



The effect of a telephone follow-up intervention on illness perception and lifestyle after myocardial infarction in China: A randomized controlled trial



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ARTICLE INFO

Article history:

Received 25 March 2013

Received in revised form 27 September 2013

Accepted 11 October 2013

Keywords:

Illness perception

Lifestyle

Myocardial infarction

Randomized controlled trial

ABSTRACT

Background: Lifestyle modification is an integral component of cardiac secondary prevention, while it has been confirmed that myocardial infarction (MI) patients' health-related behaviors are heavily influenced by their illness perception.

Objectives: To evaluate the effect of a telephone follow-up intervention for improving MI patients' illness perception and lifestyle.

Design: A randomized controlled trial, longitudinal research design was employed.

Settings: Cardiac care units in four major general hospitals in Guangzhou, China.

Participants: Inclusion criteria were being diagnosed with an initial acute MI, being able to communicate orally in Mandarin or Cantonese and read in Chinese, and living in Guangzhou. Exclusion criteria were with continuing uncontrolled arrhythmias or heart failure, being illiterate, or with a history of major psychiatric illness, exercise-induced asthma, uncontrolled diabetes, or evidence of dementia.

Method: 124 patients admitted with the first acute MI were randomized to receive either routine care or routine care plus a telephone follow-up intervention, which consist of a pre-discharge education and three telephone follow-up instructions. Data were collected before discharge, at the 6th and the 12th week after discharge from hospital, respectively.

Results: At the 6th and the 12th week after discharge, patients in the intervention group had significantly positive perceptions about symptoms of MI (mean difference 3.27, 95% confidence interval 2.48–4.07, $p < .001$; mean difference 2.12, 95% confidence interval 1.34–2.89, $p < .001$ respectively) and how long their illness would last (mean difference –0.69, 95% confidence interval –0.91 to –0.47, $p < .001$; mean difference –0.74, 95% confidence interval –0.96 to –0.51, $p < .001$ respectively) compared with the control group. The intervention group also had more positive beliefs about the controllability ($F = 4.23$, $p = .04$) and more improved beliefs about the causes of MI than the control group. Moreover, the intervention improved the patients' nutrition ($F = 5.16$, $p = .03$) and physical activity at the 12-week follow-up (mean difference 0.37, 95% confidence interval 0.17–0.58, $p < .001$).

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Conclusion: This telephone follow-up intervention can result in improved illness perception and lifestyle after MI. It could be incorporated into current hospital treatment regimens for MI to improve patients' quality of life.

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What is already known about the topic?

- MI patients' health-related behaviors are heavily influenced by their illness perception.
- The effects of in-hospital interventions on MI patients' illness perception and outcome improvement have been confirmed.
- The short hospital stay after MI restricts the time available for in-hospital intervention in China.

What this paper adds

- This is the first trial to test a follow-up intervention based on Self-Regulation Theory among Chinese MI patients.
- The telephone follow-up intervention can improve MI patients' illness perception effectively.
- The telephone follow-up intervention can improve MI patients' lifestyle effectively.

1. Introduction

During the past two decades, the incidence of myocardial infarction (MI) has gradually increased owing to the development in the society and economy accompanied with a rapid pace of life in China (Huang et al., 2013). It has been reported that there are approximately 2,000,000 cases of MI in China (National Center for Cardiovascular Diseases, 2012). With improved diagnostic and therapeutic procedures in cardiovascular diseases, the mortality rate from MI has decreased significantly (O'Gara et al., 2013). Post-MI survivors, however, have to cope with symptoms, treatments and lifestyle changes, and the time after an acute MI has been indicated to be a vulnerable period both physically and emotionally (Daly et al., 2000; Mok et al., 2013).

The Self-Regulation Theory (Leventhal et al., 2001) proposes that in response to illness, people develop parallel cognitive and emotional illness perceptions. The two dimensions of the emotional illness perception are illness coherence and emotional representation (Chen et al., 2011), and the components of cognitive illness perception are the following: identity, timeline (including timeline acute/chronic and timeline cyclical), cause, consequences, and control (including personal control and treatment control) (McCabe and Barnason, 2012; Noureddine and Froelicher, 2013).

Lifestyle changes have been emphasized by the American Heart Association (O'Gara et al., 2013) and the European Society of Cardiology (Piepoli et al., 2010) as an integral component of cardiac secondary prevention. Meanwhile, the theoretical and empirical work has confirmed that MI patients' health-related behaviors are heavily influenced by their illness perception (French et al., 2005; Hagger and Orbell, 2003; Leventhal et al., 2008).

Causal dimension of illness perception is believed to influence the patients' decisions regarding following doctors' advice and performing health-related behaviors (Alm-Roijer et al., 2006; French et al., 2006; Weinman et al., 2000). Petrie et al. (1996) reported that only those individuals who attributed their MI(s) to faulty lifestyle showed significant improvement in diet and increased frequency of exercise 6 months after discharge. Moreover, those individuals who reported a greater perception of personal control over their treatment demonstrated a more positive adjustment to their illness through the performance of appropriate health-related behaviors (Bohachick et al., 2002; Lau-Walker et al., 2009). Similarly, improvement in personal control beliefs has been shown to promote positive behavioral outcomes within chronic illness populations (Clark and Dodge, 1999; Lorig et al., 1999). It has been reported that these links provide considerable potential for developing cognitively based interventions at the early stage after MI (McAndrew et al., 2008; Petrie et al., 2002). Thus, if an intervention can be instituted and implemented to foster more appropriate illness perception, then improved lifestyle could be expected.

While literature exists regarding the illness perception associated with MI, there have been very few randomized controlled trials investigating whether changing illness perception can improve patient outcomes (Broadbent et al., 2009; Petrie et al., 2002; O'Rourke and Hampson, 1999). Two of these trials designed in-hospital interventions and evaluated their effects in MI patients; they showed that these interventions can successfully improve MI patients' illness perception and exercise behavior (Broadbent et al., 2009; Petrie et al., 2002). Currently, in China, there is a movement toward shorter hospital stays after MI, which restricts the time available for hospital-based intervention or even discharge preparation; while Naylor (2002) stated that "4 to 6 weeks post discharge represents a critical period when many patients are at highest risk for poor discharge outcomes." Because of this critical period following MI, the implementation of home-based interventions for adequate aftercare should be emphasized. O'Rourke and Hampson (1999) compared the relative efficacy of two different rehabilitation programs (one with and one without the Edinburgh Heart Manual) among 70 MI patients after discharge, and found that the manual resulted in improved illness perception and less depression effectively. But in China, very few hospitals can provide cardiac rehabilitation program to MI patients after their discharge, and patients only can get some advices from doctors at the 2-weekly check-ups. Meanwhile, to our knowledge, the development of an individualized telephone intervention that attempts to improve Chinese MI patients' illness perception has not been reported in any previous studies. Furthermore,

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