

Effect of self-care education on self efficacy in patients undergoing hemodialysis

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Abstract: Collaborative relationship between patients and care providers is the basis of effective self efficacy in care is particularly with emphasis on their self-care aspects. The aim of this study was to determine the effect of education on levels of self efficacy in hemodialysis patients. **Methods:** This study was a single blinded clinical trial conducted on 60 hemodialysis patients who were selected by convenience sampling in two groups. Patients were assigned to intervention and control groups randomly. Data collection tools included demographic information form and forms to determine the level of care for patients undergoing hemodialysis. Pre-intervention, questionnaires were completed with interviews then the self-care educational program was conducted. The control group did not receive the intervention. After education (one month) in the intervention group and the control group the questionnaires were completed again. The data were analyzed by SPSS software version 16 and using independent t-tests and chi-square (X^2). **Results:** Results showed that there was a significant relation between self efficacy and education, occupational status, income and number of times of hemodialysis. Also, there was a significant relation between level of self-care and self-efficacy, by increasing self-care, self efficacy is also increasing. Results showed that mean of total score of self-care education program in the two groups was not significant; however after performing desired program for two groups there was significant differences leading to self care improvement. **Conclusion:** Designing and implementing self-care programs based on educational needs and in accordance with level of patients' understanding can lead to positive results in terms of quality of life.

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Introduction

Nowadays the most common way to treat advanced renal failure (ESRD) is hemodialysis (1). Hemodialysis led to increase longevity and survival in patients with chronic renal failure (2). About 400,000 people worldwide are suffering from chronic renal failure, of these, more than 300,000 are under hemodialysis treatment (3). About 14,000 people in Iran are under hemodialysis treatment (4). Treatment with hemodialysis increases hopefulness of patients with chronic renal failure (5); however, due to requirements and possible complications of this treatment method, the patient may confronted multiple problems including; Hypotension, painful muscle contractions, bleeding, dysrhythmia, air embolism, chest pain, dialysis imbalance, loss of consciousness and convulsions(6,7,8). So numerous and sophisticated therapies are accompanied with several problems and changes in life style that influences their social and mental functioning (9). Since hemodialysis is a long-term trend, these

patients need to use a series of solutions to better cope with and manage their disease (10). Moreover due to increasing costs of hospital services, length of hospital stay has been shorter for these patients, consequently greater responsibility for patient care is placed over the patient's family that have not sufficient knowledge and skills for patient care. Treatment of these patients without participation of the patient and performing some self-care activities cannot be effective enough and desired treatment result is not achieved (11). Because of their extensive roles, nurses can be active in patient care plan, and this partnership, increases nurse – patient relationship in recovery process (12). In addition, Bag (2009) showed that there is a positive relationship between self-care and self-efficacy (13). Patient education is a major responsibility of nurses and plays a great role in, self efficacy improvement and converting patient from a dependent element to an independent and self-sufficient person (14). The most important point in patient self care is participation of the patient. (15). If

the chronic patients were taught to care for themselves independently, rather than others do care for them, their recovery will be further improved (16). Mollaoglu (2009) showed that patients receiving more social support had less anxiety and more self-care (17). Self care programs as an important therapeutic target help patients for independence and avoiding repeated admissions to hospital and to decrease skyrocketing costs (18) and nurses emphasizing on the remaining ability possibly strengthen their sense of independence and support them in self care and self-sufficiency (17). Self care has been named as a human routine alteration to sustain life and maintain physical and mental performance (19). Barazesh (2005) showed that performing self care program decreased problems significantly and increased the quality of life in patients treated with hemodialysis (20). Self care is conscious and continuous practice and in accordance with regulatory needs of individuals (19). Given that patients undergoing hemodialysis are dependent for a lifetime on a particular device or technique to preserve their life and have numerous worries about self care, and also doubts about their ability to perform daily activities and normal life, the present study conducted to determine the effect of self care education program on the level of self-efficacy in hemodialysis patients at Tohid Hospital in Sanandaj.

