Artículo Original

The Effect of Teaching Palliative Care on the Self-Efficacy of Elderly Patients with Chronic Heart Failure

El efecto de la enseñanza de los cuidados paliativos en la autoeficacia de pacientes de edad avanzada con insuficiencia cardíaca crónica

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ABSTRACT

Objetive: *Determine the effect of teaching palliative care on the self-efficacy of elderly with Chronic Heart Failure.* ***Material and Methods:*** *This single-blind randomized clinical trial was done on patients with Chronic Heart Failure attending to the heart clinics of Golestan University of Medical Sciences in 2018. 48 eligible patients with class-III were selected via convenience sampling. Patients allocated into control and intervention group randomly (n=32). Palliative care training was done for intervention group for six weeks. Data was gathered through the Cardiac Self-Efficacy Scale (CSES) on three time points (before, immediately, and one month after intervention). Data were analyzed in SPSS-18 using independent t-test, chi-squared, Fisher's exact, and repeated-measures ANOVA with corrected Bonferroni post-hoc test.* ***Results:*** *Finding showed that before intervention the mean scores of self-efficacy in intervention and control group was 23.95±8.34 and 24.11±9.41, respectively. Immediate and one month after intervention it was 26.30±8.30 vs. 28.95±8.53 in intervention group and 24.68±9.32 vs. 25.53±10.39 in control group. In intervention group there was no significant difference between the mean scores of before with immediate and one month after intervention. However, there was a significant difference between the two time follow up in both intervention (p<0.0001) and control (p<0.003) groups.* ***Conclusion:*** *Although the education of palliative care has increased the ability to care in elderly, it seems that self-managing in complex conditions is required follow-up over time.*

Keywords: *Heart Failure; Palliative Care, Self-Efficacy, Elderly, Teaching (**Source:** DeCS-BIREME).*

RESUMEN

Objetivo: determinar el efecto de la enseñanza de los cuidados paliativos en la autoeficacia de los ancianos con insuficiencia cardíaca crónica. **Material y métodos:** este ensayo clínico aleatorizado simple ciego se realizó en pacientes con insuficiencia cardíaca crónica que asistieron a las clínicas cardíacas de la Universidad de Ciencias Médicas de Golestan en 2018. 48 pacientes elegibles con clase III fueron seleccionados mediante muestreo de conveniencia. Pacientes asignados al grupo control e intervención al azar (n = 32). La capacitación en cuidados paliativos se realizó para el grupo de intervención durante seis semanas. Los datos se recopilaron a través de la Escala de autoeficacia cardíaca (CSES) en tres puntos de tiempo (antes, inmediatamente y un mes después de la intervención). Los datos se analizaron en SPSS-18 usando una prueba t independiente, chi-cuadrado, ANOVA exacto de Fisher y medidas repetidas con la prueba post-hoc de Bonferroni corregida. **Resultados:** Los resultados mostraron que antes de la intervención, las puntuaciones medias de autoeficacia en el grupo de intervención y control eran 23.95 ± 8.34 y 24.11 ± 9.41, respectivamente. Inmediato y un mes después de la intervención fue 26.30 ± 8.30 vs. 28.95 ± 8.53 en el grupo de intervención y 24.68 ± 9.32 vs. 25.53 ± 10.39 en el grupo control. En el grupo de intervención no hubo diferencias significativas entre las puntuaciones medias de antes con la inmediata y un mes después de la intervención. Sin embargo, hubo una diferencia significativa entre los dos tiempos de seguimiento en ambos grupos de intervención (p <0,0001) y control (p <0,003). **Conclusión:** aunque la educación en cuidados

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paliativos ha aumentado la capacidad de atención en ancianos, parece que el autocontrol en condiciones complejas requiere un seguimiento a lo largo del tiempo.

Palabras clave: Insuficiencia cardiaca; cuidados paliativos; Autoeficacia; anciano; enseñanza. (**Fuente:** *DeCS-BIREME*).

INTRODUCTION

Aging is a global health-related issue widely discussed in recent years[1]. Based on United Nations' predictions, the elderly population will increase from 10.5% in 2007 to 21.8% in 2050[2]. In Iran, as of 2019, the elderly population is about 10 million[3].

