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Activities of daily living for patients with chronic heart failure: a partnership care model evaluation

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ABSTRACT

Aim: The study determined the effect of a partnership care model (PCM) on the activities of daily living (ADL) of patients with chronic heart failure (CHF).
Background: Management programs for patients with CHF are needed to optimize care.
Methods: This randomized clinical trial was designed in 2011 in four wards at two Iranian hospital centers with the participation of 104 patients with CHF who had hospitalization histories. The Lawton questionnaire was used to measure the dependent variable (ADL) at baseline after 3 months.
Results: The mean difference (pre- and post-intervention) of the scores for the control (MD = 0.06; SD = 1.5) and experimental (MD = −2.3; SD = 1.4) groups were calculated. T-test results showed that there was a significant difference in the means ($p < 0.05$) between groups. The effect size (2.18) and standardized effect size (54.5) were also calculated.
Conclusion: The findings suggest that centered ADL intervention based on a PCM improved the ADL of patients substantially more than other interventions.

1. Introduction

Chronic heart failure (CHF) is a prevalent disease with an increasing trend (Barents, Boersma, van der Horst, Hillege, & de Jongste, 2011). This makes it a major problem for people who must live with it. It is also a social challenge to meet hospitalization expenses (Education IRoI-MoHM, 2007). CHF is a disabling progressive condition. Most patients with CHF are seniors who commonly require hospital care (Ekman et al., 2012).

2. Background

Studies indicate that hospitals tend to discharge patients with insufficient planning (Delgado, Suárez García, López Gaona, Gutiérrez Vara, & Solano Jaurrieta, 2012; Education IRoI-MoHM, 2007; Hekmatpou, Mohammadi, Ahmadi, & Arefi, 2010) for treatments that must be completed at home (Maloney & Weiss, 2008). Most patients have difficulty in activities of daily living (ADL); their quality of life (Barents et al., 2011; Bowling et al., 2012; Gallanagh et al., 2011; Spruit et al., 2011) and ability to carry out ADLs is limited (Norberg, Boman, & Lofgren, 2008). Studies also show that as many as 50% of readmissions could be prevented with effective patient education, comprehensive discharge plans and careful follow-up of patients (Roe-Prior, 2004).

Treatment of CHF is more complicated in seniors (Norberg et al., 2008). Although pharmacological therapy has improved the outcome for the disease markedly in the last 10–15 years, management programs are needed to optimize care (Ekman et al., 2012). Further study on the process of support and care for patients is required.

The most important aspect of optimizing management programs is the active and optimal participation of all individuals, especially patients, in the management of care (Ekman et al., 2012; Mohammadi, Abedi, & Ghofranipour, 2002). This has been recognized by the World Health Organization. The Institute of Medicine at the US National Academy of Sciences has called it person-centered care (PCC) and identified it as a core ingredient of quality care for the chronically ill (America, 2001; Epping-Jordan, Pruitt, Bengoa, & Wagner, 2004).

The need for participation is a principle theoretical approach that should be designed and applied as prescriptive models and programs. Mohammadi, Abedi and Ghofranipour (2002) designed the first model of this kind in 2002 and evaluated it as a partnership care model (PCM) for patients with hypertension (Mohammadi, Abedi, Ghofranipour, & Kazemnejad, 2006), and diabetes (Mohammadi, Rezapour, & Sistanehei, 2011).

This model is a nursing model to control chronic diseases by focusing on the characteristics of the patients and interactions between patients, nurses, and physicians for chronic disease control. Since humans are social beings and need to interact, partnerships increase involvement, motivation, and responsibility of the people in a group. This

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involvement encourages care assistants to help the group accept responsibility using group activities to attain goals.

The PCM is divided into four executive and operative stages:

1. Motivation: Patients are aware of side-effects of their disease and are given an impetus to encourage them to become actively involved in the process of controlling the disease.
2. Readying: After motivation, patients should be prepared to participate. Readying can be accomplished by planning and implementing educational partnership meetings.
3. Involvement: This needs continuous cooperation in all meetings by actively participation and patient compliance of the principles of self-care. These can be accomplished during follow-up partnership meetings.
4. Evaluation: Any system may need adjustment, so steps 1 to 3 can be developed by continuously evaluating them by observation during the periodic meetings (Mohammadi, Rezapour, et al., 2011).

This approach was evaluated by Ekman et al. (2012) for persons with CHF using mapping in three phases (initial, work, safeguarding or documentation). Mapping is a basis for designing PCC intervention. The intervention implemented the PCC systematically using evidence-based guidelines and clinical knowledge. The intervention was designed by a group of experienced staff nurses, physicians, physiotherapists, and occupational therapists, and representatives from a local patient association and research team. The PCC consisted of three steps:

1. Initiating the partnership: At admission, a comprehensive narrative is obtained from the patient.
2. Working the partnership: Patients were encouraged to be as active as possible.
3. Safeguarding the partnership (documentation): The PCC stipulates that decisions and assessments be documented throughout the care process in the assessment record (Ekman et al., 2012).