Methods

This study was a single blinded clinical trial which was conducted to determine the effect of self care education on the level of self-efficacy in hemodialysis patients. The patients were divided into two groups, and then researcher obtained the patient's consent for participation in the study. Questionnaire containing demographic characteristics and level of self efficacy assessment were completed for patients in interview form. In order to comply with the ethical issues, questionnaires were distributed with coding and anonymously. 60 patients who were passed inclusion criteria including; willingness to participate in the study, lack of language difficulties, lack of underlying diseases including diabetes, mental or physical disability were selected by convenience sampling and were assigned to intervention (30) and control (30) groups randomly. Then self-care educational program was conducted for intervention group, the control group did not receive the intervention and received only routine care. Educational program in the form of educational packages (brochures and pamphlets) compiled, designed and implemented for intervention group. The program was including familiarity with nature of disease, nutrition, fistula care and how to control common problems of these patients. Self-care

education was performed to patients for one month using oral presentations, questions and answers and images and after the one month, its effect on the level of self care-efficacy was evaluated. In this study demographic questionnaire (14 questions) including age, gender, marital status, education, occupation etc. and the self-efficacy assessment questionnaire (15 questions) including; fistula care, mobility, dressing, personal hygiene etc were used (11). For validity of the questionnaire, content validity, and for confidence, Cronbach's alpha coefficient (0.87) was used. Data were analyzed by SPSS software version 16 and means were compared using independent t-tests and chi-square (X^2).

Results

Results showed that the mean age of patients in the control group was 49.55 and in intervention group was 47.46 years. In terms of age and gender there was no significant difference statistically. Chi-square test results showed that the two groups in terms of marital status, education level and occupation, duration of chronic kidney disease, there was no significant differences statistically. Also in terms of duration of hemodialysis two groups were similar. (Tables 1 and 2) Mean level of self care after the intervention for personal hygiene in the intervention group was and in control group was and there was significant difference between the two groups. There was a significant difference between the two groups in efficacy of the diet, communication sleep pattern and rest. The results showed that the mean total score of self-care in the intervention group before and after the program is significant and was improved compared to the previous. Comparison of pre-and post-intervention data, indicates that the efficacy before the intervention was low. After the intervention in terms of self-care, 13.8% were at the optimum level, 71.1% moderate and 13.1 % were weak. Also results showed that mean score of self efficacy in patients with higher education levels was more than patients with lower levels of education. (Table 3).

Discussion

As mentioned in terms of age, gender, and education level there was no significant differences statistically and the two groups were homogeneous in terms of these variables. Age, gender and education are effective on need for self-care education scores. In terms of gender, having social status, management and leadership and decision making role in the family can affect the scores of need for self-care education. With increasing age, their self care ability would be reduced. With increasing levels of education, information would be taken easier and individual

interest for the protection and promotion of health is higher (21). Also in this study mean level of self care

after the intervention for personal hygiene in the intervention group and control group was significant.

Table (1): relative frequency distribution of demographic characteristics in the intervention and control groups

Variables	Intervention Group		Control Group		P-Value
	Mean	SD	Mean	SD	
Age	47.46	9.77	49.55	9.88	P=0.872
Duration of chronic kidney disease	8.29	6.53	8.16	6.18	P=0.314
Duration of hemodialysis	7.24	5.44	7.69	5.35	P=0.514

Table (2): relative frequency distribution of demographic characteristics in the intervention and control groups

Variables		Intervention Group		Control Group		P-Value
		Number	Percent	Number	Percent	
Gender	Male	11	35	12	38	P=0.606
	Female	14	65	13	62	
Marital Status	Single	25	80	24	78	P=0.592
	Marred	5	20	6	22	
Occupation	Employee	8	26.7	6	20	P=0.899
	Business	12	40	15	50	
	Housekeeper	10	33.3	9	30	
Education	Illiterate	4	15.3	6	20	P=0.583
	Elementary and High School Diploma	17	55	18	60	
	Higher than diploma	9	29.7	6	20	

Table 3: Mean and standard deviation scores of self efficacy in intervention and control groups

