put in this is what I do in my free time to get some more exercise all that kind of stuff and I suppose when you see people talking about it and you are part of it, it helps you to sort of open up about it yourself.” (Peter: Male 33)

These social interactions reassure the individual they are not alone in their experience and are interpreted as a learning opportunity from which to evaluate themselves against others in order to cope and move forward from the thoughts and feelings associated with the diagnosis of CHD. This study found talking to others similar to themselves within the group format of cardiac rehabilitation to be a positive emotional support for social recovery within the male subjects but not the female subjects. This gender specific finding is contradictory to the findings of the literature review within this study which suggested the group format of information sharing offer a greater success in supporting the emotions of females (Furuya et al., 2015; Hagberth et al., 2008). However, due to the small number of females sampled within this study, this finding cannot be generalised.

The verbal information discussed within this study suggests for some males talking supports the emotions of guilt, embarrassment and shame.

5.3 Chapter Summary

This chapter has discussed the findings of this study in relation to the three research questions. The discussion highlights the main findings and compares these to the theory of Leventhal's Self-Regulation Model of illness perception (Leventhal et al., 1992), and existing qualitative and quantitative research related to the post PCI population and other long-term conditions. The discussion explores the participants' emotions post PCI treatment in relation to two domains; emotions related to the physical body and emotions in relation to others. The effect of age, gender, social circumstances and the presence of comorbidities is discussed in relation to how these elements impact upon emotions and the participant's views of what information is effective in improving emotions, is discussed in relation to information received from health professionals and information received from others. The unique findings from this study will be highlighted and discussed in chapter 6.

Chapter 6

Introduction

This chapter will summarise chapters four and five, discuss the conclusions from the research, present the strengths and limitations of the study, highlight the contributions to knowledge and discuss the implications for research practice and policy.

6.1 Summary of Chapters 4 & 5

Chapter 4 detailed the findings from the study and presented the three overarching themes; PCI is not a fix, Loss of Identity and Cardiac rehabilitation is a safety net. To explain the findings and answer the research questions, chapter 5 discussed the theory of the self-regulation model of illness perceptions in relation to the participant's responses (Leventhal et al., 2011). The illness perceptions model provided a framework to synthesise participant responses, drawing conclusions from the findings that two main groups of emotions are related to the PCI treatment.

6.2 Conclusion from the research

The study aimed to understand the lived experience of how CHD patients feel they obtain emotional support post PCI and from the methodological approach of interpretative phenomenological analysis, the findings offer a unique contribution to understanding the emotional experience of individuals diagnosed with CHD post PCI treatment.

Emotions experienced after the PCI treatment can be grouped into two categories, emotions experienced in relation to the physical body and emotions experienced in relation to others.

The emotions experienced in relation to the physical body are fear, anxiety and disappointment found to be due to the diagnosis of CHD and the non-curative nature of the PCI. These emotions result in a fixation with diagnostic tests as means of seeking reassurance that the PCI is effective in preventing symptoms of the disease.

The emotions experienced in relation to others are frustration, embarrassment and guilt found to be related to a perceived loss of identity resulting in male participants of this study exhibiting risk-taking behaviour. To the best of our knowledge, risk taking behaviour has not been previously found in individuals diagnosed with CHD post PCI treatment. These emotions are also found in relation to the participants' age and are experienced in relation to feeling too young to have a diagnosis of CHD. For some this results in lifestyle modification being a focus of support for the emotions of frustration, embarrassment and guilt and offers a medium for participants to feel in control of the disease. For some males, talking to others who share a similar diagnosis to themselves reassures them they are not alone and provides the emotional support that enables them to address the emotions of embarrassment and guilt.

Individuals who have complex social circumstances, including living alone and separation from a partner, experience feelings of isolation which contribute to heightened emotions and physical symptoms of stress. This finding was specifically related to females.

The presence of existing comorbidities increases anxiety, worry and stress in relation to thoughts of additional restricted living and challenges the recommended risk reduction strategies related to the diagnosis of CHD post PCI treatment.

For the majority of individuals, cardiac rehabilitation provides an educational environment offering information from health care providers in relation to timelines to recovery post PCI and support in relation to lifestyle change and physical functioning. This finding is in keeping with the recommended objectives for cardiac rehabilitation and supported in the findings of previous studies (BACPR, 2012; Lavie & Milani, 2011; Redfern & Briffa, 2011; Roca-Rodríguez et al., 2014).

For individuals who do not trust PCI as a treatment and have existing co-morbidities or experience complex social circumstances, the information received with the current cardiac rehabilitation pathway is not sufficient to reduce negative emotions.

6.3 Strengths and limitations

A methodological strength of the study is the use of the in-depth interviews which enabled the participants to talk and share their innermost feelings in relation to the emotional experience of the individual diagnosed with CHD post PCI treatment. This revealed a unique insight into the lived world of the participant and a wealth of data from which to analyse the phenomenon (De Chesnay, 2015). The use of Van Manen's lifeworld existential of lived time (temporality), lived space (spatiality), lived body (corporeality) and lived other (relationality) (Manen, 1990), has enabled the researcher to discover the meaning of the lived experience within the data and has strengthened the interpretative phenomenology analysis findings of this study

A limitation of the study is the small sample size (n = 7) and the fact that all interviews were carried out by the one researcher who worked with the study population within the cardiac rehabilitation. This fact may increase the risk of response bias as all participants knew the researcher. To avoid bias and improve trustworthiness within the data collection and processing, a full audit trail of member checking and peer debriefing has been detailed within the study design as per the recommendations of Lincoln & Guba (1985).

The overall age of the participants recruited to the study is of a younger age, 33 years to 62 years of age. This point is a limitation of the study due to the fact that comparisons with individuals older than the study participants cannot be produced and the findings of this study cannot be generalised to older adults diagnosed with CHD, post PCI.

The approach to the literature review within this study is explained within Chapter 2; however, this was not a traditional systematic review but a review using systematic methods and may result in an increased risk of some literature being missed. To reduce this risk the principles of a systematic approach to literature searching were followed (Bettany-Saltikov, 2012).

In order to ensure the ideal participants for this study, a purposive sample of participants was recruited (Manen, 1990; Moule & Goodman, 2009). The purposive sampling technique may increase the risk of sampling bias, therefore, this study cannot guarantee the findings are representative of the wider PCI population. The participants were recruited within the first year after PCI treatment (see table 4.2 chapter 4), and the differing time lapses from PCI may have skewed the participant responses. Some participants had PCI for angina management whilst others received PCI treatment post-MI therefore the two patient groups may differ in responses and this cannot be known from this study.

6.4 Contribution to knowledge

Existing qualitative studies related to patients diagnosed with CHD post PCI have focused on the experience of negative emotions in relation to the diagnosis or the treatment of CHD. This study can agree with other studies and confirm negative emotions are experienced in association with a diagnosis of CHD and in relation to understanding that PCI treatment is not a cure for the disease (Gulanick et al., 1998; Hasankhani et al., 2014; Peterson et al., 2010). This study differentiates from other studies; it explored how age, gender, social circumstances and the presence of existing comorbidities affected emotions in this population and it asked the participants views about what type of information they felt was most effective in improving emotions.

The study identified a small number of male participants to fixate on diagnostic test results as a means of seeking reassurance that PCI as a treatment is effective in preventing symptoms of the disease. This strategy is a short term source of reassurance to support negative emotions of fear and anxiety and generates a dependency upon health professionals for regular testing in order to gain feedback from inside their body. The fixation leads to a reliance on monitoring, for example, heart rate, blood pressure and blood tests, and could lead to further anxieties in relation to either feeling the need to self-test or to seek appointments with health professionals, a course of action which would be contrary to the planned follow-up appointments recommended by the clinical guidelines.

This study shares the findings related to the CHD diagnosis and confirms negative emotions are experienced in relation to the thoughts of having the disease of older age and negative emotions are experienced in relation to the loss of a previous health identify (Keaton & Pierce, 2000; Nymark, Mattiasson, Henriksson, & Kiessling, 2014). This study also concurs with findings of Gulanick et al. (1998) and confirms lifestyle modification is a support strategy for some participants in order to gain control of emotions linked to the CHD diagnosis and future disease progression, but this study can add, lifestyle modification is an emotional support regardless of age or gender. A unique finding of this study is that for some the loss of identity and the CHD diagnosis lead to risk taking actions which knowingly contradicted the risk reduction recommendations of health professionals. This finding is not shared in the literature in relation to individuals diagnosed with CHD post PCI treatment and was a strategy specific to male participants wishing to reclaim self-identity.

In this study, the cardiac rehabilitation environment provides education and information from healthcare professionals and others similar to themselves. The information supported negative emotions in relation to the timelines to recovery, lifestyle management including exercise and social recovery related to the diagnosis of CHD. For individuals who have complex social circumstances, have existing co-morbidities or who distrust the PCI treatment and feel unable to control the disease progression, negative emotions remain unsupported. For these individuals, the existing pathway of care post PCI treatment, including cardiac rehabilitation, offers insufficient information to support their emotional needs. In the absence of emotional support negative emotions will increase and according to previous research will then increase the risk of future disease progression (Grewal et al., 2011; Renzaho et al., 2014; Tully et al., 2013). The need to individually identify emotions experienced specifically in relation to the CHD diagnosis and the PCI treatment may need to be considered by healthcare providers.

6.5 Implications of the research

Implications for practice

Patients experience strong emotions after PCI, some even after several months. These emotions do not seem to be addressed in the traditional way of managing and rehabilitating this patient population. Although clinical guidelines recommend health professionals to assess and support negative emotions such as fear and anxiety, the information given seems to be inadequate. Health professionals need to consider how best to identify the patient's individual information needs early on in their recovery.

Patients want information in different ways. Evidence within this study confirms the support of peers is important to improve emotions related to social recovery; therefore, practice needs to consider ‘peer support’ or a ‘buddy’ system for those individuals who either decline or are unable to attend cardiac rehabilitation. Peer support interventions can be delivered online, one to one or within a group setting and include the training of lay people to encourage emotional or informational support (Enggaard & Uhrenfeldt, 2016). Whilst cardiac rehabilitation is effective in providing peer support, it does not seem to effectively support patients to manage their emotions. There is a need to identify patients' individual needs in relation to emotional support and despite this being part of the SIGN guidance for several years, it seems ineffective, therefore an exploration of the most effective way of doing this would be beneficial.

This study found sub groups of the patient population to be most in need of emotional support. Health professionals need to identify these individuals and individualise information to target the emotional needs of these groups of patients. For example, individuals with complex social circumstances, existing comorbidities or requiring reassurance with regard to PCI as a treatment. There is also evidence of differing information needs between males and females.

The current clinical guideline recommends health professionals assess negative emotions (SIGN 2016), and individuals identified with complex emotional needs are referred to a clinical psychologist and all others are supported within a locally defined clinical pathway. Examples of emotional support in this pathway include booklets, leaflets and home audio relaxation for listening devices. This study found participants said “no one spoke” to them regarding their emotions. This suggests the time spent assessing negative emotions did not include time spent talking about the emotions. Health professionals, not merely confined to the cardiac rehabilitation pathway, need to be supported in developing new skills related to interviewing and conducting health assessments in this patient population in order to have meaningful discussions related to emotions. Alternative interventions to support emotions in the post PCI population have been assessed within chapter 2 of this study and include talking therapies such as counselling, mindfulness and cognitive behaviour therapy (CBT). Increasing access to interventions which encourage talking about emotions needs to be considered within the current pathway of care and determining which talking therapies are most effective would be beneficial, however, the existing research related to talking therapies in a PCI population is scant.