Aging is a process associated with reduced function and independence and increased incidence of diseases and need for care[1] Upon aging and an increase in health problems, the risk of chronic diseases such as diabetes and respiratory and cardiac diseases is significantly increased[4]. Heart failure is a common chronic progressive disease affecting physical and mental health that requires seeking timely medical attention[5] It remains one of the leading causes of death and disability among adults worldwide and the most common cause of hospitalization in elderly (more than 65 years old), and the second common cause of attending to the heart clinics and excess financial burden for the healthcare system[6,7] It is also the most important cause of disability and mortality worldwide. Mortality caused by these diseases is 2-5 times higher than infectious diseases in Asian countries[8].

Chronic Heart Failure (CHF) is a complex clinical problem due to which patients experience symptoms such as fatigue and weakness, reduced ability to exercise, very rapid weight gain from fluid retention, edema, and Shortness of breath or dyspnea[9]. The CHF patients are often confronted with an array of issues such as inability to adapt, sense of inability and incapability in performing therapeutic and care-related responsibilities, or performing personal and social affairs in the face of the complex conditions caused by the disease, thereby gradually reducing their life satisfaction and quality of life[10].

Education is an important key to efficient decision-making, and as a result nursing activity must bring about changes in patients' ability for adapting to the disease[11]. The objectives of care plan include strengthening the ability and capability confronting the disease, and finally successful adaptation to the disease[12] It seems that with education and increasing knowledge about the disease and care, patients can attain a degree of confidence by which they can overcome the conditions of their disease. As a result they can adapt to these conditions, which is known as self-efficacy[13]. Based on Bandura's Social Cognitive Theory (SCT), self-efficacy refers to a person's understanding of his/her abilities and adopting care behaviors in order to reach certain goals. In other words, it refers to a person's belief in his/her abilities for performing a behavior and the consequences of that behavior; they remember the sequence of events and use this information to guide subsequent behaviors[14]. It seems that over 50% of cases of re-hospitalization can be prevented if patients trust their knowledge and ability in managing the disease after discharge[15]. Advancement in the treatment of CHD has resulted in improved survival and quality of life. One of the educational programs for patients with CHF is teaching palliative care. According to the World Health Organization (WHO)[16].

"palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual"[17]. It is delivered by an interdisciplinary team of physicians, nurses, social workers, chaplains and other practitioners as an important aspect of care. In fact, it serves as a holistic, humanistic, and cooperative care to address the physical, intellectual, emotional, social, and spiritual needs of patients and their families[18]. Supports patients and families grow their sense of capability in disease management, and enhance their quality of life[18]. Studies show that palliative care affects the decreasing the symptoms and complications and increases the self-care ability and prevention of re-hospitalization in patient with CHF. The research finding of Braincastle et al. (2016) showed that, elderly with chronic diseases (such as cancer, chronic obstructive pulmonary disease, heart failure, and dementia), those who had benefited from palliative care in addition to state insurance had a significantly reduced hospitalization and costs[19]. Results of the study by Evangelista et al. (2012) demonstrated that counseling and teaching of palliative care increases the ability of patients with heart disease in managing their taking medication and adaptation to stress or problem-solving skills.10 Moreover, findings reported by Bahador et al. (2016) indicated that implementing the palliative care training after discharge for patients with CHF enhances the quality of life in the experimental group, and a direct correlation was observed between palliative care training and quality of life[9]. Although routine care is always effective for patients with CHF, training on palliative care can help the process of treatment through belief of capability and the power to face problems and symptoms. Therefore, considering the importance of CHF and the importance of palliative care in chronic diseases in the elderly, the present study aimed to determine the effect of teaching palliative care on the self-efficacy of elderly patients with routine attending heart clinics.

MATERIALS AND METHODS

This single-blind randomized clinical trial was carried out on patients with CHF attending to the heart clinics of Golestan University of Medical Sciences in 2018.

Based on the study by Aghamohamadi et al[5]. sample size was calculated as 16 per group and 32 in total at the confidence level of 0.99, test power of 0.95 (α=0.01 and β=0.05), and based on the following formula48 participants were selected by considering a 50% attrition rate:

$$n_i, n_j = \frac{(z_{1-\frac{a}{2}} + z_{1-b})^2 [SD_1^2 + SD_1^2]}{(m_1 - m_2)^2}$$

First, 48 eligible CHF patients with class III were selected via convenience sampling considering inclusion criteria.