They emphasized that this was the first study to evaluate a structured PCC approach in patients hospitalized for cardiac care. The patients were enlisted in different forms or models in consideration of their beliefs, social and organizational conditions and based on inferences from the concept of partnership.

A review of the literature shows that most studies on persons with CHF are descriptive and analytically dedicated to the general status of the patient, disease complications, and effective factors on ADL (Bowling et al., 2012; Delgado et al., 2012; Gallanagh et al., 2011; Jalali & Hajian-Tilaki, 2006; Katra, Chakravarthy, & Libbus, 2011; Spruit et al., 2011; Tjam et al., 2012; Watson et al., 2011). Few studies have been conducted on intervention for improving the ADLs of persons with CHF (Abbasi, Fayyazi, Ahmadi, & Haghighizade, 2007; Barents et al., 2011; Borhani, Khoshab, Abbaszadeh, Rashidinejad, & Mohammadi, 2012; Bowling et al., 2012; Ekman et al., 2012; Sadeghi et al., 2009; Spruit et al., 2011).

The present study evaluated the PCC based on a PCM to improve the ADL of persons with CHF. Previous professional models have relied on originality and the role of professionals and self-care models have relied on originality and the role of patients. The proposed PCM relies on originality and the role of both patients and health care providers as interactive, defined and reasonable partners. The PCM is a process with related phases and a specific aim that have dynamic interrelations that include motivation, readying, involvement and evaluation (Fig. 1) (Mohammadi, Abedi, Ghofranipour and Kazemnejad, 2006). This model has been was tested on clients with hypertension (Mohammadi et al. 2006) and for depression and anxiety in persons with CHF (Khoshab et al., 2010), but not on the ADL of persons with CHF. The present study was designed to determine the effect size and effectiveness of PCM on the ADL of persons with CHF.

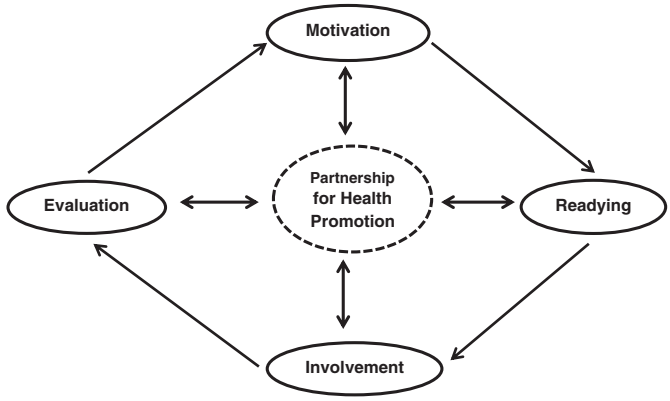

Fig. 1. Four executive and operative stages of partnership care model.

3. Methods

3.1. Design

The study was designed based on a PCM with a controlled pre- and post-test design. The control group comprised persons with CHF under treatment with standard care at two health centers. The PCM served as a basis for design of a care program and intervention. The care program was implemented in the intervention group and outcomes for both groups were evaluated before and after intervention. This randomized clinical trial was conducted from January to April 2012.

3.2. Participants

The research population comprised persons with CHF who were under treatment and had hospital records in one of four wards: CCU, post-CCU and general cardiac (2) in two teaching hospitals of Kerman University of Medical Sciences in Iran. The participants were randomly selected for either the control or allocation treatments. The sample size for each group was estimated to be 50 using the following measurements: effect size = 4, $\alpha = 0.05$, $B = 80\%$, ADL mean difference 1.9 (0.7) (Hekmatpou, Mohammadi, Ahmadi, & Arefi, 2009).

All subjects had a history of hospitalization for treatment with a diagnosis of CHF diagnosis based on the New York Heart Association (NYHA) classification. All were over 40 years of age, were classified as at stage II to IV, and had no other serious or incurable conditions. The participants in the intervention group were required to have unimpaired hearing, the ability to communicate and be willing to take part in the study.

Sampling was carried out in two phases. First, 104 patients who had been hospitalized for CHF were randomly selected using their file numbers from among 610 patients with hospital records. Second, 52 were assigned randomly to the intervention group and the remaining 52 to the control group (Fig. 2).

3.3. Setting

This study was done in two teaching hospitals affiliated to the Medical Sciences University of Kerman, the center of one of the provinces of south-east of Iran. Kerman is mostly desert and is dry and its cities are far from each other. Yet these two hospitals are the main referral centers for cardiovascular patients in this area and the neighboring provinces.

3.4. Ethical considerations

The Research Ethics Committee of Kerman University of Medical Sciences approved the proposal in 2012. Volunteer participants agreeing to take part signed written informed consent forms. Participants were assured of their safety and confidentiality. They were assured that there