Implications for policy

Clinical guidelines for this population (SIGN, 2016) make recommendations for health professional to provide early intervention in order to identify those most at risk of negative emotions and recommend the use of standardised screening tools, such as the Hospital Anxiety and Depression Scale (HADS). HADS was not explored within this study, but as per the clinical recommendations, it is used as a screening tool within the cardiac rehabilitation pathway. All participants of this study describe being included within the cardiac rehabilitation pathway and share experiencing significant negative emotions. The findings of this study confirm participants perceive they did not receive emotional support. Previous systematic reviews have questioned the reliability of the HADS to accurately assess an individual's emotional distress, suggesting some of the language used within the questions may be leading and result in a risk of bias (Cosco, Doyle, Ward, & McGee, 2012). The HADS tool would not have identified the emotions identified within this study. The traditional recommendation of the HADS should be reviewed in relation to alternative screening tools. Exploration is needed to determine what tools would help identify patients in most need of emotional support.

Policy acknowledges the need for early psychosocial intervention and individualised information to reduce misconceptions about CHD, however, it does not provide guidance on how this should be carried out, who is best placed to give this support, nor does it differentiate between informational support and emotional support (SIGN, 2016). Clinical guidelines may need to be altered to take account of the influence of emotions on PCI patients' wellbeing and to reflect upon who would be best to support these patients.

Implications for research

This is the first study to find risk-taking behaviour in individuals diagnosed with CHD post PCI treatment. Due to the small sample size of this study, it is recommended future studies are carried out with a larger sample size to explore risk-taking behaviour in this population. The findings of the current study interpreted the risk-taking behaviour to be due to the feelings and emotions associated with loss of identity which contradicted the risk reduction advice of health professionals. Future studies should seek to explore which factors influence risk-taking behaviour and include an exploration of the participant's perception of risk-taking behaviour.

Talking therapies such as mindfulness aimed at reducing stress and offering strategies to help individuals cope with negative emotions have been successfully implemented into the rehabilitation pathway for a number of serious health conditions such as cancer (Johns et al., 2016; Schellekens et al., 2016). Talking therapies have been recommended in public health initiatives (Henderson, 2012) to improve social and emotional health and should be considered within the current cardiac rehabilitation model to enhance the emotional support for individuals diagnosed with CHD and post PCI treatments. The findings of the current study indicate future studies are required to explore the emotional experience of talking therapies for this population. Although some research exists in relation to talking therapies, such as mindfulness addressing the emotions of the post PCI population, the findings of the literature review suggest further good quality studies are required prior to implementing talking therapies within practice.

6.6 Reflexivity

Reflexivity offers the opportunity for self-analysis, encouraging the researcher to review their personal relationship with each step of the research process (Engward & Davis, 2015). Within the qualitative approach to interpretive phenomenology research, the researcher is personally involved within the data collection and data analysis stages. This close relationship, which is integral to the study method, can increase the risk of bias. To increase rigour and reduce bias, a critical reflection of each stage of the research will follow.

The researcher is a qualified instructor of the British Association for Cardiovascular Prevention and Rehabilitation (BACPR) and has been supervising Phase III and IV cardiac rehabilitation programmes for a number of years. During the year of 2015, the researcher successfully secured a research studentship to explore how CHD patients feel they obtain emotional support post PCI. This was the first experience of a research degree and regular supervision meetings to discuss and reflect upon the decisions made during the research process were maintained. The actions and recommendations from these meetings were recorded by the researcher within a reflective log. The process of supervision offered invaluable support and helped in the development of critical reflective skills.

Maintaining a research diary is an important recommendation in phenomenology research (Manen, 1990). Engward and Davis (2015) highlight the researcher’s influence within the data collection process may increase the risks of bias and therefore recommend the need for critical analysis in relation to developing an understanding of such risks. Field notes were recorded by the researcher and retained throughout the data collection process. These notes contained the thoughts and observations in relation to the questions asked by the researcher and the answers given by the participant. These notes enabled the researcher to develop an awareness of effective interviewing skills, for example, the use of open-ended questions permitted the participant to talk freely thereby reducing the influence of the researcher upon the data collection process.

During the data analysis and the process of data reduction, there may be an increased risk of bias in relation to the inability to replicate the interpretation of the researcher (Engward & Davis, 2015). To improve rigour and trustworthiness of this process, the coding and formulation of thematic statements followed the recommendations for interpretative phenomenology analysis (Lincoln & Guba, 1985; Manen, 1990). The initial coding and interpretation of the data was shared and discussed with the supervisory team. The process of peer debriefing reduces the risk of personal bias by the researcher. The record within the research diary and the email logs form a document to support the thoughts of the researcher during this stage.

Throughout the research process, the supervisory team have positively challenged the researcher’s thoughts, supporting and encouraging a continued journey of reflection. This reflective practice has increased the researchers understanding and awareness of bias and contributed to an improvement in the quality of this research.

References

Appendix 1 Key Word Search

Key Word Search CINAHL June 2015

#	Query	Limiters/Expanders	Last Run Via	Results
S3	S1 AND S2	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	115
S2	(MM "Support, Psychosocial+") or emotion* or psychosocial support or coping or adaptation or self manage* or self care	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	173,816
S1	(MM "Angioplasty, Transluminal, Percutaneous Coronary")or percutaneous coronary intervention or coronary angioplasty	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus with Full Text	10,438

Key word Search MEDLINE June 2015

#	Query	Limiters/Expanders	Last Run Via	Results
S4	S2 AND S3	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE	109
S3	(MM "Social Support")or emotion* or psychosocial support or coping or adaptation or self manage* or self care	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE	443,050
S2	(MM "Percutaneous Coronary Intervention+")or (MM "Angioplasty, Balloon, Coronary")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE	27,799
S1	(MM "Percutaneous Coronary Intervention+/PX")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE	130

Key Word Search PsycINFO June 2015

#	Query	Limiters/Expanders	Last Run Via	Results
S3	S1 AND S2	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - PsycINFO	18
S2	MM "Psychosocial Factors" or emotion* or psychosocial support or coping or adaptation or self manage* or self care	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - PsycINFO	456,551
S1	percutaneous coronary intervention	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - PsycINFO	150

Appendix 2 Data Extraction Forms

Quantitative generic Data Extraction Form

Bibliography reference:

Title:

Source

Purpose of Study:	
Reviewers name:	
Date:	
Study Design:	
Population:	
Sample Size:	
Number:	
Criteria for diagnosis:	
Any secondary diagnosis:	
Exclusion criteria	
Setting	
Intervention:	
Comparative intervention:	

Outcomes:	
Adverse effects:	

Qualitative generic Data Extraction Form

Date of Extraction:

Bibliographical details of study:

Purpose of Study:	
Study Design:	
Setting:	
Population:	
Sample Selection:	
Number:	
Age:	
Education, years:	
Ethnicity/race:	
Religion:	
Relationship of family member	
Primary diagnosis at time of event:	
Exposure:	

Outcome 1 themes

Population Experiences 1				
page	col	line	Data extracted	Sub themes

Outcome 2 themes

Population Experiences 2				
page	col	line	Data extracted	Sub themes

Outcome 3 themes

Population Experiences 3				
page	col	line	Data extracted	Sub themes

Appendix 3 Literature Review Theme development

	Education	Mindfulness	Home Activity
Nyklicek et.al 2014	Group format lead by certified clinical psychologist of pre-planned topics for discussion and practical meditation activities Self-help given a written booklet including same pre-planned topics	4 sessions of practical meditation activities	30 minutes daily of meditation activities for both the intervention group and the self-help group
Furuya et. al. (2015)	3 written booklets of pre-planned subjects and a telephone script re self-care developed by two of the researchers. Individual telephone support.		
Appels et. al 2006	Counsellors acted as facilitators of Patient focused group discussions	One or two relaxation exercises within the group session	Relaxation exercises every day
Shiloh et. al. (2014)	Individual attention and verbal information from cardiologist. Ability to receive personalised verbal information. Visual observation of disease effects		
(Hagberth et al., 2008)	Group sessions sharing of experiences Patient centred topics		Exercise was discussed positively and accepted with positive memories

	Verbal information is meaningful Observation of others in a similar situation Individual voice heard in evaluation of sessions at finish		

Appendix 4 Participant Information Sheet

My name is Sheona McHale and I am a research student from the School of Nursing, Midwifery and Social Care at Edinburgh Napier University. As part of my Masters course, I am undertaking a research project aimed at understanding the lived experience of how individuals feel they obtain emotional support post Percutaneous Coronary Intervention (PCI).

The title of my project is: An exploration of how individuals diagnosed with Coronary Heart Disease (CHD) feel they obtain emotional support after they undergo PCI.

I am looking for volunteers to participate in the project. The criteria are as follows:

- You must have been diagnosed with CHD and discharged from either the acute services of NHS post PCI treatment or from NHS Cardiac Rehabilitation Services.
- You must be able to understand and speak English
- You must not be experiencing symptoms of CHD or feeling unwell.

If you agree to participate in the study, you will be asked to participate in an interview with myself. When you attend the exercise class we will find a time that is mutually convenient for the interview. The interview will take place in a private room at one of the venues of Fife Sports and Leisure Trust. During this interview I will ask you questions related to how you felt after you were treated with PCI. With your permission I will use an audio-recorder to capture our discussion. I am not aware of any risks associated with this interview and an example of the questions I will ask you are: How did you feel after you heard your diagnosis? The whole procedure should take no longer than 60 minutes. You will be free to withdraw from the study at any stage and you would not have to give a reason for this withdrawal.

All data will be anonymised as much as possible, but you may be identifiable from tape recordings of your voice. Your name will be replaced with a participant number or a pseudonym, and it will not be possible for you to be identified in any reporting of the data gathered. All data collected will be kept in a secure place and stored on an Edinburgh Napier University PC that is password protected to which only the researcher has access. These will be kept until the end of the examination process, following which all data that could identify you will be destroyed. If you chose not to participate or withdraw from the study the care/support you receive in the exercise class will not be affected.

The results may be published in a journal or presented at a conference.

If you would like to contact an independent person, who knows about this project but is not involved in it, you are welcome to contact Dr Norrie Brown, Senior Lecturer of Nursing, Midwifery and Social care at Edinburgh Napier University. His contact details are N.Brown@napier.ac.uk.

If you have read and understood this information sheet, any questions you had have been answered, and you would like to be a participant in the study, please now see the consent form.

Researchers Name: Sheona McHale

Contact details: 40189990@live.napier.ac.uk or 07990727631(Business Number/Inhalefitness)

Appendix 5 Consent Form

An exploration of how individuals diagnosed with CHD feel they obtain emotional support post percutaneous coronary intervention (PCI) treatment

I have read and understood the information sheet and this consent form. I have had an opportunity to ask questions about my participation.

I understand that I am under no obligation to take part in this study.

I understand that I have the right to withdraw from this study at any stage without giving any reason.

I agree to participate in this study

Name of participant: ______________________________

Signature of participant: ______________________________

Signature of researcher: ______________________________

Date: ______________

Contact details of the researcher:

Name of researcher: Sheona McHale

Address: MRes Student, School of Nursing, Midwifery and Social Care

Edinburgh Napier University

Sighthill Campus, 9 Sighthill Court,

Edinburgh EH11 4BN

Email : 40189990@live.napier.ac.uk Tel: 07990727631(Business Number/Inhalefitness)

Appendix 6 External Permission

Fife sports and leisure trust
Be active • feel great!

