

Secondary prevention of coronary heart disease: Patient beliefs and health-related behaviour

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Abstract

Objective: Coronary heart disease (CHD) is a leading cause of illness and death in Western society. The present study was designed to evaluate the utility of illness perceptions and medication beliefs in predicting secondary preventive behaviour among patients with CHD. An extended version of Leventhal's self-regulatory model (SRM) was used as a theoretical framework for this study [Leventhal H, Nerenz DR, Steele DJ. Illness perceptions and coping with health threat. In: Baum A, Taylor SE, Singer JE, editors. Handbook of psychology and health, Volume IV: social psychological aspects of health. Hillsdale (NJ): Erlbaum, 1984. pp. 219–52; Horne R, Weinman J. Self-regulation and self-management in asthma: exploring the role of illness perceptions and treatment beliefs in explaining non-adherence to preventer medication. Psychol Health 2002;17(1):17–32]. **Method:** Medical and demographic data were gathered from the medical charts of 1611 patients with established CHD from 35 randomly selected general practices. Self-report data about patients' lifestyles (diet, exercise, smoking,

alcohol consumption and medication adherence) and information on illness and medication beliefs were provided from postal questionnaire (1084 patients responded; 69% response rate). The relationship between patients' beliefs and their secondary preventive behaviour was examined using regression analyses. **Results:** Illness perceptions appeared to be only weak predictors of smoking, exercise, diet, alcohol consumption and medication adherence, accounting for about 2% of the variance in these behaviours. Medication beliefs were moderately related to medication adherence, accounting for about 7% of the variance in scores. A strong belief in the necessity of one's medication and a lower level of concern about one's medication were associated with higher levels of adherence. **Conclusions:** An illness perception approach did not prove helpful in predicting secondary preventive behaviour among this group of patients. However, beliefs about medications appear to be reasonable predictive of medication adherence.

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Introduction

Secondary prevention of heart disease involves the long-term management of risk factors among people who have been diagnosed with established coronary heart disease (CHD). It has been recommended as a key strategy for reducing levels of CHD (e.g., Ref. [3]). Secondary prevention can be achieved by stopping smoking, making healthier food choices (including reducing fat intake and increasing intake of fruit, vegetables and fibre), becoming

physically active, achieving an ideal weight, consuming alcohol in moderation, achieving blood pressure level at or under 140/90 mm Hg and achieving a total cholesterol level at or below 5 mmol [3]. Patients may also be required to adhere to a number of medications that help reduce blood pressure and blood cholesterol.

Previous studies of secondary prevention in general practice have identified sub-optimal levels [4–6]. While some secondary prevention intervention programmes have reported some successful outcomes [7,8], many studies have reported disappointing findings [9,10]. A review of the secondary prevention literature concluded that while drug prescribing and medical treatment have been improved, changing patient behaviour remains more challenging [11]. It has been suggested that the failure of some secondary

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prevention interventions to take account of patients' personal models or beliefs of their illness may account for their limited success in changing patients' lifestyles [12].

Health Psychology offers a number of models that seek to help us understand the factors that influence an individual's adherence to a medical regime, such as secondary prevention of CHD. One such model is Leventhal and colleagues' self-regulatory model (SRM), which suggests that cognitive factors, or "illness representations", influence a range of illness coping behaviours and outcomes among people experiencing illness or disease [1,13]. Leventhal and colleagues suggest that illness representations are structured around five components. These are beliefs about the nature (identity), likely time-course (timeline), personal impact (consequences), causal factors (cause) and amenability to control or cure (control/cure). Previous studies have shown that illness perceptions are important determinants of psychological well-being [14–18] and functional outcomes [14,19,20] among patients with chronic illness. Evidence has been provided recently to support this model; in a meta-analysis of 45 empirical studies in this area, support was found for theoretically predictable relations between illness perceptions, coping and outcomes among a wide range of illness types [21].

Studies also indicate that illness perceptions predict a number of health-related *behaviours* among patients with a chronic illness. For patients with diabetes, for example, research has indicated that patients who perceive their treatment as more important, perceive their condition as more serious and have higher perceptions of their own control of their illness are more likely to engage in the necessary self-care behaviours [22–24]. A stronger perception of illness identity and a stronger belief in the seriousness of the illness were associated with higher levels of self-management among patients with osteoarthritis [25,26].

For coronary patients, illness perceptions have been shown to be associated with a range of important behaviours. Research has shown that patients possess a cognitive schema for myocardial infarction symptoms; when patients experience symptoms congruent with this schema they are likely to seek help [27]. Patients were more likely to make the recommended behavioural changes after a myocardial infarction when lifestyle variables were perceived as a causal factor in the development of heart disease [28]. Attendance at cardiac rehabilitation has been shown to be more likely among patients who perceive their illness as controllable, serious and caused by lifestyle variables [14,29]. The bulk of research to date among coronary patients has examined the influence of illness perceptions in the acute phase of their illness, such as during or in the aftermath of a myocardial infarction, or immediately postsurgery. Illness perceptions among patients living with established heart disease in its chronic phase have not, to the authors' knowledge, been previously examined.

It has been suggested that the ability of the SRM to explain treatment adherence may be improved by the inclusion of treatment or medication beliefs into the model [30]. Treatment beliefs may be important determinants of secondary preventive behaviour, as medication adherence is a significant component of secondary preventive regimes for most patients with CHD. Research has shown that beliefs about medicine, perceptions about its necessity or concerns about side effects are related to medication adherence [30]. An extended version of the SRM (i.e., including treatment or medication beliefs into the model as well as illness beliefs) has been supported in a study in which illness perceptions and medication beliefs combined to prove predictive of nonadherence to preventer medication among a group of patients with asthma [2].

The aim of the current study was to describe the illness perceptions and beliefs about medication of a sample of patients with established CHD. The study was designed to evaluate the degree to which variations in reported secondary preventive behaviour (smoking, diet, exercise, alcohol consumption and medication adherence) among these patients could be explained by these two sets of beliefs. The study, involving 1084 patients, used postal questionnaire and data from patients' medical charts to obtain information on secondary preventive behaviour, illness perceptions and beliefs about medication. We hypothesised, in line with previous similar studies with other populations, that healthier secondary preventive behaviour (i.e., not smoking, eating a low-fat diet, exercising, consuming alcohol in moderation and adhering to medication) would be associated with stronger perceptions of control, a stronger belief in the seriousness of one's condition and a stronger belief in lifestyle as a cause of illness, as measured by the Illness Perceptions Questionnaire (IPQ). We also hypothesised that adherence to medication would be positively correlated with patients' specific-necessity beliefs and negatively correlated with specific-concern beliefs, general-overuse beliefs and general-harm beliefs on the Beliefs about Medication Questionnaire.

We believe that it is important to examine the relationship between beliefs and behaviours because, if maladaptive beliefs can be identified, and such beliefs are changeable through intervention [31,32], then it may be possible to inform the development of more effective secondary preventive programmes.

Method

Procedure

Patients were recruited from a stratified, random selection of 35 general practices in the west of Ireland. Lists of all general practices in two health board regions were obtained from the Health Board Primary Care Units. General practices on these lists were allocated a number by the

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