Inclusion criteria were age of 60-80 years; willingness to participate to study; known case of class III CHF; lack of participation in training courses with similar subjects at the same time; absence of any known psychiatric disorder; and absence of serious musculoskeletal disorders. Exclusion criteria were; any change in the disease status or type of treatment; hospitalization or occurrence of physical disorders during the course of the study; withdrawal from the study, and patients' moving or immigration.

After obtaining written informed consent, explanations on research objectives, confidentiality of data, and voluntary participation were provided to the participants who were then assigned to intervention and control groups in 1:1 ratio based on random allocation by coin flip. The palliative care training was implemented for patients in intervention group in addition to routine care. The patients in control group receive routine care without any intervention. The palliative care training was held once a week for six weeks in order to enhance patients' capabilities and self-confidence in controlling the complex conditions of the disease. (Table N°1).

Table N°1. Time table of education for patients with heart failure.

Sessions	Explaining the objectives and content of the educational intervention
1	Explaining the nature of CHF, its symptoms and complications Explaining the palliative care and its definition as a comprehensive approach to care for patients the clinical symptoms of CHF-class III
2	Brief explanation of therapeutic methods based on the severity of the disease Raising awareness on the importance of teaching patients about the methods of care Raising awareness on the importance of belief and self-efficacy in managing the disease.
3	Compliance to prescribed medication
4	Teaching to implement non-pharmacological methods emphasizing on physical activities and healthy life style
5	Teaching the enhancement of personal independence and limiting dependence on others in performing daily activities in personal and social life Teaching about diet considering limitation in the intake of liquids and maintain the anticipating weight Modifying the sleep pattern
6	Teaching smoking cessation and introducing entertainment for having a good time Psychological, spiritual care, and social relations and activities

The content of the educational package was developed based on the strategies of the Ministry of Health and Medical Education by experts. The content validity of the package was approved by a panel of experts, and its face validity was approved by the heart failure patients.

This package familiarized the patients with the concept of palliative care, introduced the nature of CHF and palliative care, including the management of physical problems, enhancement of physical activity, or taking medication, and other non-pharmacological interventions (e.g. diet, sleep pattern, non-smoking), taking medications, spiritual and religious care, and social relationships.

Data were collected using a questionnaire in three parts; demographic information, clinical information, and the Persian version of Cardiac Self-Efficacy Scale (CSES) on three time points (before the intervention, immediately after, and one month after the intervention). Demographic information included age, sex, occupation, level of education, marital status, smoking cigarettes, Opium Addiction, and physical activity. Clinical information comprised the duration of the disease, etiology, comorbidity diseases, the Ejection Fraction (EF) based on the echocardiogram, history of hospitalization, duration of the treatment period, and body mass index (BMI).

The CSES was originally developed by Sullivan (1998) and consisted of 13 items. A five-point Likert scale was used, ranging from 0 (not at all confident) to 4 (completely confident). The total score of this scale ranges from 0 to 52, with higher scores indicating a higher level of cardiac self-efficacy. The reliability and

validity of this scale were confirmed by Aghamohamadi et al., with the total reliability of 0.93 examined based on internal consistency.

The data were analyzed in SPSS 18 using independent t-test, chi-squared test, Fisher's exact test, and repeated-measures ANOVA with corrected Bonferroni post-hoc test at the 0.99 confidence level.

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RESULTS

Results revealed that 53.8% of patients were women, with the mean age of 70.36±7.21 and 71.75±8.28 years in intervention and control groups, respectively. Moreover, mean EF was 9.27±0.40 and 8.27±0.40 and mean BMI was 24.98±5.48 and 29.93±8.17, respectively. An overview of Socio-demographic and Clinical characteristics of the patients in both groups was presented in table 2 and 3.