Your ref:

Our ref: GSR/CMB/MI-Let-2016-GR001

Ask for: Glen Rorrison

1st February 2016

Ms Sheona McHale
31 Douglas Drive
DUNFERMLINE
Fife
KY12 9YG

Dear Sheona

Research Proposal

I refer to your recent request to be permitted to recruit participants for your research as part of your Edinburgh Napier University course.

This letter is to confirm that Fife Sports and Leisure Trust will permit you to contact participants in the Phase 4 Cardiac Rehabilitation programme to secure such subjects for your research. Once contacted, potential subjects should be advised that their details will be used in the course of your research and that any information you gather will remain confidential. As soon as the project is completed you should arrange for all details of the participants to be destroyed in keeping with the Data Principles contained within the Data Protection Act (1998).

I wish you every success for your research and hope that any information you receive is suitable for your course and that it has a positive outcome on your course outcome.

Yours sincerely

Glen S Rorrison
Corporate Services Manager

Head Offi
Music Institute, East Port, Dunfermline, KY12 7
Email SL.Mailbox@fifeleisure.org.uk | **Telephone** 01383 6023
www.fifeleisure.org.uk
Scottish Charity No. SC039484 / Company Registration No. SC336004

Appendix 7 Interview Schedule

Interview Schedule: To understand the lived experience of how CHD patients feel they obtain emotional support post PCI
1. Please could you tell me how you felt when you heard your diagnosis? Possible prompts: How did this make you feel? How did you cope with this? What information did you receive? How did this help? What support did you receive? How did this help? Why did this help? 2. How did you tell others about your diagnosis? Possible prompts: How did this make you feel? How did you cope with this? What support did you this give you? How did this help? Why did this help? 3. Please could you tell me what kind of things have you felt yourself thinking about since your treatment? Possible prompts: How does this make you feel? How do you cope with this? What helps? How does this help? Why does this help? 4. What have you found most difficult or challenging since your treatment? Possible prompts: How did this make you feel? How did you cope with this? Can you explain what gave you support? How did this help? Why did this help? 5. How has your diagnosis affected your day to day activities? Possible prompts: How does this make you feel? How do you cope with this? Can you explain what support you receive? How does this help? Why does this help? 6. How has your age or any other condition affected how you feel? Possible prompt: How do you cope with this? Can you explain what support you receive? What helps? How does this help? Why does this help? 7. How do you feel about the future with your diagnosis?

Possible prompts: How does this make you feel? How do you cope with this?

What information helps? How does this help? Why does this help?

8. **What information do you feel has been most beneficial in helping you deal with your emotions since your percutaneous coronary intervention?**

   Possible prompt: How did this help? Why did this help?

Possible probes to be used: Why? How? Can you tell me more about that? What do you mean?

Appendix 8 De Briefing Sheet

De briefing Sheet

Thank you for participating in the study: An exploration of how individuals diagnosed with Coronary Heart Disease feel they obtain emotional support after they undergo Percutaneous Coronary Intervention (PCI).

The purpose of this study was to explore how individuals like yourself feel they obtained emotional support after undergoing the surgical treatment percutaneous coronary intervention (PCI) to relieve the symptoms of coronary heart disease. Due to the advances in PCI surgical procedures, the time spent in hospital has been significantly reduced in recent years and patients are able to return home relatively quickly to continue the recovery process. The interviews from yourself and other patients have provided valuable descriptions of feelings and emotions during this recovery time period which we plan to use to directly inform our work here in rehabilitation.

If you have any questions about this study please ask me now or if you wish to contact me at a later time you may do so by contacting me at the address and telephone number at the bottom of this sheet. If you would like to know further information about this study I can provide you with some references and if you would like to receive a copy of the study results I can email you at the end of the study. If you have any concerns with this study please contact Mr Dr Norrie Brown, Senior Lecturer of Nursing, Midwifery and Social care at Edinburgh Napier University. His contact details are N.Brown@napier.ac.uk

Thank you.
Sheona

Contact details of the researcher

Name of researcher: Sheona McHale

Address: MRes Student, School of Nursing, Midwifery and Social Care
Edinburgh Napier University
Sighthill Campus, 9 Sighthill Court,
Edinburgh EH11 4BN

Email / Telephone: 40189990@live.napier.ac.uk **Tel. No. 07990727631 (Business Number/Inhalefitness)**

Appendix 9 Quantitative and Qualitative research approaches in human studies

	Quantitative	**Qualitative**
Characteristics of approach	Collects data which can be converted into numerical data	Collects data which is presented as narrative data
Aim of the approach	To test a hypothesis or a question about phenomena (deductive)	To explore a phenomena (inductive)
Objectives	To calculate differences To predict a cause and effect To describe norms within a population	To describe differences To explain relationships To describe single experiences or a group experience To generate a theory
Data collection examples	Instruments - Questionnaires and surveys Structured with either closed or open ended questions or use of standardised scales Collected by way of postal, telephone, on-line, face to face	Interviews – semi structured/unstructured Focus group discussions Observations
Sample	Normally large Objectively selected	Normally small Subjectively selected
Study design	Experimental and survey longitudinal or cross-section designs. Experimental design will use control group with similar characteristics as study group and use a research design such as	Ethnography, phenomenology or grounded theory. The study sample may be recruited purposively or by snowballing. Ethnography used to describe and interpret behaviours within a group/community/culture. A purposive sample will be observed. The data will offer a

	Randomised Control Trial (RCT) to randomise both groups of participants into study or quasi-experimental where a comparison of groups cannot be randomisation perhaps due to ethical reasons Survey design will use self-reporting information from participants.	rich description of the subjects world. Phenomenology is founded in philosophy and aims to gather life experiences. The data collected may either be descriptive which will “bracket” off the researcher or interpretive enabling the researcher to be interactive and interpret the data. Grounded Theory is founded in social science and is often referred to as a general method of research. The method offers structure starting with a question and an aim to develop new theory or a hypothesis. Examples of data collection are observations, records, reports and conversations. The data will be reduced and coded in a methodical way.
Strengths	Findings may be generalised to the wider population Standardised approaches to data collection offer enhanced rigour	Data offers in-depth insight into the experience of the subject Data collection methods offer flexibility during study Findings are often unique
Limitations	Data collection instruments are inflexible and cannot be amended once included in the study	Findings cannot be generalised Research quality can be challenging for inexperienced researchers

Appendix 10 Ethical Approval

Edinburgh Napier
UNIVERSITY

Edinburgh Napier University
School of Nursing, Midwifery and Social Care
Research Integrity Committee
9 Sighthill Court
Edinburgh
EH11 4BN

Date 31st March 2016

Dear Sheona

Project Title: **An exploration of how CHD patients feel they obtain emotional support after they Percutaneous Coronary Intervention (PCI)**
Project start date:22nd February 2016
Project reference: *FHLSS/* ***Version no****. 2*

Further to your application for Ethical approval to undertake a research study at Edinburgh Napier University, I am pleased to inform you that the committee have approved your application and we wish you all the best with your study.

May I remind you of the need to apply to the Research Integrity Committee prior to making any amendments to this study or of any changes to the duration of the project and provide notification of study completion. All documents related to the research should be maintained throughout the life of the project, and kept up to date at all times.

Please bear in mind that your study could be audited for adherence to research governance and research ethics.

Yours sincerely,

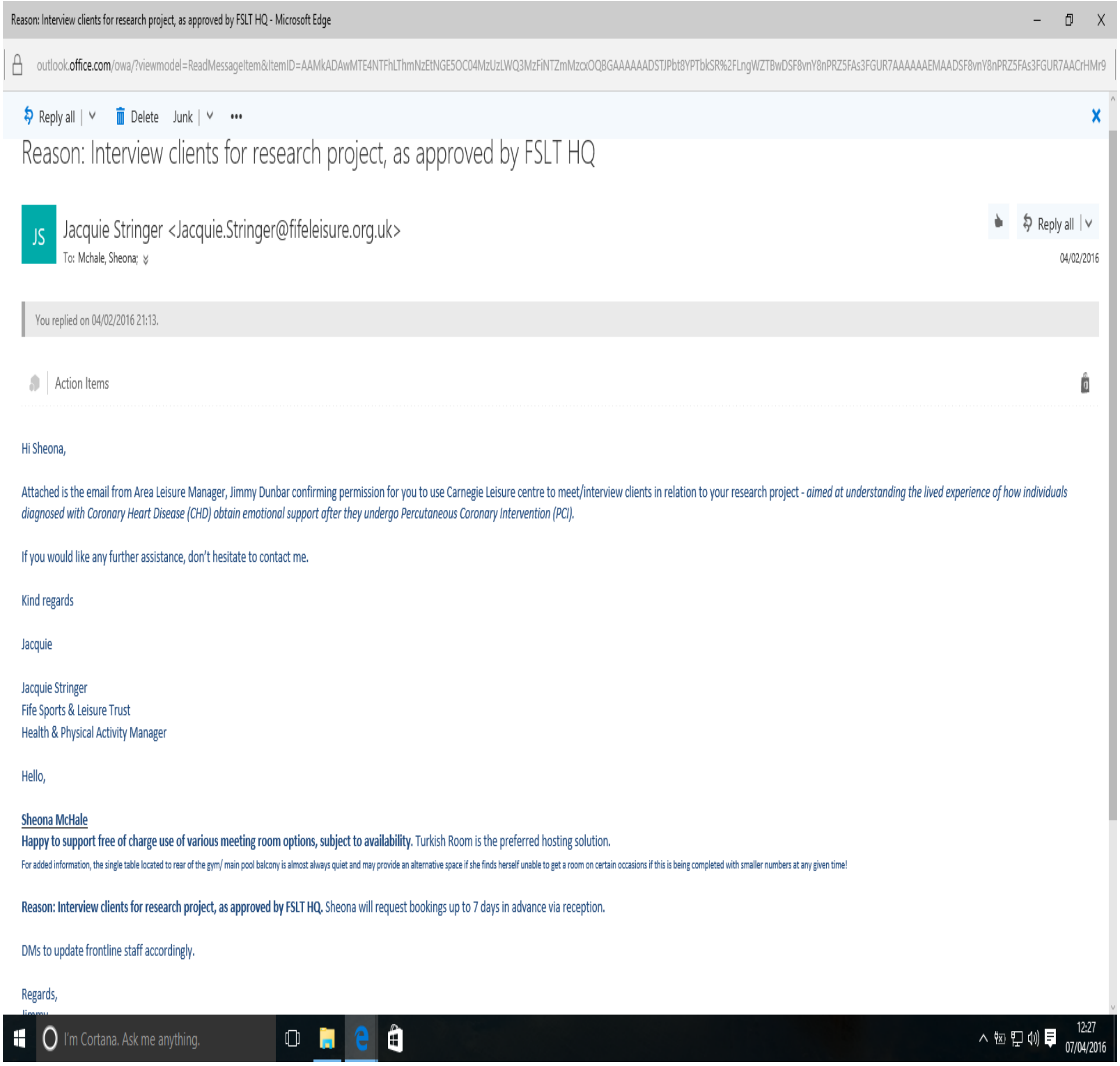
B. Neades

Dr. Barbara Neades
Chair

Edinburgh Napier University is a registered Scottish charity Reg. No. SC018373

Inspiring Futures
www.napier.ac.uk

Appendix 11 FSLT permission to interview on premises



Reason: Interview clients for research project, as approved by FSLT HQ

Jacquie Stringer <Jacquie.Stringer@fifeleisure.org.uk>

To: Mchale, Sheona;

04/02/2016

You replied on 04/02/2016 21:13.

