

## Self-Care Ability in Hemodialysis Patients

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### ABSTRACT

**Introduction:** Considering the numerous physical and psychological problems in hemodialysis patients, they are dependent on others in some daily activities and in fact, they do not have full self-care ability. A few studies have ever been done, particularly in Iran, on self-care ability of hemodialysis patients. The present study aimed to determine self-care ability of these patients in addition to evaluate its association with some demographic characteristics. **Methods:** This was a descriptive study in 2009 done in Maragheh, Bonab and Miandoab Hospitals. The study population included 115 hemodialysis patients who were eligible. Data were collected using a combined and modified questionnaire including demographic characteristics and self-care ability items. **Results:** Self-care ability was desirable in 78.3 percent of the patients. The highest desirable self-care ability in the study participants was related to vascular access (73%) and the highest undesirable self-care ability was related to follow the diet. There was a significant association between self-care ability and some demographic characteristics including age, gender, marital status and employment status. **Conclusion:** Hemodialysis patients did not have full self-care ability. It is necessary to enhance their knowledge about diet, complications of hemodialysis and preventive methods through accurate and permanent education so that they can increase their self-care ability.

## Introduction

Chronic renal failure (CRF) is the progressive and irreversible destruction process of renal function in which body's ability to maintain water and electrolytes and keep their balance would be ruined and uremia would occur consequently.<sup>1</sup> The end stage renal disease (ESRD) treatment is kidney transplantation. However, considering that accessibility of kidney transplantation is not easy in most parts of the world, the patient should be treated with dialysis until kidney transplantation time. Annually, more than 60 thousand people in the world die due to renal failure.<sup>2</sup>

In a survey done in 1992, the number of patients undergoing hemodialysis was reported 517000 people.<sup>3</sup> This global statistic in 1992 in-

creased to one million people.<sup>4</sup> The incidence rate of renal failure in the world is 242 cases per a million people and annually 8 more million are added to its amount. The rate is different in different communities.<sup>5</sup> According to statistics of Iran Specific Diseases Center and Association of Kidney Patients Support, there are 267 dialysis centers in Iran (52 in Tehran and 215 in other cities). There were approximately 20134 patients with advanced chronic renal failure at the end of 2003 that 10276 of them underwent hemodialysis. Annually, the prevalence of hemodialysis patients increases approximately by 15%.<sup>6</sup>

The patients with chronic renal failure are faced with numerous physical and psychological stressful factors which cannot be controlled even with new advancements.<sup>7</sup> According to

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Lancaster, "in every aspect of life, patients undergoing hemodialysis are faced with many stressful factors such as family problems, change in sexual functions, dependency to others to keep living, social isolation, change in self imagination (body), mental pressures and fatal threat".<sup>8</sup> With regard to physical and psychological problems in hemodialysis patients, in all or some parts of their daily activities, they are dependent on others and in fact they do not have full self-care ability. Self-care ability is the capacity and power of people to meet their needs and related care. These abilities in self-care model has been called being *agent*. Self-care is the permanent activities which people do to continue life and to provide health and welfare. Adults have this ability and power, but infants, children, elderly, diseased and disabled people are completely dependent on others in self-care or need others' help to meet their needs.<sup>9</sup>

Various studies have shown that patients with advanced chronic renal failure who undergo hemodialysis have several pharmacological therapies, specific diet program and many physical and psychological disabilities,<sup>7</sup> which may cause them to have problem in self-care ability. Since a few studies have ever been done in determination of self-care ability in hemodialysis patients particularly in Iran, the present study aimed to determine self-care ability of these patients in addition to evaluate its association with some demographic characteristics.

