



Effectiveness of a psychoeducation program on the quality of life in patients with coronary heart disease: A clinical trial



Sina Valiee, PhD ^{a,b}, Narges Sadat Razavi, MD ^c, Mohammad Aghajani, MSN ^{d,*}, Zahra Bashiri, MSN ^e

^a Health and Care Research Center, Kurdistan University of Medical Sciences, Sanandaj 66177-13446, Iran

^b Social Determinants of Health Research Center, Kurdistan University of Medical Sciences 66177-13446, Sanandaj, Iran

^c Department of Cardiology, Faculty of Medicine, Kashan University of Medical Sciences, Faculty of Medicine, Kashan 87159-81151, Iran

^d Infectious Diseases Research Center, Department of Nursing and Midwifery, Kashan University of Medical Sciences, Kashan 87159-81151, Iran

^e Student Research Committee, Faculty of Nursing and Midwifery, Kashan University of Medical Sciences, Kashan, 87159-81151, Iran

ARTICLE INFO

Article history:

Received 23 March 2016

Revised 5 September 2016

Accepted 9 September 2016

Keywords:

Quality of life

Cognitive therapy

Coronary heart disease

Psychological education program

ABSTRACT

Aim: The present study was conducted to evaluate effectiveness of a psychoeducation program (PEP) on the quality of life in patients with coronary heart disease (CHD).

Background: CHD affects patients' quality of life. PEPs may be useful to help patients reach maximum functional health.

Methods: A pretest–posttest controlled clinical trial was conducted on a study population of 70 CHD patients, who were selected through convenience sampling and randomly allocated to either the intervention or the control group. The MacNew Quality of Life Questionnaire in heart disease was completed by participants twice: first as a pretest, and then in a follow-up posttest.

Results: After the intervention, the quality of life (QOL) score was 157.97 ± 25.51 in the intervention group and 105.03 ± 8.38 in the control group, making for a significant difference ($p < 0.05$).

Conclusion: Based on the findings, PEPs helped CHD patients improve their quality of life through reducing tension, relieving their negative emotions, and improving their social relationships.

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1. Introduction

Coronary heart disease (CHD) is one of three cardiovascular diseases that are associated with increased mortality and hospitalizations (Berndt et al., 2012). These disorders are responsible for more than 25% of all deaths worldwide (Cole, Smith, Hart, & Cupples, 2011). In the UK, for example, more than 90,000 people die from CHD each year (Kones, 2011). According to the World Health Organization, chronic disease causes 70% of deaths globally, with CHD ranking first (Siavoshi, Roshandel, Zareiyan, & Ettefagh, 2012).

The age at onset of cardiovascular disease in Iran is approximately 7–10 years earlier than in other countries (Khayyam-Nekouei, Neshatdoost, Yousefy, Sadeghi, & Manshaee, 2013). CHD's physical and psychosocial consequences not only increase the mortality rate but also considerably increase disability rates in a large portion of the country's workers during their best years of productivity, ultimately

reducing worker's economic productivity and increasing the cost of healthcare while decreasing quality of life (Sarhadi, Navidian, Harandy, & Moghadam, 2013; Sherme et al., 2009). There are many ways that CHD patients' quality of life may be affected, including symptoms of angina and heart failure, a limited exercise capacity, increased physical debility, and the psychological depression associated with chronic stress (Thompson & Yu, 2003).

The treatment of coronary artery disease is routinely medicinal and non-pharmacological. Non-pharmacological treatment for these patients involves removal of the underlying factors and lifestyle changes (Mohamadi, Ahmadi, Nematipour, & Faghihzadh, 2006). In recent years, alternative therapies have been employed, such as music therapy, relaxation, therapeutic massage, guided imagery (Mandel, Hanser, & Ryan, 2010; Rabito & Kaye, 2013), and psychological treatments that include cognitive–behavioral therapies, and psychoeducational programs (PEPs) (Chan, Yip, Tso, Cheng, & Tam, 2009). PEPs provide a fundamental treatment for patient's problems, and their methods include training interventions to induce changes in behavioral and cognitive patterns. PEPs are usually aimed at directing the patients' learning, providing opportunities for them to express their emotions in a safe environment, creating hope or strengthening it, offering solutions to enhance the patients' self-awareness, and providing opportunities for them to practice their new knowledge. PEPs can be

Financial Disclosure: The authors declare that they have no competing interests.

Funding/Support: This study was funded and supported by the Deputy of Research, Kashan University of Medical Sciences (KAUMS), Grant No: 9327.

* Corresponding author: Mohammad Aghajani: MSN, PhD Student in Nursing, Infectious Diseases Research Center, Department of Nursing and Midwifery, Kashan University of Medical Sciences, Kashan, Iran.

E-mail addresses: Aghajani_m@kaums.ac.ir, aghajani1362@yahoo.com (M. Aghajani).

used either with individuals, groups, or communities, targeting individuals in high-risk groups (Agren, Evangelista, Hjelm, & Stromberg, 2012; Morokuma et al., 2013; Paranthaman et al., 2010).