Groups Self Care Dimensions	Intervention Group				Control Group				P-Value
	Before		After		Before		After		
Personal hygiene	3.17	0.46	3.83	0.59	2.77	0.43	3.27	0.68	P=0.047
Diet Control	3.23	0.61	3.53	0.81	3.5	0.63	3.7	0.7	P=0.469
Communication	3.18	0.42	3.47	0.54	3.77	0.38	3.8	0.48	P=0.711
Sleep and rest	2.83	0.74	3.17	0.91	2.88	0.33	3.33	0.62	P=0.623
Compliance with medication regime	3.57	0.22	3.18	0.43	3.29	0.25	3.97	0.3	P=0.059

In a study done by Narimani et al (2008) significant improvement in the levels of self care, Nphysical function, energy level, mental health, and overall perception of health were noticed (21). In the present study regarding the efficacy of the diet, there was a significant relationship between the two groups. Ansar Study (2007) showed that education in hemodialysis patients in relation to diet and fluid intake, lead to fluid intake restrictions (22). In our study there were differences for the efficacy scores in the field of dietary and fluid intake before and after the program, but the differences were not statistically significant. Results of Mohammadi et al study (2007) showed that older people and women in dietary had higher self-efficacy scores, but between scores of duration of treatment, education and occupation with the self efficacy status of dietary there was no significant relationship (23). Results of Safarineghad and colleagues study (2009) which conducted to

evaluate the effect of self-efficacy on adherence to fluid dietary in hemodialysis patients showed that 33-50% of patients do not follow the fluid dietary restriction, but after intervention and education, efficacy increasing is associated with adherence increasing, improving health behaviors and reducing mental and physical symptoms (24). Susan and et al (2008) showed that in terms of dietary in patients undergoing hemodialysis, there was a significant difference (25). Therefore it seems self-efficacy education is effective in improving self-care activities. In Braden et al Study (2005) self-care score was 47% in both groups, after the intervention in the control group score was 47% and for intervention group it was 90% and in relation with dietary and medicines, there was no significant association between the two groups,(26). In this study, mean of self care of hemodialysis patients was 42.66% that in the personal hygiene, diet, medicines, sleep and rest,

mobility and relocation, family connections, communication with staff, anxiety and worry management dimensions was 44.83%. Keiko et al study (2009) conducted to determine the status of the individual's performance before and after dialysis on 3702 patients with advanced renal failure who undergoing hemodialysis. Performance status was doing 7 activities of daily life, including; eating, dressing, personal hygiene, walking, sitting on a chair and to stand up and to change position on the bed. Each activity was also graded. The results of this Study showed that dialysis itself caused physical, mental and social problems of patients. As well psychiatric disorders such as anxiety, depression, fatigue and dizziness which involve these patients caused loss of motivation and desire to activity in them. Functional status of 39% of them was as before dialysis. After 12 months, 87% died or their functional status decreased (27). It seems that self care education improved patient's self efficacy by reducing patients' dependence. Results showed that 0.03% of patients in the intervention group and 26.7% in the control group before the intervention in terms of self-care were dependent. After intervention, 3.3% and 0.02% in the intervention and control groups were dependent respectively. Eylem et al study (2009) showed that there are significant differences between self-care and self-efficacy in patients undergoing hemodialysis, also, the results of Eylem et al study showed that patients who had a higher level of self care had a higher quality of life (28). Orasa study (2003) showed that self care score in patients undergoing dialysis at home were higher than patients undergoing dialysis in the dialysis unit (29). The results of the present study showed that self-care program design should be based on the educational needs of patients and their level of understanding, so that full participation of patients and their relatives lead to positive achievements in terms of self care. In Mons and colleagues study (2009) which conducted on 70 patients undergoing hemodialysis, results showed that after self-care education program, 82 % patients of intervention group did better self-care activities compared with the control group. It means that educational intervention can be effective in improving self care of these patients (30). In research conducted by Nabavi and colleagues (2008) teaching the principles of self-care in the two interventions and control groups of hemodialysis patients showed significant differences, meaning that after training, the intervention group had been used most of these methods more than control group (31). The results of Sahebalzamani et al study (2007) revealed that self-care education to patients with stroke lead to performance improvement in them, as well as the possibility of

