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The Relationship between “Self-Care Ability” and Psychological Changes among Hemodialysis Patients

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Abstract

Aim: The study investigates and analyzes the relationship among the concepts of demoralization, posttraumatic growth, and self-care ability in patients undergoing hemodialysis. **Methods:** The cross-sectional descriptive correlational study was conducted in 2017 on 150 hemodialysis patients selected through census in Buali Hospital, Ardabil, Iran. Demoralization scale, the posttraumatic growth inventory, and self-care questionnaire were used for cross-sectional data collection. Data were analyzed using descriptive statistics, Pearson and Spearman correlation coefficient. **Results:** The mean and standard deviation of demoralization, posttraumatic growth, and self-care were 36.25 ± 18.84 , 63.17 ± 17.71 , and 33.89 ± 6.40 , respectively. Self-care ability was positively associated with posttraumatic growth ($r = 0.287$) and negatively related to demoralization ($r = -0.168$). Self-care ability was also found to be desirable in 84.7% of the patients. **Conclusions:** Hemodialysis patients can experience both positive and negative psychological changes. Self-care ability is associated with reductions in negative psychological problems and increases in positive psychological changes. Health-care providers can, therefore, help hemodialysis patients to improve their psychological conditions by making plans for improving self-care abilities.

Keywords: Demoralization, hemodialysis, posttraumatic growth, self-care

INTRODUCTION

Demoralization is a psychological complication that follows exposure to stressful events and refers to an inhibitory reaction to unbearable stresses.^[1] It emerges as a result of an inability to adapt to despair with persistent anxiety and perceived feeling of incompetence.^[1,2] Robinson *et al.* showed that 13%–33% of patients with chronic diseases experience demoralization syndrome.^[3]

As individuals who experience the stressful event of renal failure and permanent dependence on hemodialysis, hemodialysis patients can also report positive psychological changes. Tedeschi and Calhoun refer to this condition as “posttraumatic growth,” which means the subjective experience of positive psychological changes caused by coping with extremely challenging situations.^[4] Yorulmaz *et al.* reported a significant posttraumatic growth in patients with chronic renal failure.^[5]

Different factors can play a role in the emergence of positive or negative psychological changes, including the concept of self-care.^[6,7] According to Riegel *et al.*, self-care is considered essential in the management of chronic illness and is defined

as a process of maintaining health through health-promoting practices and managing illness. In this model, behaviors (self-care) used by patients with a chronic illness lead to maintain physical and psychological stability. Riegel *et al.* emphasize that one important intended outcome of self-care is decreasing psychological problems.^[8] According to the theory, increasing positive and decreasing negative psychological changes (posttraumatic growth and demoralization) may be an outcome of self-care. Some studies have reported improvements in psychological disorders in patients with a high self-care ability.^[7,9] Not only does self-care ability reduce negative psychological disorders, but also it has been found to contribute to positive psychological changes; for instance, Armstrong *et al.*

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observed higher levels of benefit-finding and posttraumatic growth in patients with higher levels of self-care activities.^[6]

Despite the emphasis placed in literature on the importance of self-care for improving psychological disorders,^[6,7] few studies have investigated the relationship between self-care ability and psychological changes, especially in hemodialysis patients. The primary aim of the study was to determine the relationship between self-care ability among hemodialysis patients with negative (demoralization) and positive (posttraumatic growth) psychological changes in hospitals affiliated to Ardabil University of Medical Sciences, Ardabil, Iran.

METHODS

Design

The correlational study examines the relationship between self-care ability and psychological changes in hemodialysis patients in the city of Ardabil, Iran.

Sample and setting

By census sampling method, all eligible patients willing to participate in the study were entered into the study after explaining the study objectives and ensuring them about the confidentiality of information. The inclusion criteria consisted of a history of at least 1 year of treatment with hemodialysis, a minimum age of 18 years, the ability to communicate and giving informed consent to participate in the study. The study population comprised 295 patients undergoing hemodialysis in Buali hospital in Ardabil, including 150 eligible candidates who completed the questionnaires. Figure 1 shows the process of selecting candidates. Patients who met the inclusion criteria were invited to participate in the study, and they filled out the questionnaires individually. Given that about half of the participants were not adequately literate, for the sake of uniformity of data collection method, the questionnaires were completed by the researcher by interviewing the subjects.