Several studies have investigated the effects of PEPs on the quality of life in patients with different disorders. For example, McGillion, Arthur, Victor, Watt-Watson & Cosman (2008); McGillion, Watt-Watson, et al. (2008) reported that PEPs improved physical function, general health, and self-care in the control and reduction of the angina pain of heart disease (McGillion, Watt-Watson, et al., 2008). They also suggested that psychological interventions with longer duration times performed better with these patients. In addition, Martina-Carrasco et al. (2009) studied the effect of PEPs on the quality of life of patients with Alzheimer's and their families, and they reported that the quality of life for both patients and their families increased after psychological training (Martina-Carrasco et al., 2009). In addition, Bagherian, Attaran, Keypor, Kheirabadi, and Maracy (2008) reported that PEP positively and significantly affected the quality of life in patients with COPD (Bagherian et al., 2008). However, some studies that used PEPs did not find any positive significant effects. For example, Lenz and Perkins (2000) reported that psychological interventions had no significant effects on the quality of life in patients with CHD (Lenz & Perkins, 2000). In addition, Tofighian, Najjar, Akabery, and Nakhaee (2009) reported that psychological individual counseling had no significant effect on the quality of life in patients with myocardial infarction (Tofighian et al., 2009). In a review of multiple studies, McGillion, Watt-Watson, Kim, and Yamada (2004) proposed that due to the heterogeneity of interventions approaches and the small sample sizes, stronger and larger studies were necessary to determine the effects of PEP training on improving life for angina patients (McGillion et al., 2004). In a recent systematic review of psychological interventions for CHD patients and their partners, Reid, Ski, and Thompson (2013) reported that the effects of psychological interventions for patients with CHD were inadequately studied, and the available studies were outdated, of poor overall quality, and overall showed a non-significant trend (Reid et al., 2013). Therefore, further studies in the field of psychological interventions for CHD patients are needed.

A majority of studies on PEPs were conducted on patients with psychiatric disorders, only being implemented in a limited fashion in patients with primarily medical disorders, particularly cardiovascular disease. However, healthcare providers, including physicians and nurses, have increasingly found that in addition to tending to the physical health of patients, it is necessary to pay more attention to their psychosocial needs to help them maintain normal lives (Dashtbozorgi, Ghadirian, Khajeddin, & Karami, 2009; Eker & Harkin, 2012). Therefore, indigenous forms of PEPs may be useful for patients with chronic disease, such as CHD, to help them reach maximum functional health (Taylor-Rodgers & Batterhamb, 2014).

2. Methods

2.1. Aim

This study evaluated the effects of a PEP intervention on the quality of life of CHD patients.

2.2. Research design

This randomized controlled trial was conducted using 70 patients with CHD who were hospitalized in the coronary care unit (CCU) at Shahid Beheshti Hospital in Kashan, Iran, in 2014. According to previous studies (Mohamadi et al., 2006; Taylor-Rodgers & Batterhamb, 2014), and based on the formulas, $\alpha = 0.95$; $1-\beta = 0.8$; and $d = 0.65$, the sample size was determined to be 35 patients in each group. The patients were recruited into the study gradually and based on convenience sampling. The subjects who met the inclusion criteria

were allocated into either the intervention or the control group through a randomized block sampling method.

2.3. Participants

The inclusion criteria consisted of people aged 21–65 years, with the ability to respond to inquiries and attend meetings, no history of angioplasty or coronary artery bypass grafting (CABG), an absence of brain disorders (such as Alzheimer's, stroke, or transient ischemic attacks), and the ability to read and write in the Persian language. The exclusion criteria were the occurrence of any acute or urgent medical or psychological problems, substance abuse or addictions, or other known cognitive, mental, or psychological disorders.

2.4. Intervention

In addition to routine medical care, the intervention group underwent eight group sessions of the PEP, two sessions per week at two-day intervals, with each session lasting for 45–60 min. The PEP is a specific behavioral therapeutic concept consisting of four elements: briefing the patients about their illness, problem-solving training, communication training, and self-assertiveness training. The content of the PEP intervention was adopted from previous studies (Amirian, Maslakhpak, Jalali, Khalkhali, & Salehi, 2013; D'Souza, Piskulic, & Sundram, 2010; Karamlou, Mazaheri, & Mottaghipour, 2010; McGillion, Arthur, et al., 2008), which included discussions and training on anxiety coping skills, with an emphasis on lifestyle changes, anger management, problem-solving, and muscular relaxation techniques, as presented in Box 1. All PEP sessions were facilitated by a trained nurse. At the end of each session, assignments were given to the participants to complete at home. Home assignments were based on each session's training topic. The PEP program consisted of topics including the following: using anxiety management (writing about an anxiety-provoking situation, using positive confrontation, modulating anxious thoughts, control breathing); using anger management (changing the environment, leaving the environment, how to deal with negative thoughts, problem-solving techniques, expressing anger adaptively); using problem-solving skills (defining and formulating the problem, finding multiple and different solutions, deciding on and selecting a solution, evaluating the effects and consequences of the solution, determining the effectiveness of the selected solution); dealing with depression (accepting unpleasant situations when they are out of one's control, strengthening personal relationships through social skills, assertiveness, and negotiation skills, understanding the situation and re-appraising any initial incorrect assessments, maintaining a sense of control, rewarding accomplishments, controlling negative thinking, focusing on positive thinking, effectively using their support systems); and relaxation training (creating a calm environment, being located in a comfortable position, focusing on a calming mental picture, having a positive attitude). The participants' experiences with the homework assignments were reviewed and discussed at the start of the next session, and the trained nurse supported the patients and offered feedback and suggestions on the past session. Then new materials were delivered.

Important factors affected program quality such as facilitation strategies, quality of delivery, and participant responsiveness. In this study, we implemented a simple but specific intervention, providing manuals, guidelines, training, monitoring, and feedback for those delivering the intervention (Carroll et al., 2007). During the intervention period, the investigator also conducted a 5–10 min weekly telephone call with each participant in the intervention group to track the home assignments, answer questions, and organize the sessions. In addition, the study questionnaire was re-answered by each participant in the intervention group after the eight PEP sessions.

Patients in the control group received routine medical care, plus a training pamphlet from the American Heart Association containing

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