complications and returning to hospital would be reduced (32). Sakhaie et al in their study revealed that personality characteristics and psychosocial conditions are effective to create stress and anxiety in these patients, and care providers should have information and necessary skills to manage stress of the patients (33). Sajjadi et al (2009) demonstrated a strong and negative relationship between self-care and stress and anxiety, this way with increasing anxiety in patients self-care is fewer. In this study, it is recommended to reduce the physical and psychological effects resulting from treatment with hemodialysis, by any means possible including teaching, conditions be prepared to increase compliance of patients to self-care behaviors (34). Therefore it seems that self-care education is effective improving the level of patient's activity and may be useful in reducing stress and anxiety in patients undergoing dialysis. One of the limitations of this study is that, given that part of the education was performed as a group, understanding and perception of patients might have been different; therefore it is suggested to study different methods of individual education in hemodialysis patients.

Conclusion

Level of self-efficacy in hemodialysis patients after education program was different in intervention and control groups. Self care education can ultimately lead to improvement in the level of efficacy in hemodialysis patients which is the ultimate goal of nursing care, especially in chronic diseases.

References

1. Clase CM, Kiberd BA, Garg AX. Relationship between glomerular filtration rate and the prevalence of metabolic abnormalities: results from the Third National Health and Nutrition Examination Survey (NHANES III). *Nephron Clin Pract.* 2007; 105(4): 178-84.
2. Selvin E, Manzi J, Stevens LA, Van Lente F, Lacher DA, Levey AS et al. Calibration of serum creatinine in the National Health and Nutrition Examination Surveys (NHANES). *Am J Kidney Dis.* 1999-2007; 50(6):918-26.
3. Amato D, varez-Aguilar C, Castaneda-Limones R, Rodriguez E, vila-Diaz M, Arreola F et al. Prevalence of chronic kidney disease in an urban Mexican population. *Kidney Int Suppl.* 2005;97:7-11.
4. Domrong kitchaiporn S, Sritara P, Kitiyakara C, Stitchantrakul W, Krittaphol V, Lolekha P et al. Risk factors for development of decreased kidney function in a southeast Asian population: a 12-year cohort study. *J Am Soc Nephrol.* 2005;16(3):791-9.
5. Center for Irans transplantation and special disease management. available at: <http://www.irneph.com>.