Hi Sheona,

Attached is the email from Area Leisure Manager, Jimmy Dunbar confirming permission for you to use Carnegie Leisure centre to meet/interview clients in relation to your research project - *aimed at understanding the lived experience of how individuals diagnosed with Coronary Heart Disease (CHD) obtain emotional support after they undergo Percutaneous Coronary Intervention (PCI).*

If you would like any further assistance, don't hesitate to contact me.

Kind regards

Jacquie

Jacquie Stringer
Fife Sports & Leisure Trust
Health & Physical Activity Manager

Hello,

Sheona McHale
Happy to support free of charge use of various meeting room options, subject to availability. Turkish Room is the preferred hosting solution.
For added information, the single table located to rear of the gym/ main pool balcony is almost always quiet and may provide an alternative space if she finds herself unable to get a room on certain occasions if this is being completed with smaller numbers at any given time!

Reason: Interview clients for research project, as approved by FSLT HQ. Sheona will request bookings up to 7 days in advance via reception.

DMs to update frontline staff accordingly.

Regards,

Appendix 12 Observation of participants before and during interview

Sample of 4 participants

P1 - at initial introduction he had good eye contact, seems relaxed. We chat and I check the referral. He appears keen to take part in interview, sits comfortably, happy to talk about his diagnosis and has open body language. His body language alters during interview, he clasps his hands and eye contact drops when he discusses co morbidity diagnosis post PCI. Puts hands to face when explaining about family. Experiences a coughing fit.
P2 - very young man. I feel inquisitive. He is cheerful and appears relaxed. Good eye contact. Sits very relaxed during interview, hands on table and apart from having to switch his phone off, he doesn't appear to fidget much. He laughs a lot but I suspect this is his way of covering his emotions
P3 - very young. Friendly and approachable. Appears to be nervous and he thinks he hasn't got anything to share with me. Body language in interview Appears worried. After initial question, he appears to relax as he is telling his story, he sits with a very open body language, turning his body towards me and extending his arm along the back of the chair. His eye contact drops during the interview when he explains about exercise; I think he is frustrated with his loss of fitness.
P4 lovely young lady, smiles and seems relaxed in her body but starts the interview by saying I might cry! I explain the informed consent and advise she may stop the interview at any time. She is happy to continue. She smiles and appears happy to tell me her journey but as she discusses her husband she starts to become emotional, her body language changes and she covers her face. I ask her if she is ok and I give her some time out. She wants to continue but her emotions are very near to the surface and she fidgets a lot in the chair - touching her hair and eyes constantly. I feel a little emotional myself and try really hard to remain composed. This is a difficult interview.

Appendix 13 Reflections post interview - Random sample of 2 participants

P1 – My first interview and as I reflect, I feal relieved that I feel it went well although my initial feelings about this person is that he is very aware of his mortality. I felt emotional listening to him, I want to tell him that the information he has understood from his journey is incorrect. I think he is relying on the physical tests as a support to ease his fears, the tests are reassuring him. He is still traumatised, talking about his will, aware of his own mortality. He thinks he is too young to die. Aw I could cry for him. He has been let down, he needs support, and he wants a test to tell him everything will be ok. Maybe it gives him reassurance? Should I have given him more time at the end to check if wants to ask more questions? He was swallowing frequently, as if suppressing emotions when talking, should I have given him a break? He had a coughing fit during the interview which has reminded me to bring water for all future interviews.

P3 –I was feeling more relaxed within this interview. The participant appeared very relaxed initially during the interview but kept touching his head and face. Eye contact when he was explaining his emotions was always away for my eyes. He enjoys talking to me about his journey. I feel he was reliving some of these emotions whilst he was talking to me; he kept pausing and swallowing in between explanations. He was VERY aware of his mortality talking about heart attack and death a lot, he can't believe he had a heart attack. He was a little confused about the elective PCI he thinks this is for maintenance. It was clear that the heart manual helped, referred to it explaining his journey in layman's terms, so this appears to have offered him a logical timeline. The nurse also provided him with reassurance. He was focusing on physical signs as a method of reassurance. It feels like he is reassured that others are young experiencing Heart attacks. He is aware he is not cured. He mentioned a Pamphlet at elective, I must check what this was but he doesn't feel he was given any info in hospital so that is confusing. I feel he is still in need of emotional support, he is needing to talk and talk about his experience. I tried to write notes but I feel this hindered me..so I stopped half way through. I wasn't just listening. I feel I was picking out key points and listening for specifics rather than the experience. Next interview, I will take no notes and just listen.

Appendix 14 – Thoughts during transcript reading - Sample of two participants

P2 - he is embarrassed and ashamed that he has CHD "I'd never looked after myself".., it is like a stigma. "You think of like maybe people in their 50's, 60's, 70's.... Being wheeled out of the ward to the costa coffee was embarrassing for him...."people would know what was wrong with me...coming out of the cardiac care unit. I was embarrassed telling friends, even those I had had since 4 yrs. that I had a heart attack...humour helps him to deal with this. This embarrassment. The language people use around, him being young is contributing to the feelings of embarrassment "...the doctor explained what had happened and what they'd done it was fairly, even with my lifestyle that it was fairly unusual for somebody my age to have one ..." People say "but you're so young..."

He thought about mortality ". ...I still had this sort of old-fashioned idea that when you have a heart attack your kind of finished,"...but nurses gave him time to sit and explained timescales which gave him support ...to tell him this was not the case if he made changes to his lifestyle and this gave him "relief". It reassured him ..."like someone coming to you and saying you're going to be okay. But still aware of his mortality "...I may get passed my 40's, but is optimistic about the future through changing lifestyle behaviours such as work, socialising and exercise.

Fear stopped him asking questions of the cardiologist and stopped him talking about it his worries to the visitors because he didn't know what was happening, he wanted to know what happens next but couldn't ask! Even although the cardiologist explained the disease and procedure and asked him if he had any questions, he couldn't ask them?

He uses the lifestyle changes as a way of dealing with this to show himself and he perceives others that he is trying to put it right. So to overcome the embarrassment and stop the stigma of age, the focus on lifestyle is helping. Says this happening is a huge fatalist for change. He is separating from his partner.

He has good social support, friends and work colleagues have changed their socialising behaviours and encourage his eating and exercise.

The time frames were fast in his head ....he wasn't sure what was happening during the few days in hospital.

Meeting others in cardiac rehab has helped him feel optimistic about getting past 40!!! they share his feelings but remain upbeat about the future. It offers him exercise reassurance to push himself further and he can achieve it.

Work helped give him his life back (normal)

P4 – she is very emotional, frightened, they mentioned a triple bypass and this scared her and made her realise just how serious a situation she was in. The cardiologist words worried her “stents last a year” but she has taken from this that the stents are not a cure "I am not fixed" she is worried they have only managed to sort out two of the three arteries, whereas she feels the triple bypass would have fixed her. She hoped the angiogram would tell her that she didn't have disease, she had no symptoms so didn't feel their diagnosis was

correct..."they are talking rubbish". She describes the experience as awful, utterly miserable, fed up.. Time for coming out hospital until cardiac nurse comes was a long time and didn't know what was happening or what was to happen next. She reports getting angina now which she didn't have before and using a spray is embarrassing? She says people were blaming her weight for what happened she couldn't deal with this and went into herself, didn't go out, couldn't manage in house, couldn't go shopping, struggled with medication, I didn't want people to see me like this. Husband works away and only stayed until she could make a cup of tea. She has been re-evaluating her life. Separating from husband, selling her house. Work is a distraction but the people give her support, tell her to take a break if she is stressed, help her if boxes are heavy, she feels they have had a fright so they have changed how the socialise around eating, they ask her about her weight loss each week. She is feeling guilty. She is shocked and ashamed... You associate my condition with somebody older. To cope I just take my medication and do as I am told ... She is scared of the future “I am convinced I am going to die of a heart attack”. She won't sleep in her bed initially ...scared of death. Slept on couch friend asked her what's the difference if you die in bed or on the couch and this made her think and then return to sleeping in the bed. She is frightened and very aware of her mortality.

Appendix 15 An example of Transcript with inductive and deductive coding

Thematic development P1 – James

Aim – To understand the lived experience of how CHD patients feel they obtain emotional support post PCI

- Explore participants emotions after percutaneous coronary intervention
- Explore how certain factors such as age, gender, the presence of comorbidities and social circumstances affect emotions post PCI
- Understand participants views about what type of information is most effective in improving emotions

Meaning statements	Verbatim Transcript	Thematic formulations
	Researcher: Please could you tell me how you felt when you heard your diagnosis?	
I was shocked em…. it just about gave me another heart attack when I heard it was that … I kinda guessed something was wrong	P1 - I was shocked em…. it just about gave me another heart attack when I heard it was that I thought it was just actually wind and I was told I was actually having a heart attack when I was in the… eh.. the Victoria….. It was quite a shock to me. I kinda guessed something was wrong then I was quite shocked to know it was that…eh… it just kinda blew me away I was thinking my god what's going on here I was quite shocked when I first heard it was that.	The experience of denial - This can't be happening to me
	Researcher: You say you were shocked – and can I ask how did you cope with that feeling of shock - how did you cope with that?	His thoughts and actions are as a result of fear of mortality
I just felt I was going to be fine. …. I felt a bit strange was giving my boys a cuddle just in case I asked them to watch their mum just in case eh….. just in case something did happen… I was quite calm… I was putting my hand to my head because I do at times…	P1 - On the day itself I coped okay eh…. I don't know I just felt I was going to be fine. Something was saying to me you are going to be fine today. Eh…. When I was, when I was lying in the A&E, the A&E department in the Vic the only time I felt a bit strange was giving my boys a cuddle just in case I asked them to watch their mum just in case eh….. just in case something did happen but when they were away and I was transferred into the ambulance I was perfectly fine I was just chatting away to the guy and he was all concerned for me but I was quite calm eh… fine, I felt fine there was still a bit of a pain there and he kept on asking me every couple of minutes are you feeling okay. He said do you	