Table N°2. Socio-demographic characteristics of the patients in Control and Intervention groups

		Control (n=19)		Intervention (n=20)		p-value
		N	%	N	%	
Gender	Male	9	47.4	9	45	0.882
	Female	10	52.6	11	55	
Marital Status	Single	0	0	0	0	0.716
	Married	14	73.7	14	70	
	Widow/widower	4	21.1	6	30	
Educational Status	Illiterate	14	73.7	12	60	0.155
	High School	3	15.8	8	40	
	Diploma and more	2	10.6	0	0	
Employment Status	Worker	2	10.5	0	0	0.252
	Self-employee	4	21.1	5	25	
	House wife	11	57.9	15	75	
Residential Status	Urban	5	26.3	7	35	0.557
	Rural	14	37.7	13	65	
Smoking	Yes	0	0	1	5	0.513
	No	19	100	19	95	
Opium Addiction	Yes	8	42.1	10	50	0.621
	No	11	57.9	10	50	
physical activity	Yes	1	5.3	2	10	0.52
	No	18	94.7	18	90	

Table N°1. Time table of education for patients with heart failure.

Clinical characteristics		Intervention (n=20)		Control (n=19)		p-value
		%	N	%	N	
Disease duration (year)	less than 1	2	10	1	5.3	0.616
	01-mar	6	30	4	21.1	
	04-jul	6	30	4	21.1	
	more than 7	6	30	10	52.6	
Treatment duration (year)	less than 1	2	10	1	5.2	0.76
	01-mar	4	20	5	26.4	
	04-jul	7	35	4	21.1	
	more than 7	7	35	9	47.5	
Diabetes	Yes	7	35	5	26.3	0.557
	No	13	65	14	73.7	
Hypertension	Yes	14	70	12	63.2	0.651
	No	6	30	7	36.8	
Kidney disease	Yes	4	20	2	10.5	0.661
	No	16	80	17	89.5	
History of hospitalization	Yes	13	65	14	73.7	0.557
	No	7	35	5	26.3	

The Shapiro-Wilk test showed that the data on self-efficacy of the elderly with heart failure had a normal distribution before, immediately after, and one month after intervention.

The increase in the scores of self-efficacy in three time points, in compared to the previous stage had a steep slope in the patients of intervention group but a moderate slope in the patients of control group. (Fig. N°1).

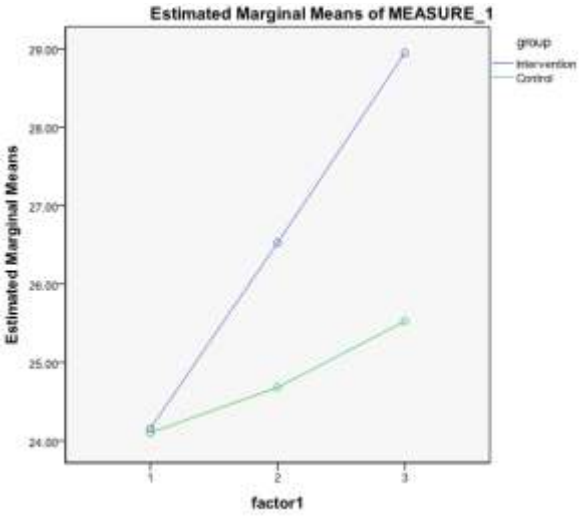

Figure 1. Comparison of mean self-efficacy scores of patients in the two groups at the baseline, immediately after, and one month after intervention

Results of within-group comparison for intervention and control groups in three time point as well as between-group comparisons in three time points using corrected Bonferroni post-hoc test revealed that the increase in mean score had an increasing trend in the

experimental group, and mean scores were significantly higher one month after intervention compared to the pre-intervention stage. Results showed that mean self-efficacy scores in patients of both groups was increased in every stage compared to the previous one, but the increase was more significant in the experimental group (p<0.0001) (Table N°4).

Table N°4. Mean self-efficacy scores in two groups at the baseline, immediately, and one month after intervention.

Groups	mean scores in three time point			repeated-measures ANOVA	corrected Bonferroni post-hoc test		
	(1)	(2)	(3)	(1,2,3)	(1,2)	(1,3)	(2,3)
Intervention	23.95	26.3	28.95	0.0001	0.0001	0.0001	0.0001
Control	24.11	24.68	25.53	0.005	0.257	0.029	0.148
P-Value	0.975	0.57	0.274				

1. baseline (before intervention)

2. immediately after intervention

3. one month after intervention

The self-efficacy of the elderly with CHF in the experimental group did not significantly differ compared to that of the control group after the intervention.