## Materials and methods

This was a descriptive study done in 2009. The study population included all the hemodialysis patients admitted in hemodialysis wards of Sina Hospital of Maragheh, Imam Khomeini Hospital of Bonab and Abbasi Hospital of Miandoab. Given the low number of patients in mentioned wards, all the eligible patients who inclined to participate in the study were selected after explaining about study objective and ensuring about confidentiality of information. Characteristics of the study subjects were patients undergoing hemodialysis for 2 or 3

times a week which at least three months had passed since their dialysis onset,<sup>10</sup> satisfaction to participate in the study, literacy or ability to be interviewed and communication ability and no history of severe mental disorders.

Self-care ability was measured using a researcher prepared questionnaire through previous literatures and researches.<sup>11</sup> The Self-Care Questionnaire consisted of four parts of demographic characteristics, ability of vascular access care, ability for following the diet and general cares. To determine content validity, the questionnaire was given to a number of nursing professors of Bonab Branch of Islamic Azad University and Tabriz, School of Nursing and after receiving the feedbacks, required modifications were implemented. Cronbach's alpha was used to find out the reliability of self-care ability and coefficient alpha 0.78 was obtained. For other questions, Kuder-Richardson coefficient of reliability was used. The applied scores to the provided responses to the self-care ability tool were arbitrarily divided into two equal parts, the scores under average were considered as undesirable and the scores higher than average as desirable. After data collection, they were analyzed using SPSS software version 15.

Ethical requirements related to human researches were fulfilled by obtaining written consent from the study subjects and approving the research design.

## Results

The majority of subjects (50.5%) were in age range of 39-62 years ( $50.2 \pm 15.4$ ), 51.3 percent were males, 77.4 percent married, 58 percent unemployed and 54.8 percent were illiterate. Majority of patients (59.3%) had undergone hemodialysis for 1-5 years, 77.4 percent of them underwent dialysis 3 times a week and 91.2 percent did not report a history of kidney transplantation.

Regarding self-care ability, 78.3 percent of the study subjects had desirable self-care ability.

Moreover, the highest desirable self-care ability in the study subjects was in vascular

access (73%) and the highest undesirable self-care ability was in following the diet (Table 1).

**Table 1.** Self-care ability in hemodialysis patients of Bonab, Maragheh and Miandoab Hospitals (n=115)

Self-care ability	N (%)	Mean (SD)
<b>Overall self-care ability</b>		
Undesirable (5-30.5)*	25 (21.7)	35.7 (6.3)
Desirable (30.5-56)	90 (78.3)	
<b>Vascular access care</b>		
Undesirable (0-6.5)*	31 (27.0)	7.8 (2.2)
Desirable (6.6-13)	54 (73.0)	
<b>Following a diet</b>		
Undesirable (0-11)*	39 (33.9)	12.7 (2.6)
Desirable (11.1-22)	76 (66.1)	
<b>General cares</b>		
Undesirable (5-13)*	38 (33.0)	15.2 (3.8)
Desirable (13.1-21)	77 (67.0)	

\* The numbers in parentheses are the sum of scores that were given to provided responses in tools which divided into two equal parts.

**Table 2.** The association between demographic characteristics and overall self-care ability in hemodialysis patients

Demographic characteristics	Mean (SD)	Statistical test
<b>Age</b>		
Under 39	40.5 (4.7)	Chi-square showed a significant correlation between age and self-care (p = 0.02).
39-62	34.5 (6.3)	
Over 62	32.3 (4.5)	
<b>Sex</b>		
Male	36.9 (5.2)	Fisher's exact test showed a significant correlation between sex and self-care (p = 0.04)
Female	34.4 (7.1)	
<b>Marital status</b>		
Married	35.5 (5.9)	Chi-square showed a significant correlation between marital status and self-care (p = 0.007).
Single	42 (4.1)	
Lost spouse	31.3 (6.3)	
<b>Employment status</b>		
Unemployed and housekeeper	35.2 (7.1)	Fisher's exact test showed no significant correlation between employment status and self-care (p = 0.16)
Employed	36.6 (5)	
<b>Educational status</b>		
Illiterate	32.3 (5.3)	Chi-square showed a significant correlation between educational status and self-care (p = 0.004)
Primary-secondary school	39.2 (5)	
High-school & more	41.1 (4.7)	
<b>Hemodialysis duration</b>		
Less than a year	36 (6.4)	Chi-square showed no significant correlation between hemodialysis duration and self-care (p = 0.7)
1-5 years	35.7 (6.4)	
More than 5 years	34.7 (6.6)	

Furthermore, there was a significant association between self-care ability and some demographic characteristics such as age, gender, marital status and educational status, but not with employment status and duration of hemodialysis (Table 2).