but I knew there was something wrong	feel okay because I was putting my hand to my head because I do at times just lying like that (puts his hand to his head) and doing that (again puts his hand to his head) and he thought I was in pain but I wasn't in pain so he was always concerned but I knew there was something wrong because he was going……(pause)… blue lights flashing and we were going at some speed over to the Royal.	
you are having a heart attack … we are going to get you put over to the Royal just now… maybe I was told something else but the now I can't recall at all	**Researcher: What information did you receive at that time?** P1 - All I'd received was eh… that when I got into the Vic they said yes you are having a heart attack mm… so we are going to get you put over to the Royal get you over there just now. And that's all really I was told. Mm… I can't recall maybe I was told something else but the now I can't recall at all. I was just told I was having a heart attack and I would be getting the first ambulance over. As soon as one arrived I was going away there. Em..That's about it.	His inability to retain information is related to the experience shock and fear Kindness and empathy helps reduce his anxiety
in the A&E department none… I wasn't concerned about support … they were all very caring and the guy he says to me in the ambulance was very nice very caring … your not sure what is going on… I can always remember the pain… really sore and I was sitting halfway up I couldn't lie flat at all the pain was so bad.. getting extremely sore and I'll always remember him popping his head round the side and saying please be still…. I swore at him its really sore knock me… I must have been asleep woke up just as they were all finishing off … I think the consultants were great doing, great doing their job but I suppose its doing their job better and being nice and	**Researcher: So what support did you receive at that time?** P1 - Actually in the A&E department none really at all, none really it was more a question of getting you moved from point A to point B so I wasn't concerned about support mmm no-one came up and said you are going to be fine or nothing like that there was nothing at all like that but they were all very caring and the guy he says to me in the ambulance was very nice very caring he says aye he says you will be fine he says I've went and seen this operation myself they put a wee thing in your heart and it just pushes it it kinda pushes your valve apart he said it seems a great thing to do so I felt kinda reassured at that. Eh When I got into the Royal certainly there was several folk waiting for me rushed straight into the operating theatre and when your going in there your not sure what is going on then your thinking what's going on here eh I can't mind I was giving my arm to swab to be sure it was all sterilised and that's about as much as I can recall there, but I can always remember the pain and the consultant looking up at a TV screen and then there was a kind of curtain between me and what they were doing down a wee bit below as far as I can recall ..he was putting a thing in my arm and I thought he was just putting in a vain putting in a drip or something like that but he must have been	The physical pain is dominating and results in anger because they are not addressing his physical needs

calm it's a sore don't care if its sore just safe my life	pushing the kind of TV thing it was travelling up my arm really sore and I was sitting halfway up I couldn't lie flat at all the pain was so bad and the pain with him doing that as well was really	
they were all nice but couldn't get any food which was a shame but apart from that they were nice checking you all the time	getting extremely sore and I'll always remember him popping his head round the side and saying please be still Mr. …. its for your own good I think I swore at him I said you fffn come and try this its really sore knock me, just knock me out or something but just try and get the pain down a bit I think I suffered it for a wee a kinda little few minutes more then the last thing I knew was I must have been asleep woke up just as they	Nurses are merely doing their job with Kindness but this offers him reassurance
my wife had to because I was in there for two days… we are a kind of close knit outer family… but it was my wife that did all the calls to say that I had actually suffered this… so I don't know what they did at work …. my wife did it all really I didn't need to do a thing.	were all finishing off so I think, I think the consultants were great doing, great doing their job but I suppose its doing their job better and being nice and calm it's a sore don't care if its sore just safe my life **Researcher: And when you got back to the ward – any support there?** P1 - The ward staff were awfy nice you are all wired up mmm checking every couple, if I recall rightly every half hour or so you mmm but you couldn't really move an inch, you had wires coming up everywhere mmm and they were all nice but couldn't get any food which was a shame but apart from that they were nice checking you all the time there. **Researcher: Okay, how did you tell others about your diagnosis?**	Having Someone else to deal with friends and family leaves him to concentrate on himself and this gives him comfort in knowing he is looked after
know that someone's watching after you…. always there .. friendly wee chitchat… 30 minutes doing a check-up …. during the night… every couple of hours doing a check… awfully caring…	P1 - It was my wife that did that mm my wife had to because I was in there for two days so my wife, we are a kind of close knit outer family so aunts and uncles are all quite, are all quite close so she phoned up my brother when she was going home or so in the car or going home to the house eh phoned, tried to phone one other person got the wrong person so she phoned my cousin instead and then I think she phoned one of my uncles the next day I think it was then he after he got the call started to spread it round all the family. She didn't even phone her own sisters I think until the next day or until at least	
only problem I had with the ward was when I tried to have a shower… I pulled out the drip .. so the blood…everywhere.. had to give, give someone a shout it	late on the Monday night, but it was my wife that did all the calls to say that I had actually suffered this and she phoned my work first thing Monday, first thing Tuesday morning I should say and they were, she will always remember. the person who answered the phone saying "you're fucking kidding me" ,(sorry about this), she would be in shock so I don't know what they	He enjoys the timely observations and attention of the nurses because this helps reassure him of being cared for but When attention from nurses is not timely

took a couple of 30 seconds, 40 seconds for someone to come and give me a hand.	did at work she my wife did it all really I didn't need to do a thing. **Researcher: And you said that the nurses, during this time that you were in, that the nurses were really kind and helpful** P1 - Yes	negative emotions of anxiety rise
was I said did you know I've had a heart attack.. and I've hopefully survived it… just like a scab but also a medal you actually survived … I've had a heart attack but I've now , these three stents … WOW three stents.. I felt pleased I was alive eh as if you'd pulled through, beaten the odds… it was not so much feeling sorry for yourself now you're feeling good	**Researcher: In what way, how were they helpful how were they, how did that help when they were showing kindness how did that help?** P1 - Eh To know that someone's watching after you eh they were always there with kind of friendly wee chitchat when they were over to see you I think it was checking or doing the observations every I don't know it seemed every 30 minutes or so it might have been longer than that but it certainly seemed like every 30 minutes doing a check-up every couple of hours it certainly, during the night they were certainly doing every couple of hours doing a check, but they were all awfully caring. The only problem I had with the ward was when I tried to have a shower on the, or tried to wash myself really on the Tuesday morning and I pulled out the drip that was there so the blood went flying everywhere so I had to give, give someone a shout it took a couple of 30 seconds, 40 seconds for someone to come and give me a hand. Maybe it looked an awful lot of blood it probably wasn't a lot of blood just one of the drips come out.	The heart attack wounds him but the stents contribute to his feelings of joy/ euphoria/relief – he feels like he is a survivor so makes him feel strong.
first night I was home I felt as if I wasn't going to make it…. I was scared stiff… I felt another pain and I thought because you are not in your secure environment … felt I wasn't actually going to survive… more aware of every ache and pain … is this something bad again talked to all sorts of cardiac nurses … an open voice and an open ear for you to say what you wanted… If you had any concerns at all they	**Researcher: Okay so when you got out, after you got out of hospital and you are going back to facing people and you were having to tell them yourself how did you feel then?** P1 – (Pause) MMM strangely enough it was like at times it was I said did you know I've had a heart attack then at times you've had a heart attack and I've hopefully survived it. It's a bit strange but it just, its just eh just like a scab but also a medal you actually survived it you said I've had a heart attack but I've now , these three stents put in you felt – WOW three stents but as I said I didn't really tell folk. Most of them were folk in my work Court Service knew then they'd all kind of heard, a lot of people had heard I was getting loads and loads of cards in the house I didn't really have to tell anyone at all just odd people I met in the shops maybe but that's all I said I've been off sick etc. Suffered a heart attack after leaving Sky, so I thought sods law you've only retired a week from Sky and you're	Fear and hypersensitivity leads to vulnerability without professional support The cardiac nurse offers an ear and the tried and tested advice which he

would take it on and talk to you about it… it could be hundreds of patients… you were getting all sorts of blood pressure monitored all blood tests being done etc and they were all actually coming through afine so I think reassurance through them helped me a lot as well.	having a heart end, really having a heart attack eh but **Researcher: See when you say about the scab and the medal can you explain that a wee bit more. What do you mean by that?** P1 - Yeh its just see this thing had, like see this thing had kind of occurred to you and I felt pleased I was alive eh as if you'd pulled through, beaten the odds maybe beaten the odds and you felt good to be alive and it was not so much feeling sorry for yourself now you're feeling good that you 'd actually, that you'd actually survived the kind of journey.	believes is expert helps reassure him The physical tests offer a window to tell him his is fine and this reassures him
I was scared would I only have a month to live … how would my family cope that was my first initial reactions…. I seemed to get through that with time… I have survived I 'm kind a getting better just now I've not had any scares at all BP's been fine blood tests have been fine so I'm on the way to making this recovery….	**Researcher: So the feeling of - I'm alive – how does that help - how does that help you?** P1 - It helps **Researcher: That thinking** P1 - Yeh I must admit the first night I was home I felt as if I wasn't going to make it that first night, I was scared that I was scared stiff then I felt, I felt another pain and I thought because you are not in your secure environment or protected with nurses checking you up every fifteen minutes or an hour or so I felt I wasn't actually going to survive that night but I think it was more nerves and your putting, more aware of every ache and pain you have and your thinking is this something bad again but once I got through that and I talked to all sorts of cardiac nurses etc I felt better about that. **Researcher: So how - speaking to the cardiac nurses helped you feel better – how?**	Time helps heal the fears of mortality Physical tests offer reassure for what cannot be seen
I was deemed possibly to be diabetic…. I thought God I'd have to be taking a jag or watching my food for my lifetime…. I think that freaked me out…. it didnae really appeal to me at all just to try to get on with life diabetic course… it was just all about the same of thing	P1 - Eh they were, came out to the house and they came out roughly at the start it was every I think it was every twice a week maybe then it was on to once a week then once every two weeks or so they were only there about 10 weeks I think most of all but they were, they were an open voice and an open ear for you to say what you wanted to say to them. If you had any concerns at all they would take it on and talk to you about it because they've gone through it with, it could be hundreds of patients, so I was telling them about having the pains they said that's okay, they said if you've any pains here or so actually referring to the pain you could always call 999 they were trying to reassure you I think just actually talking to them once a week when you were getting all sorts of blood pressure monitored all blood tests being done etc and they were all actually	Diabetes induced fear and panic at the thought of another restriction on my life Suggests resilience and acceptance of the condition Information is repetitive and not good quality

they said and I thought it was not very good at all… they've (GP surgery) been looking after you appointments… to get blood tests done that's me coming up to the year so I've to get all sorts of blood tests…. I hope that will also deal with your heart as well… when you've went to see your doctor herself she's went through it with you, she's answered any questions…. even when I was first signed off …. they said they didn't need to see me at all they just gave you an automatic sick line certificate without you coming in then so they went and had a word with my wife, gave her my sick … They were just – between them and diabetic and the cardiac nurse I can't have any complaints at all.	coming through afine so I think reassurance through them helped me a lot as well. **Researcher: So talking to the nurses helped with reassurance, mmm that's good, mmm so can I ask you now, please could you tell me what kind of things you have felt yourself thinking about since you've had your percutaneous Intervention –so the stents – what kind of things have you found yourself thinking about since then.** P1 - At the start I was thinking I was scared, I must admit at the start I was scared yeh, I was scared would I only have a month to live or maybe two months to live eh how would my family cope that was my first initial reactions as well. (pause) I seemed to get through that with time and the more I went on I seemed to think yes I have survived I 'm kind a getting better just now I've not had any scares at all BP's been fine blood tests have been fine so I'm on the way to making this recovery. I went to see the nurse and I was referred because of my, just because of my blood tests I was deemed possibly to be diabetic. Eh…. that kind of affected me as well because I thought I can't ever be diabetic why should I be any form of diabetic and I thought God I'd have to be taking a jag or watching my food for my lifetime and she waited about three months to see how I would cope because its some sort of heart survey just now it seems to give you diabetes if you've had a heart attack eh… so she waited and waited and then said yes I think you are going to be classified as diabetic, she was actually told of this - some other party said she'd actually waited too long I should have been deemed as diabetic before that but she was just going three months because I was kind of on the border line I was close to the - I was not not so much close but I was coming down a lot. And she was waiting I think to see if I had reached this certain limit. I didn't. I think that freaked me out a bit more as well diabetics didnae – it didnae really appeal to me at all for some reason, so I've been put on pills and all sorts of courses	Gp offers some support but not comprehensively - only reassured through carrying out tests but health professionals are only seen as a support if they can offer reassurance by way of physical tests
folk tend to look upon you now as not kind of fully fit…. once I did return to work they were trying	**Researcher: See the fear that you had with regard to the diabetes, with the emotions that you were explaining there – what helped you? Is there anything specific that helped you.** P1 - I wouldn't say anything at all helped me just trying to be in my mind just to try to get on	

to give me nice and easy jobs…
but I need to get back into life again

so its good going back into work….
I suppose it built up my strength and also confidence in actually meeting people again

I was a bit shy meeting people again…..
put on a kind of brave face then just chat away…

I was awfy content with actually talking about what had happened….
just hoping talking about what has happened to me will help maybe someone else understand it

with life I don't think there was anything there that I could say gave me a hand … a lot of support though you did get a lot of support through your local surgery once I was actually, once I was actually told I had that I was given an eye test within about three weeks I was given a foot test I don't know what they call it but they kind of test your sense in your feet I passed that was okay and then I was put for a diabetic course as well a kind of health training course up at Lynebank eh I didn't enjoy that I didn't think it was I didn't think, to be fair it was awfy good that but everything else they've done they've made it awfy clear and precise and been awfy good.