DISCUSSION

Based on within-group comparisons, changes in mean score of patients' self-efficacy in three time points showed an increasing trend in both groups; it showed a significant difference in the intervention group, but the within-group comparison showed no significant difference. This can be justified by the effect of the educational environment on increasing the knowledge and awareness and exchange of information between the groups, in line with the study by Aghamohamadi et al.5 However, the lack of a significant difference in the within-group growth of self-efficacy was inconsistent with the study by Kaveh Savadkoohi et al[5]; in the mentioned study, training self-management to patients with hypertension led to an increasing trend of self-efficacy in the experimental group, showing a significant difference with the control group[20]. It seems that the concept of self-efficacy in hypertension is a common and known topic related to individuals' lifestyle. In other words, it seems that, in the present study, the elderly could not use the information which was educated by researchers entirely and they could not replace their previously learned information with the new one in a short time period.

Moreover, results showed that the increasing trend of self-efficacy mean scores was more significant in the experimental group. The mean self-efficacy score in the experimental group had a marked increase and a significant difference in all three time points compared to the previous stage. However, in the control group, there was a mild increasing trend, showing a significant difference between the pre-intervention stage and one month after the intervention. This result is in line with those reported by Evangelista et al.[10] In the mentioned study providing counseling on palliative care for overcoming the pressure of depression symptoms and quality of life and a three-month follow-up for patients with CHF after discharge, results showed that the bearing of the pressure of problems and quality of life were improved in both groups, but the difference was more significant in the experimental group. Furthermore, in the study by Sadat Bahador et al. the elderly with heart failure were educated on methods of palliative care on physical, spiritual, religious, and economic domains, and a one-month follow-up was provided after discharge. Finally, the mean quality of life score showed a significant improvement in the experimental group compared to the control group[9] In their clinical trial, Baljani et al. reported that nursing interventions for enhancing self-efficacy among patients with heart disease with one-month and one-year follow-up improves their quality of life[21].

There was a significant difference between the before intervention and one month after the intervention in both groups in this study. It seems that although the control group did not receive palliative care, they were influenced by prior information when visiting their doctors and cardiac nurses and, therefore, may have received some level of training.

Moreover, findings demonstrated that despite the increasing trend of change in the two groups, mean self-efficacy showed no significant difference between the two groups, which is in line with the studies by Williams et al. , Elzen et al. and Zakrisson et al.[22-24] In the former study, a self-management and self-efficacy program was provided for the elderly with chronic diseased with follow-up. It was found that the two groups showed no significant difference in terms of self-efficacy. Moreover, the latter study was conducted in the Netherlands to determine the effectiveness of self-management program on the health of patients with chronic disease[22]. Results revealed that mean general self-efficacy was increased in the experimental group, while no significant difference was found between the two groups at the end of the sessions. This is not consistent with the results reported by Esmaeelpoor et al.[25] These researchers examined the effects of self-care methods in patients with ischemic heart disease at the time of discharge and showed that mean self-care behaviors was increased in the experimental groups after 15-30 days, and there was a significant difference between the two experimental groups and the control group. This can be interpreted and justified by the difference in individualized instruction for the experimental group along with the provision of a

booklet and weekly telephone follow-up in the study by Esmaeelpoor et al. Moreover, it seems that in the present study, the multi-dimensional nature of palliative care, unfamiliarity of patients with this type of care, complex nature of the disease with rapid and severe clinical changes, and patients' excessive involvement with the symptoms of diseases and their limiting nature were an obstacle to the effectiveness of palliative care education and its use in one month. Similarly, Zihem et al.[26] conducted a cross-sectional study to examine the facilitators and barriers of teaching palliative care for patients with heart failure in healthcare systems of Germany. They reported that lack of knowledge of and familiarity with palliative care as well as the short duration of relationship and cooperation between patients and caregivers is an obstacle to palliative care.

Increasing self-efficacy in care and management of disease conditions as a result of teaching palliative care for the elderly with heart failure is a turning point in novel cares for this vulnerable group. Moreover, the fact that the effect of this training persisted one month after intervention indicates the importance of the role of time in transferring information to the elderly. The limitations of this study included the excessive dependence of most patients on their families in performing daily tasks, which was largely controlled by education and encouragement for the patients during the classes. Patients' access to other information sources, including mass media (e.g. educational programs on the radio or television) was another factor which could not be controlled by the researcher.

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