Keywords: Cardiac rehabilitation/ Psychological factors/Illness perceptions/ Revascularisation

This article has been double-blind peer reviewed

Barriers to attending cardiac rehabilitation

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Audits of cardiac rehabilitation in the UK have consistently found that the goals set out in the National Service Framework for Coronary Heart Disease are not being met. This review aimed to identify themes that influence whether patients attend cardiac rehabilitation services.

This article is the first in a two-part series. Part 2 reports the results of a research project looking at patients’ views of cardiac rehabilitation on the island of Guernsey, and is published on page 20.

Cardiac rehabilitation (CR) is an important component of risk-factor modification after acute myocardial infarction and coronary revascularisation (National Institute for Health and Care Excellence, 2007). In the UK, CR has four phases (Box 1).

The National Service Framework for Coronary Heart Disease (Department of Health, 2000) set targets, including targets on outcomes, around the provision of CR after an myocardial infarction (MI) and revascularisation. These include:

- 85% of eligible patients are referred for CR; eligible patients are those who have had coronary artery stenting or coronary bypass grafting.
- One year after their event, 50% of patients are non-smokers, take 30 minutes of exercise five days a week and have a body mass index of <30.

Audits of CR in the UK have consistently found that these goals are not being met. I reviewed the literature to identify potential predicting factors and barriers to non-attendance at CR to inform a study of our local CR programme. The search method is outlined in Box 2.

Findings

The importance of timely provision of CR, particularly in the immediate discharge period, has been highlighted (Hanssen et al, 2005). Dalal et al (2007) identified flexibility and individualisation as an important factor in meeting patients’ needs.

One study by Baigi et al (2009) suggested patients had specific preferences for the type of information provided in the CR setting and who provided the information. Non-attenders considered information about hypertension and sedentary lifestyle was the most important content for CR. Women preferred to discuss smoking issues with nurses while men preferred physicians.

Demographic factors

Lane et al (2001) found people were less likely to attend CR if they were female and lived alone. Their findings were in keeping with those of Dunlay et al (2009), who suggested that participation in CR was higher among men and also among younger people.

A large prospective study of 906 patients (586 men and 320 women) found that fewer women than men were referred...
for CR (Grace et al, 2002). Yohannes et al (2007) also found that women were more likely than men to drop out of CR. These findings suggest that gender could be an issue in referral and non-completion of CR. Evans et al (2011) identified that the number of women referred increased over a 14-year period and the mean age of patients rose over time.

However, three studies did not find a relationship between gender, age and participation in CR (Kerins et al, 2011; Jones et al, 2007; Farley et al, 2003). The results of these studies may be influenced by their smaller sample size, and all of them had more male than female participants. These findings were similar to those reported in a retrospective study of 450 patients by Weingarten et al (2011), who also found that gender did not affect enrolment in CR. Of the 286 CR attendees in Weingarten et al’s study, 62% were women.

A statistically significant link was found to exist between socioeconomic status and attendance at CR in a number of studies (Kerins et al, 2011; Worcester et al, 2004; Lane et al, 2001). All of the studies included in the review demonstrated that employment status, residence in a deprived area and access to transport were important predictors of attendance at CR. Patients were less likely to attend if they were unemployed or could not drive (Dunlay et al, 2009).

**Medical factors**

A number of studies have highlighted diagnosis, treatment and previous cardiac history as significant predictors for attendance at CR (Worcester et al, 2004; Gallagher et al, 2003). Non-attendance was more likely in patients who had:

- A severe MI;
- A history of MI;
- Angina;
- Not received thrombolysis (Dunlay et al, 2009).

Having attended CR before was identified as a predicting factor for non-attendance at CR sessions in Dunlay et al’s (2009) study, although the reasons for this were not reported.

Referral to CR while in hospital was cited in one study as a predicting factor for attendance (Dunlay et al, 2009).

Worcester et al (2004) found that men who had undergone percutaneous coronary intervention (PCI) were less likely to attend CR; they were also less likely to be referred, even though CR has been shown to reduce the incidence of re-stenosis and major cardiac events after PCI.

In another study, Lauck et al (2009) suggested that patients who had had a PCI might have a limited understanding of the chronicity of their condition, believing the intervention to be a cure. This could affect their beliefs about the importance of CR and subsequent enrolment in a programme.

**Comorbidities**

Pre-existing conditions, such as diabetes, as well as minor ailments, such as colds, also had a negative impact on attendance and completion of CR (Kerins et al, 2011; Jones et al, 2007).

**Health professionals’ role**

Two of the studies reviewed suggested the emphasis medical staff placed on attendance at CR was as important as that placed on the patient’s diagnosis (Sherwood et al, 2011; Grace et al, 2008).

One respondent in a study by Sherwood et al (2011) indicated her surgeon had told her she was cured. While this could not be verified, and generalisations could not be made because of the small nature of the study, the authors concluded that it was concerning and highlighted how health professionals could reinforce misconceptions about the nature and treatment of coronary heart disease.

**Psychological factors**

Psychosocial factors were found to be a significant risk factor for coronary heart disease in the INTERHEART Study (Yusuf et al, 2004). Participants who reported high levels of work stress, general stress, financial stress or permanent stress had a statistically significant increased risk of experiencing an acute MI. This is relevant because Grace et al (2002) found that psychosocial factors were a significant predictor of attendance at CR.

Raised levels of depression and anxiety have been associated with an impaired quality of life after a cardiac event and an increase in the risk of future events (Dickens et al, 2006). In the studies included in this review, depression was not found to be a predictor of attendance at CR. Grace et al (2002) found depression was not associated with participation in CR. Farley et al (2003) found a high rate of depression among patients in their study but also said it did not predict attendance at CR. They also found there was a statistically non-significant tendency for men with mild anxiety to attend. Grace et al (2002) found that anxiety was a statistically significant predictor of attendance. However, Kuhl et al (2009) linked anxiety to non-attendance at CR and poor adherence to secondary prevention measures after a cardiac event.

**Beliefs**

Beliefs about health or illness have been identified as factors influencing attendance or non-attendance at CR (Grace et al, 2008). These beliefs are affected by family, friends, culture, religion and experience and determine how patients make sense of and respond to symptoms and illness.

Work carried out with patients with angina by Furze et al (2005) found no statistically significant correlation between illness perceptions and attendance at CR, but the researchers identified a statistically significant relationship between illness perceptions and health-related quality of life at six months. The study did not look at attendance at cardiac rehabilitation but its findings are important because it highlights the long-term effect that negative illness perceptions can have on quality of life.

French et al (2006) found four
Patients may be reluctant to take part in CR as it reminds them of their heart condition.