Researcher: Why didn't you enjoy it?

P1 - It was too halves it was split into two halves and I think each half was the same it wasn't any different one was by a maybe a kind of nurse there and the other half was a health visitor type girl came in and she rough – it was just all about the same of thing they said and I thought it was not very good at all but apart from that I can't honestly fault them at all they've been excellent they've been looking after you well and I've got to go back and make more kind of GP appointments just now to get blood tests done that's me coming up to the year so I've to get all sorts of blood tests done then once I've done that I've to make an appointment in a further week's time to get any results to allow the results to come through and I hope that will also deal with your heart as well.

Researcher: See when you said that the GP service has been a support, in what way do you feel they've helped apart from what you've said already.

P1 - I think they've just actually - they've actually been there when you've went to see your doctor herself she's went through it with you, she's answered any questions I've had they couldn't answer one or two questions because they just kind of just had a look at me and said you're kidding me on but I said to them no, but they've always been able to assist you to get signed off work – I know that's the aim of the game but signed off work and they didn't allow me return until I'd seen my consultant again so I'd seen my consultant about three months later and he said yes your now fit enough please return to go to work again. So even my then I

Initial return to work made him feel weak but it helped him gain
confidence and prove to myself and others that I am gaining normality

Initially when facing others he role plays his emotions to hide his lost confidence

Talking about his experience gives him a sense of purpose and gives him back some control

what did help though was going up to Queen Margaret….. because it showed me that I could still move my arms and swing my legs… I said yes you are, you are getting better you can do weights I'm 57 just now I personally feel about 48…. I don't actually run across the road just now because I'm scared to do it…. scared something happened to me but I'm over that a bit now.. I feel fine, I don't feel perfect… working in the gym etc did help me a lot, I've	was allowed to be signed off and upon his…. return to work but they were always there even when I was first signed off when I first had the operation they said they didn't need to see me at all they just gave you an automatic sick line certificate without you coming in then so they went and had a word with my wife, gave her my sick line then I made an appointment three weeks later or so then I went into see them every four or five weeks or so. They were just – between them and diabetic and the cardiac nurse I can't have any complaints at all. **Researcher: What have you found most difficult or challenging since you had your, your mm treatment, your stents?** P1 Do you mean physical wise or just **Researcher: More to do with how you feel how mm – regard to you know – how you feel about it all anything you had, you found most difficult.** P1 - I think folk tend to look upon you now as not kind of fully fit and I know my work once I did return to work they were trying to give me nice and easy jobs at the time and you were almost saying yes its nice giving me nice easy jobs but I need to get back into life again and start, mmm start in real work again even at that (pause) eh…. sorry I just lost my **Researcher: See the nice easy jobs and the easing back in – how did that make you feel?** P1 - It was good at a start it was good at the start just to get you back into the routine of actually being back to work because I had been off for four eh April about four months or so a long time being off the longest I've ever been off in my life eh so its good going back into work I was a bit tired once I returned home so I was working half days for the first week or so then working four and a half hours next week then six hours next week then back to full time seven hours the next week again. It just –you felt as if you'd just gone in did a wee bit of work then came out of it again but you are a wee bit tired the first week , a bit tired, I suppose it built up my strength and also confidence in actually meeting people again because you can meet an awful lot of people . So I suppose I was a bit shy meeting people again. **Researcher: How did that make you feel like being shy**	Cardiac rehab helped overcome the fear of mortality and gave me the strength and confidence to live Cardiac Rehab helped him feel younger than before able to do things to try things I have never done before the Fear of another event is holding me back but

not been actually runner at all and its once or twice I've just kind of half run across the road….

Gave me confidence, confidence to push myself a bit…

it –just all in the mind

exercise helped me…

doing weights pushing yourself a bit and your starting to feel a bit better….

really enjoy it and I feel as if I'm doing stuff that I would never ever have done – never ever done before in my life. ..

Mentally, I don't know I just feel as if you can cope ….

you've always got a nurse there as well and your also checking your blood pressure at the start and once you leave. Blood pressure appears to be fine each week and its just , just knowing that you can do that…

you've got back up in case something goes wrong… you've got someone there who is kind of trained to spot certain signs and they'll know, they'll know whether to call an ambulance or not

will I have X amount of years left ..

I would always love if they could put a wee kind of camera d in and see how its all

P1 - Meeting people again? Meeting people again I just felt I had to go in and say Hi I'm back etc., put on a kind of brave face then just chat away. Folk were really wanting to have a word with you about what had happened and I was quite fine with that. Strange as it seems I was awfy content with actually talking about what had happened etc.

Researcher: See when you are talking about it – how does that help?

P1 - It just, I can't say it does help but its not, its not a hindrance. I feel as if I am actually talking , gonnae talk about it I just feel i'm telling folk my life story now and I'm also in a way if you ever get a pain there(puts hand on chest) that's when you really start, really start to worry and just hoping talking about what has happened to me will help maybe someone else understand it

Researcher: Okay when you went back into work and you said you were phased back in can you just clarify how that made you feel being phased back in? How did that make you feel?

P1 - Eh I could see their point because they were awful scared that I would do something wrong once I was back at work and it would be them to blame for it my work to blame for it.

Researcher: What about you

P1 -At first I felt it was fine because when I was first back, in the first week I was getting back into the work routine (had a fit of coughing) just back into the work routine so I was doing small courts and reading I had two hundred e-mails and all that to read so I had loads of them to get through and they can take a long, long while back into the courts again trying to get your head round the courts because you've obviously forgotten stuff that's been, as your role changes as well. So I felt it was okay I was neither up nor down I could have said yeh gonna give me more work but I knew in my heart that strangely enough to say that I was probably safer doing this just now just going in at a slow gradual pace rather than going into the full at the start. What did help though I have to admit what did help though was going up to Queen Margaret, going up to Queen Margaret and doing the exercise class there. I was going to go to a wedding, I was scheduled to we were all scheduled to go to a wedding I think it was the 7th or 8th of May or so it was and I was still kind of moving slowly and we went to the

Cardiac rehab and exercise gave me the confidence to challenge me own boundaries

Cardaic Rehab offers reassurance a "comfort blanket"

Cardiac Rehab is a safety net to test your boundaries

going,, if its all working … I've just got to use all these blood tests that are being done just now and that should show up if there is any sort of problems …. writing out a will in case something does go wrong again.	exercise class I must have been only in it on one week or two weeks and even that gave me a help because it showed me that I could still move my arms and swing my legs and do small kind of exercises and stretches etc., and that helped me as well a lot just doing that small class it gave me – I said yes you are, you are getting better you can do weights you can do this, you can do that so that in itself helped me, a lot as well.	I am hypersensitive and experience feelings of anxiety because I cannot see the disease inside I gain reassurance from all tests
	Researcher: Okay that's good so mmm I was going to ask you next quick question –it leads just on to what you were saying there - how has your diagnosis affected your day to day activities?	
but if you've got something wrong with your heart the only time you'll know its not really working right is when you probably have a heart attack… it would be great if you could have all that done but I don't suppose we can because of the cost of all that.	P1 - Day to day hasn't done much at all I've eh, only really I've been doing is taking a good note of how many paces I walk now each day I try and see if I've done I usually do about four, about four to five thousand without even trying now but day to day I've cut out certain things mainly full sugar I've cut out so I've went on to slim sugar or what do call it or food wise its been cut back a bit I've not been into as many chocolate biscuits as I would have. But day to day wise bit of walking, try to walk down to my work once or twice maybe a month or so as well apart from that nothing much is going at all	I am very aware of my mortality makes him anxious about needing to see inside himself
cardiac nurse… if you had any wee twinges talking it over with her then she would take all sorts of blood tests … just knowing that she's actually done a check reassures you. I was trying to look ahead	**Researcher: Can I ask how has your age or any other condition because you mentioned your diabetes, how has your age or any other condition affected how you feel?** P1 - My age hasn't really affect, hasn't really affected it at all I don't, I think, I'm 57 just now I personally feel about 48 or so I don't really feel that age at all. I can mind saying to the, to the consultant is anything you are not doing now that – he went and we had a wee laugh and I said yes I don't actually run across the road just now because I'm scared to do it – you know if you are just standing at the side and a bus is coming you run across the road a wee sprint, I was always waiting for the bus to pass me I was scared to do it in case I – scared something happened to me but I'm over that a bit now. I feel fine, I don't feel perfect but I feel … **Researcher: See when you say I'm over that, what did you do to get over that feeling?** P1 - I think it was more working in the gym etc did help me a lot, I've not been actually runner	The cardiac Nurse seen as a support to reduce anxiety by way ability offer reassurance from physical tests

at all and its once or twice I’ve just kind of half run across the road that’s all and just got over it just like that

Researcher: And why has the gym helped you?

P1 - Gave me confidence, confidence to push myself a bit and said to …… eh once I was doing the eh how you would have the smaller gym up at Queen Margaret that in itself those were small ones just a wee kind of rotation thing you do it gave me confidence to go to the actual wedding itself, walk around as well, I was walking around shops etc., for my wife because she was actually trying to find stuff for the wedding so we were out there having a wee walk and walking round the shops and it –just all in the mind exercise helped me. I’m trying to put it into words but it just gave me you are going up you’re doing stuff to - stuff to keep fit your doing weights pushing yourself a bit and your starting to feel a bit better as well.

Researcher: Okay

P1 - Then when I came to this gym as well that even helped me more as well because that - never done some of the things in my life before and quite enjoy it, really enjoy it and I feel as if I’m doing stuff that I would never ever have done – never ever done before in my life. And I’m getting through them reasonable and I think its showing its really working well for me just now .

Researcher: And why do you think it helps? When your saying it gives you confidence, why?

P1 - Mentally, I don’t know I just feel as if you can cope, you can cope with this, you can cope with the weights you can cope with walking really fast on the mills, the treadmill, and it just, and you’ve always got a nurse there as well and your also checking your blood pressure at the start and once you leave. Blood pressure appears to be fine each week and its just , just knowing that you can do that.

One in a million type person ….
I’ve got four veins coming into my heart ..
surely that would make much more chances, much more chances of staying alive probably not …

Researcher: And the knowing that the nurse is there how does that help?