6. Afshar R, Sanavi S, Salimi J. Epidemiology of chronic renal failure in Iran: a four year single- center experience. *Saudi J Kidney Dis Transpl.* 2007;18(2):4-191
7. McDonald SP, Maguire GP, Hoy WE. Renal function and cardiovascular risk markers in a remote Australian Aboriginal community. *Nephrol Dial Transplant.* 2003;18(8):1555-61.
8. Haghighi AN, Broumand B, D'Amico M, Locatelli F, Ritz E. The epidemiology of end-stage renal disease in Iran in an international perspective. *Nephrol Dial Transplant.* 2002;17(1):28-32.
9. Shankar A, Klein R, Klein BE. The association among smoking, heavy drinking, and chronic kidney disease. *Am J Epidemiol.* 2006;164(3):263-71.
10. Safarinejad Mr. The epidemiology of adult chronic kidney disease in a population-based study in Iran: prevalence and associated risk factors. *J Nephrol.* 2009; 22(1):99-108.
11. Smeltzer SC, Bare BG, Brunner, Suddarth. *Text Book of Medical-Surgical Nursing.* 22nd ed. Philadelphia: Lippincott co; 2006. 1110-50.
12. Brawnwald E. *Harrison principle of internal medicine.* New York: McGraw-Hill Co. 2001; 1561-70.
13. Bag E, Mollaoglu M. The evaluation of self-care and self-efficacy in patients undergoing hemodialysis. *Journal of Evaluation in Clinical Practice.* 2009;3:P.605-10
14. Faris M. *When your kidneys Fail.* Los Angeles: National Kidney Foundation of Southern California. 1994.
15. Clase CM, Kiberd BA, Garg AX. Relationship between glomerular filtration rate and the prevalence of metabolic abnormalities: results from the Third National Health and Nutrition Examination Survey (NHANES III). *Nephron Clin Pract.* 2007; 105(4): 178-84.
16. Selvin E, Manzi J, Stevens LA, Van Lente F, Lacher DA, Levey AS et al. Calibration of serum creatinine in the National Health and Nutrition Examination Surveys (NHANES). *Am J Kidney Dis.* 1999-2007;50(6):918-26.
17. Mollaoglu M. Perceived social support, anxiety and self care among patients receiving hemodialysis. *Dialysis & Transplantation.* 2006.35:P.144-155
18. Domrongkitchaiporn S, Sritara P, Kitiyakara C, Stitchantrakul W, Krittaphol V, Lolekha P et al. Risk factors for development of decreased kidney function in a southeast Asian population: a 12-year cohort study. *J Am Soc Nephrol.* 2005;16(3):791-9.
19. Konta T, Hao Z, Abiko H, Ishikawa M, Takahashi T, Ikeda A et al. Prevalence and risk factor analysis of microalbuminuria in Japanese general population: the Takahata study. *Kidney Int Suppl.* 2006; 70(4):751-6.
20. Barazesh. Effect of self care on the quality of life and physical problems of patients under maintenance hemodialysis. *Hayat* 2005; 11(24): 51-62
21. Narimani K. Effect of self care on the quality of life of patients under maintenance hemodialysis. *Journal of Shahed University* 2008; 16(79): 63-70
22. Unsar S, Erol O, Mollaoglu M, The self-care agency in dialyzed patients. *Dialysis & Transplantation.* 2007. P 57 - 70
23. Mohammadi E, Sahabzamani A, Boroumand B. The effect of self-care educational program on decreasing the problems and improving the quality of life of dialysis patients. *Hayat J* 2007;11(24):51-62.
24. Safarinejad Mr. The epidemiology of adult chronic kidney disease in a population-based study in Iran: prevalence and associated risk factors. *J Nephrol.* 2009; 22(1):99-108.
25. Susan M, Alan G, Jardine M. self care operation and nursing interventional for children and their parents. *Nursing science quarterly.* 2008;3: 52-6.
26. Smeltzer SC, Bare BG, Brunner, Suddarth. *Text Book of Medical-Surgical Nursing.* 22nd ed. Philadelphia: Lippincott co; 2006. 1110-50.
27. BRADEN J, MANNIS K, CARMEN V, HEATHER J. An investigation of factors associated with fluid adherence among hemodialysis patients: a self-efficacy theory based approach. *Ann Behav Med.* 2005;19(4):339-43
28. Keiko S. Functional Status of Elderly Adults before and after Initiation of Dialysis. 2009.1539-47.
29. Eylem B and Mukadder M. Self-care self-efficacy, depression, and quality of life among patients receiving hemodialysis in Taiwan. *International Journal of Nursing Studies.* 2008;39:245-51.
30. ORASA P. self-care ability, and sense of coherence in hemodialysis patients: a comparative study. *Hemodial Int* 2003;8-14.
31. Mans JL, Nespor S, Rault R. A comparison of reported sleep disorders in patients on chronic hemodialysis and continuous peritoneal dialysis *Am J Kidney Dis.* 2009; 19:156-91.
32. Nabavi Z. A Study of the Effect of Self-Care Training on the Hemodialysis Patients' Quality of Life. *University Research Scholar bimonthly.* 1388;16(79):63-70.
33. Sahebzamani M. Effect of self care on the brain stroke patients with hemiparesis. *Journal of Open University* 2009; 17(86): 213-18
34. Skaie D, Nikhbakht Nasrabadi A, Shaban M, Saebnia R. The effect of using Orem's model of self-care on recovery of patients with heart failure. *I J NMR* 2009; 14(4): 174-179.
35. Sajadi K, Kenneth E, Covinsky, Glenn M. Functional Status of Elderly Adults before and after Initiation of Dialysis. 2009.1539-47.