## Discussion

In terms of self-care ability in hemodialysis patients, almost two-third of hemodialysis patients had desirable self-care ability. In subgroups of self-care ability (vascular access care, following diet and general cares) also

more than half of the patients obtained desirable score. In a study by Tsay and Healstead it was also indicated that hemodialysis patients in Taiwan had moderate self-care ability.<sup>12</sup>

Self-care ability is the capacity and power of people to meet their needs that is done to save life and provide health and well-being. In other words, it is a complicated characteristic of individuals that enables them to perform some actions for identified and specific needs. Lancaster wrote: "patient undergoing hemodialysis are faced with many stressful factors in every aspect of life such as family problems, change in sexual functions, dependency to others to save life, social isolation, change in self-body image, mental pressures and fatal threat".<sup>8</sup> These problems influenced some self-care ability needs of these patients and that is why hemodialysis patients cannot meet their own self-care needs.

Regarding the relationship between self-care ability and some demographic characteristics, age significantly reduced self-care ability in hemodialysis patients. As previous studies showed that lower age could improve quality of life of hemodialysis patients and given that there is a direct and significant correlation between quality of life and self-care ability,<sup>13</sup> it can be expected that lower age can enhance self-care ability. Furthermore, given that physical problems were lower in younger individuals and they have higher energy and vitality, they probably would have higher self-care ability. Moreover, it was indicated that there was a significant association between marital status and self-care ability so that single individuals had better self-care ability than married patients. It seems that since single patients had a lower age than married people and also since lower age can increase quality of life and physical ability of hemodialysis patients,<sup>13</sup> therefore, it can be expected that single hemodialysis patients have higher self-care ability.

There was a significant correlation between educational status and self-care ability so that individual with higher education had higher self-care ability than illiterates. The

patients who have higher educational level can better recognize their self-care needs and confront with them; therefore, it can explain the superiority of educated patients.

In the present study, it was indicated that men had more self-care ability than women. Given that this study showed that males had higher educational level than women and since educated patients could better recognize their self-care needs, therefore it might be the explanation of this difference. The other effective factor in this regard might be the lower age of men than women; so that men were 3.6 years younger than women on average. Naturally, younger individuals have better physical status and can better care for themselves.

According to increasing number of hemodialysis patients and dependency of these patients on others in daily activities, the concept of self-care ability is of high important and value for them. The results of this study showed that these patients did not have full self-care ability and some measures should be adopted like accurate and permanent education about diet and complications of hemodialysis as well as its preventive methods so that they can increase their self-care ability. Since one of the nursing objectives is to promote self-care ability in patients to make them independent and prevent from many threatening complications,<sup>14</sup> nurses should help them emphasizing on remaining abilities of patients and at least create sense of independence to eventually make them needless in self-care ability.<sup>15</sup> Therefore, through some measures such as determining self-care needs in every single patient, prioritizing their problems, determining short-term and long-term goals to solve their problem, educating them and planning their self-care ability in different areas such as diet, vascular access etc, nurses can decrease physiologic complications resulted from chronic renal failure and hemodialysis and thereby improve their quality of life.

Finally, it is noteworthy that since the study population of the present study in-

cluded patients with chronic renal failure undergoing hemodialysis in hospitals of Bonab, Maragheh and Mian-doab, the findings cannot be generalized to all the hemodialysis patients of other cities.

### Ethical issues

None to be declared.

### Conflict of interest

The authors declare no conflict of interest in this study.

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