P1 - Eh you’ve got back up in case something goes wrong, I don’t know what’s in her bag if its any wee but at least if she knows that something’s going on then you’ve got someone there who is kind of trained to spot certain signs and they’ll know, they’ll know whether to call an ambulance or not – just really a comfort blanket I suppose.

Misunderstood information leads him to think he is different and increases anxiety around the future

maybe in about ten years time or so I'll be starting to think how long do these stents take…
do you need to replace them

how long have I got now so that's why we're thinking about doing a will just now…
I suppose I feel as if I'm still a bit too young to die, far too young to die

It wouldn't help me it would help kinda family that's all

I have an uncle who is 95….

Researcher: So, quite rightly so, and on the back of that how do you feel about the future with your diagnosis?

P1 - Generally I feel I'll be fine but today though I was sitting in court and I was having it wasn't a pain but it was kind of, it was really a sensation I was getting down this side I wasn't sure if it was the way I was sitting in court or something I'd been doing at the weekend but I couldn't think of anything weird I was doing at all but you do tend to think a lot of what's going to happen will I have X amount of years left or so and I would always love if they could put a wee kind of camera d in and see how its all going,, if its all working perfectly but since they can't do that I've just got to use all these blood tests that are being done just now and that should show up if there is any sort of problems at all. Working in my job as well we deal with all sorts of covenant estates where folk have died and I'm thinking its bringing to my mind doing a will etc., writing out a will in case something does go wrong again.

Researcher: How when you explained there , so, how do these things about the future and what you are saying about the camera and I wish I could put a camera in to see, how would that help you?

P1 - Just in your mind because you can get an x-ray to check a broken bone then you know its been cleared etc., and you know your arm's working fine etc., but if you've got something wrong with your heart the only time you'll know its not really working right is when you probably have a heart attack again its just a comfort to know its all working great etc., If ,when you had a check up ultra sound again etc., all of that sort of thing going on it would be great if you could have all that done but I don't suppose we can because of the cost of all that.

Researcher: Can I ask you what information do you feel has been most beneficial in helping you deal with your emotions since you've had your treatment, your stents?

P1 – Oh(pause)

Researcher: What information, do you feel, has been most beneficial in helping deal with your emotions

P1 – (long pause)….I think when as I say the cardiac nurse came out just having a word with her about what you felt how you had been

Awareness of early mortality leads to planning for others feeling during the week if you had any wee twinges talking it over with her then she would take all sorts of blood tests , send them away, check your blood pressure then she would give you a phone about a day later to say it was all fine. I think just knowing that she's actually done a check reassures you.

Researcher: How does that – when you say that it reassures you how does that help?

P1 - It I didn't put it out my mind as such I wasn't always sitting there thinking God I'm going to die or so or could be ill again in another couple of weeks time I just rather than being awfy pessimistlc I was trying to look ahead and look on the bright side knowing that I seemed to be recovering as I said I didn't feel as if something serious was going to happen to me at all and I've always had that feeling as well. I can't say that I've always felt down maybe in the first couple of days once I came home I did feel a bit down as I said I did have a funny feeling I thought that's me for the night I wouldn't survive that night.

Researcher: So what did you do to help yourself how did you get

P1 - I didn't I just said when you go to sleep here if you waken up that's fine if I don't I wouldn't know about it. I know it seems stupid but I just said well and I think for the first couple of nights once I was home I'm awake that's good then ever since then I've never really thought about that again.

Researcher: Okay That's good I think we have covered all of the main points that have been asked here is there anything else you would want to say

P1 - There was something cropped up at the top of my mind but I can't honestly recall it now. I can't honestly praise NHS staff more than enough its been great. Even from the start, the start was a bit slow but even from the start I was taken we called NHS24 my wife was having a word with them they were checking is he doing this, is he doing that I was just upstairs off and on to the toilet walking around upstairs because of the pain I just couldn't settle at all I kept saying to myself no I'm fine its just wind, its just wind after a while she, they arranged for someone to come out to us so they came out from Sauchie, I think it was Sauchie and by the time they were starting I was thinking yes I'm glad there is something going on here. They seemed to, they were just ordinary journeys there was not any blue lights or anything straightforward journey to me, checked me out took me into the Vic It was just a slow journey as well they were just giving me a pill aspirin, aspirin I think it was, I think taking me to the Vic and that's when it all seemed to escalate. But ever since then I was in the Royal for a day transferred to the Vic then in the Vic for a day then home Wednesday 48 hours later. Went awfy quick but I can't , I can't, I can't honestly fault them they saved my life. Thing I always found a bit strange I was told I'd a it wasI think you get three veins into your heart I'm not sure if that's right but I think there's mainly three veins it was a fourth vein in mine that was blocked so I thought that's a bit strange fourth vein , fourth vein of mine fourth vein is your kind of odd vein out why are the other three not working perfectly well but I suppose if there's blood clots in one vein. So I found that out once we seen the actual consultant himself and but apart from that its been great.

Researcher: And see finding that fourth one how did that make you feel?

P1 - One in a million type person. I went, oh I've got four veins coming into my heart they'll date me. No I didn't know, I didn't know what it meant I thought well when I get when I first heard that I thought surely that would make much more chances, much more chances of staying alive probably not. They've put in three stents just now maybe in about ten years time or so I'll be starting to think how long do these stents take to, are they there for life or do you need to replace them again but at this present time I feel fine. eh

Researcher: How does that make you feel about thinking like that?

P1 - I think at my age 57 coming on 58 your thinking how eh, how long have I got now so that's why we're thinking about doing a will just now. And eh

Researcher: How would that help?

P1 - It wouldn't help me it would help kinda family that's all, that's all but I suppose I feel as if I'm still a bit too young to die, far too young to die eh

Researcher: What helps with that thought?

P1 - Ah Maybe its just the way that I feel I don’t feel my age 57, 58 I should be, I should retire in about couple of years time I’ve done my forty years in the courts about 39 years in the Civil Service just now I could retire feasibly retire in a year’s time. I feel as if I’m too young to retire because it’s a long way between that and your old age pension , state pension and that’s I don’t know if I’ve got enough money for that so I feel as if I’m going to have to work four or five years more but I just feel young strange as it may be I just don’t, I just don’t feel my age. Never felt my age at all. I have an uncle who is 95 as well 97 I think he is now actually.

Researcher: Okay I have to thank you for the information wou’ve shared with me It’s an enormous amount of information so I want to thank you and thank you for your time for this interview.

Appendix 16 Thematic Analysis

Thematic Analysis

Aim – To understand the lived experience of how CHD patients feel they obtain emotional support post PCI

- Explore participants emotions after percutaneous coronary intervention
- Explore how certain factors such as age, gender, the presence of comorbidities and social circumstances affect emotions post PCI
- Understand participants views about what type of information is most effective in improving emotions

P1 James	P2 Peter	P3 David	P4 Sarah	P5 Jane	P6 Mark	P7 Frank
The experience of denial - This can't be happening to me His thoughts and actions are as a result of fear of mortality His inability to retain information is related to the	After the initial shock I felt embarrassed that I have an old persons disease and guilty that I contributed to this event which has resulted in imposing upon others Shock impairs ability to absorb information	The PCI procedure helped me progress from shock into the realisation of what had happened I am still in shock and detached from reality Feeling in limbo an unfamiliar space within my life	Shock and disbelief turned to reality upon news of possible triple bypass Stents viewed as temporary solution compared to triple by pass Shock and disbelief leads sadness and	Shocked and Struggling to accept that the physical body has failed again "fall to bits"!!! The fatigue from cancer treatment caused increased stress which was relieved by talking over feelings with a	Fear of the unknown was controlled by knowing others shared similar experience and were perceived as fine Fear of treatment due to lack of information was reduced once	Loss of who I thought I was causes confusion and shock Timeline procedures for elective transfer from Fife to Edinburgh cause feelings of frustration and

experience shock and fear Kindness and empathy helps reduce his anxiety The physical pain is dominating and results in anger because they are not addressing his physical needs Nurses are merely doing their job with Kindness but this offers him reassurance Having Someone else to deal with friends and family leaves him to	Advice given by doctor offers reassurance of being fixed but isn’t seen as information to prevent it happening again Nurse is seen as given the most useful information which offers relief and a lifeline of how to help myself as well as reassurance regarding expectations Limited time with professionals but invaluable information offers relief Initial lack of information leads to	Nurse offers reassurance of future expectations Disbelief that I survived physical tests carried out by Nurse help reassure inside of body is functioning well PCI treatment is the holy grail of support because it can delay mortality I am in denial of the heart attack and cannot accept its true making me feel deceitful	inability to trust doctors and own body so need assurance from physical test of angio to give me answers Feeling judged by others that it was my fault resulted in feelings of isolation and social withdrawal Disappointment that PCI hasn’t lived up to my expectations of fixing me Ashamed and isolated	work counsellor which enabled the creation of thinking space No emotional information only procedural information PCI not a fix Fear from haematoma was helped by GP checks and reassurance Reassurance from some else’s experience that PCI treatment nothing to get anxious about	introduced to heart manual The waiting game for treatment causes frustration And The process of referral for elective PCI between Fife and Edinburgh causes breakdown in communication and leaved patient with feelings of abandonment and confusion I still have the disease Information in heart manual hasn’t reduced fear due to	reinforce negative emotions of guilt and embarrassment related to self and stereotype of CHD Am I the same as a 70 year old? Inaccurate information from similar others and lack of reassurance from loved ones leads to fear and feeling alone Belief in expertise of doctor and treatment as a fix is used as a coping strategy for fear and anxiety

concentrate on himself and this gives him comfort in knowing he is looked after He enjoys the timely observations and attention of the nurses because this helps reassure him of being cared for but When attention from nurses is not timely negative emotions of anxiety rise The heart attack wounds him but the stents contribute to his feelings of joy/ euphoria/relief – he feels like he is a	fear and inability to absorb new knowledge. This silence leads to inability to be truthful about emotions when talking to loved ones Doctor is seen as someone who saved my life but not someone who can help with my emotions Feelings of weakness and shame in the presence of others Feelings of self-reproach that others have to deal with my failings	“The Haynes Manua”l for the heart (Heart Manual) offers reassurance through non-technical lifestyle and genetic advice and includes timelines for recovery Frustrated by the restrictions placed upon him lead him to be defiant in an attempt to prove himself and avoid feelings of weakness Returning to work helps achieve feelings of normality	Husbands work commitments contributed to feeling abandonment and isolation Feeling powerless and unable to take control Shock has left me feeling lost and needing to find myself Trying to take control leads to taking drastic action but this leaves feelings of stress and anxiety Disappointed that the PCI couldn’t cure me	Guilt related to letting work colleagues down Sadness related to feeling that time is running out - I have the disease of old age too soon Not knowing birth parents leads to anxiety mortality Uses mindful practise to live in the moment deals with anxiety Anxiety around mistrust of PCI leads to using Cardiac Rehab	worry of the unknown Controlling fear and worry is improved by comparing self to others who have similar experience Telling my story is helping me feel good talking aloud helps me talking my way out of my negative emotions Anxiety around disease diagnosis is trying to be helped by way of a coping strategy	Shocked and stunned by realisation that past actions has left me with a disease I must control through lifestyle change His reaction to shame and embarrassment of diagnosis leads him to withdraw from social circles Others reaction of upset reinforces sadness within self but social media pressure accelerates facing the crowd

survivor so makes him feel strong. Fear and hypersensitivity leads to vulnerability without professional support The cardiac nurse offers an ear and the tried and tested advice which he believes is expert helps reassure him The physical tests offer a window to tell him his is fine and this reassures him Time helps heal the fears of mortality	Embarrassment held me back from being able to do the do the right thing by people And adopting avoidance strategies helps to protect myself from their reaction and enables me cope with talking to others I am hypersensitive to feelings inside my body and Cardiac rehab allows me test my physical body which reassures my mind and gives me hope for the future Exercise helps me cope with stress	Nurses offer reassurance and practical advice Cardiac Rehab helps in gaining confidence and provides reassurance that inside of body is able to function without consequences Frustrations are leading him to comparisons of self and using fitness as a focus of self-evaluation and assess where he is	Stress results in experiencing angina and coping strategies for pain such as GTN and rest leads to feelings of embarrassment and more stress I am not an invalid Work relationships support lifestyle change and help build my confidence to tackle feelings of guilt around weight issues thus I am proving to others that I have the strength to take control	being viewed as a safety net to test physical body Heart Manual and BHF leaflets provide information about disease expectations Stress caused by medication side effects conflicting with risk factor goals Feelings of guilt related to past actions being the cause of CHD Cardiac rehab helps gain control of the	I am not weak, I will not be defined by my condition I am walking proof to others that I am in control of my emotions Is this social self a cover up for what I really feel about myself Reassured from having spouse support but reminder of disease restrictions Guilt of past actions has lead to treatment being seen as buying time	I don't want to feel vulnerable and helpless Scared of another event provokes hypersensitivity information from leaflets and heart manual helps provide a control strategy to reduce anxiety Cardiac Nurse provides reassurance of information in heart manual and leaflet Loss of Identity -

Physical tests offer reassure for what cannot be seen Diabetes induced fear and panic at the thought of another restriction on my life Suggests resilience and acceptance of the condition Information is repetitive and now good quality Gp offers practical some support but not comprehensively -	lifestyle changes helps me focus on staying alive but life events such as separation challenge my focus Lifestyle change proves I am trying to help myself and Relieves the guilt I feel in relation to others Talking to others who share a similar experience helps improve self esteem Lifestyle change is my evidence for taking responsibility and making amends Lifestyle change may reverse this disease and buy some time	he doesn't trust his body because the body doesn't show on the outside whats going on in the inside I used to be fit Shocked that I have a terminal diagnosis and age offers no protection from this disease. It's a "ticking time bomb" and there is nothing I can do to prevent it happening again Life has been cut short and time is precious so nothing	The experience has shaken me into taking action to change my ways Ashamed that I have the disease of an older person I am lucky to be alive but because I am not cured I believe I am going to die young Cardiac Nurse made herself available to hear me anytime, giving me information and reducing the stress of health related procedures	guilt by way of improving self confidence in own ability Anger and guilt around feeling time is running out due to my previous actions Friends provide opportunity to talk which improves mood and provides reassurance of being cared Exercise is a way of coping with fatigue related to cancer diagnosis	- I have been given a second chance, "it was detected early " so I have time to correct my previous self. New self identity is wanting to be seen as fit so No emotional support Spouse and family support provide reassurance from talking and feelings of normality Cardaic Rehab is seen as exercise class to support lifestyle change	CHD indicates a person who is weak and I am fit and not weak Cardaic Rehab helps reduce anxiety related to self and helps give him a goal and strategy to take back control of identity towards normal No sick pay and financial circumsntances lead to feelings of not ready for normal duties but forced into having to work before body was ready

only reassured through carrying out tests but health professionals are only seen as a support if they can offer reassurance by way of physical tests Initial return to work made him feel weak but it helped him gain confidence and prove to myself and others that I am gaining normality Initially when facing others he role plays his emotions to hide his lost confidence	Talking to others in a similar situation provides reassurance and hope for the future Timelines and expectations of recovery help to alleviate feelings of mortality Cardaic Rehab provides reassurance of the physical body is working functionally without consequences Going back to work helps achieve normality and take	is going to stop me living in the moment The heart manual provides confidence from knowledge gained Cardiac Rehab helps reduce feelings of isolation and offers opportunity to see and speak with similar others reducing anxiety through reassurance of similar experiences but Comparing self to similar others leads	Cardaic Rehab reduces my negative thoughts around mortality and reassures me that I can move more All information has been around expectations of recovery but no emotional support resulting in me not dealing with my emotions. As a consequence I am frightened and have irrational thoughts such as believing I am going to die and putting pressure on my marriage	BHF information helps with take control of disease progression by way of lifestyle change Cardiac Rehab exercise offers a positive coping mechanism to move forward from the emotions of guilt related to the past		Shocked that I have the disease of an older person Wife helps reassure positive thoughts to reduce anxiety around future Fear of symptoms of Disease is causing caution around daily living activities Uses GTN offers reassurance for symptom control Fear of early mortality is due to his thoughts around

Talking about his experience gives him a sense of purpose and gives him back some control Cardiac rehab helped overcome the fear of mortality and gave me the strength and confidence to live Cardiac Rehab helped him feel younger than before able to do things to try things I have never done before the Fear of another event is holding me back but	some control of emotions Cardiac rehab gave me confidence in my physical ability	me to believe I am more vulnerable as I have had a more serious experience Heart Manual enabled me to compare myself against the norms for procedural timelines and confirmed to me I was in a bad way and it was serious for me The procedure of PCI generates fear of death through lack of control and having to put your life into their hands. Lack of support from staff leads to	Cardiac emotions share similarities with cancer emotions and talking to a friend who shares a similar experience helps solve irrational thoughts. Fear surrounding how long will stents last Feeling alone causes stress and worry and a compassionate Cardiac Nurse offers reassurances reducing these emotions and			not being fixed and he is worrying about the future now so suppresses these thoughts in order to cope Heart manual and fear of future event helps him focus on lifestyle change which leads to him having a goal in order to take back control of his life Heart Manual gives him understanding of impact of anxiety and depression but he needs the reassurance from the two HADS tests

Cardiac rehab and exercise gave me the confidence to challenge me own boundaries Cardaic Rehab offers reassurance a “comfort blanket” Cardiac Rehab is a safety net to test your boundaries I am hypersensitive and experience feelings of anxiety because I cannot see the disease inside I gain reassurance from all tests		feelings of isolation and dependency upon belief in doctor’s expertise.	helping towards normality			to confirm he is doing well He still has anxiety around hypersensitivity but has a coping strategy of talking his way out of these thoughts to reduce the anxiety

I am very aware of my mortality makes him anxious about needing to see inside himself The cardiac Nurse seen as a support to reduce anxiety by way ability offer reassurance from physical tests Misunderstood information leads him to think he is different and increases anxiety around the future Awareness of early mortality leads to planning for others						

Themes around PCI is not a fix

P. 1 Physical tests offer reassurance for what cannot be seen inside		

P1 I am hypersensitive and experience feelings of anxiety because I cannot see the disease inside I gain reassurance from all tests P1 I am very aware of my mortality makes him anxious about needing to see inside himself P2 I am hypersensitive to feelings inside my body and Cardiac rehab allows me test my physical body which reassures my mind and gives me hope for the future P3 physical tests carried out by Nurse help reassure inside of body is functioning well P3 Cardiac Rehab helps in gaining confidence and provides reassurance that inside of body is able to function without consequences P7 Scared of another event provokes hypersensitivity	Needing to see inside the physical body	

P2 Advice given by doctor offers reassurance of being fixed but isn't seen as information to prevent it happening again P2 Lifestyle change may reverse this disease and buy some time P4 Disappointment that PCI hasn't lived up to my expectations of fixing me P4 Stents viewed as temporary solution compared to triple by pass Disappointed that the PCI couldn't cure me P4 Fear surrounding how long will stents last P5 PCI not a fix P5 Sadness related to feeling that time is running out - I have the disease of old age too soon P6 I still have the disease P7 Shocked and stunned by realisation that past actions has left me with a disease I must control through lifestyle change	Stents are temporary and not a cure	PCI is not a fix

Themes around Loss of Identity

P 2 Feelings of weakness and shame in the presence of others P 2 Feelings of self-reproach that others have to deal with my failings P 2 adopting avoidance strategies helps to protect myself from their reaction and enables me cope with talking to others P3 Frustrated by the restrictions placed upon him lead him to be defiant in an attempt to prove himself and avoid feelings of weakness I used to be fit P 7 Loss of Identity - CHD indicates a person who is weak and I am fit and not weak	I am weak in the eyes of others	

P4 I am not an invalid P 6 I am not weak, I will not be defined by my condition P 7 I don’t want to feel vulnerable and helpless		Loss of identity
P2 After the initial shock I felt embarrassed that I have an old persons disease and guilty that I contributed to this event which has resulted in imposing upon others P3 Shocked that I have a terminal diagnosis and age offers no protection from this disease P4 Ashamed that I have the disease of an older person P 5 Sadness related to feeling that time is running out - I have the disease of old age too soon P 7 Shocked that I have the disease of an older person	I have the disease of old age	

P 4 Feeling judged by others that it was my fault resulted in feelings of isolation and social withdrawal P 4 Shock has left me feeling lost and needing to find myself Trying to take control leads to taking drastic action but this leaves feelings of stress and anxiety	Feeling lost	

Themes around Cardiac Rehab is a safety net

P1 Cardiac rehab and exercise gave me the confidence to challenge me own boundaries	I can test the boundaries of my physical body	

P 1 Cardaic Rehab offers reassurance a “comfort blanket P 1 Cardiac Rehab is a safety net to test your boundaries P1 The cardiac Nurse seen as a support to reduce anxiety by way ability offer reassurance from physical tests P 2 I am hypersensitive to feelings inside my body and Cardiac rehab allows me test my physical body which reassures my mind and gives me hope for the future P 2 Cardaic Rehab provides reassurance of the physical body is working functionally without consequences P 3 Cardiac Rehab helps in gaining confidence and provides reassurance that inside of body is able to function without consequences		

P 4 Cardaic Rehab reduces my negative thoughts around mortality and reassures me that I can move more P5 Anxiety around mistrust of PCI leads to using Cardiac Rehab being viewed as a safety net to test physical body		Cardiac Rehab is a safety net
P1 Cardiac rehab helped overcome the fear of mortality and gave me the strength and confidence to live P1 Cardiac Rehab helped him feel younger than before able to do things to try things I have never done before P 2 Exercise helps me cope with stress P 2 Cardiac rehab gave me confidence in my physical ability P5 Cardiac rehab helps gain control of the guilt by way of improving self confidence in own ability	Exercise gives me the confidence to take back control	

P5 Exercise is a way of coping with fatigue related to cancer diagnosis P5 Cardiac Rehab exercise offers a positive coping mechanism to move forward from the emotions of guilt related to the past P 6 Cardaic Rehab is seen as exercise class to support lifestyle change P7 Cardaic Rehab helps reduce anxiety related to self and helps give him a goal and strategy to take back control of identity towards normal		
P 2 Talking to others who share a similar experience helps improve self esteem P 2 Talking to others in a similar situation provides reassurance and hope for the future P 3 Comparing self to similar others leads me to believe I am more vulnerable as I have had a more serious experience	Talking to similar others offers reassurance	

P 3 Cardiac Rehab helps reduce feelings of isolation and offers opportunity to see and speak with similar others reducing anxiety through reassurance of similar experiences		

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