Instruments

The data collection tools used included demographic questionnaires, the demoralization scale, the posttraumatic

growth inventory, and the self-care questionnaire. The 24-item demoralization scale was designed by Kissane *et al.* in 2004, and its items are rated on a five-point Likert scale, ranging from 0 to 4, with higher scores denoting higher demoralization levels.^[10]

The “self-care ability in hemodialysis patients questionnaire” was developed by Heidarzadeh *et al.* in 2010 to determine self-care levels in hemodialysis patients. This questionnaire (range: 5–51, median: 27.5) comprised three parts, namely “ability of vascular access care” (range: 0–11, median: 5.5), “ability for following the diet” (range: 0–19, median: 9.5), and “general cares” (range: 5–21, median: 12.5). The scores assigned to the responses in the self-care ability scale were divided into two parts, and scores below median were considered unfavorable and those above median favorable.^[11,12]

The 21-item posttraumatic growth inventory (range: 0–105) designed by Tedeschi and Calhoun in the US in 1996 comprises five domains, including “new possibilities,” “relating to others,” “appreciation of life,” “personal strength,” and “spiritual change”.^[13] The validity and reliability of this tool were confirmed by Heidarzadeh *et al.* in 2017 in the Iranian population.^[14]

Ethical considerations

The present study was approved by the Ethics Committee of Ardabil University of Medical Sciences (IR.ARUMS.REC.1396.65). Before collecting the data, the researchers approached each of the study subjects, introduced themselves, briefed the subjects on the study objectives, ensured the confidentiality of their data, and obtained their written and verbal consent.

Analytical methods

The data were analyzed in SPSS for Windows, Version 15.0 (SPSS Inc., Chicago, Illinois, USA) using descriptive statistical indices, i.e., mean, median, frequency, percentage and standard deviation, and inferential statistical indices, i.e., Pearson correlation coefficient (self-care ability vs. posttraumatic growth and its dimensions) and Spearman’s correlation coefficient (demoralization vs. self-care ability).

RESULTS

Sample characteristics

We analyzed the data associated with 150 hemodialysis patients, with a mean age of 59.71 ± 14.1 years. Of them, 65.3% were male, 90% were married, and 48.7% were illiterate. Majority of the patients were on thrice a week hemodialysis regimen (80%) and had no history of prior renal transplantation (88.7%).

Characteristics of self-care ability

The obtained results showed a mean value of 33.89 ± 6.4 for self-care ability, and 84.7% of the participants had desirable levels of self-care. Moreover, the most favorable self-care ability was associated to the care of vascular access (88%),

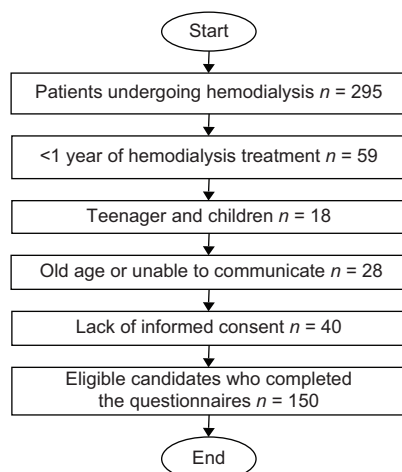


Figure 1: Exclusion candidates of the hemodialysis patients

and the most undesirable self-care ability to following the diet (40%) [Table 1].

Characteristics of posttraumatic growth

The mean and standard deviation of posttraumatic growth was 63.17 ± 17.71 . The highest mean score was associated to spiritual change among other dimensions of posttraumatic growth, which was respectively followed by relating to others, appreciation of life, personal strength, and new possibilities [Table 2]. The mean and standard deviation of demoralization was also found to be 36.25 ± 18.84 .

The relationship between self-care ability and psychological changes

According to Kolmogorov–Smirnov test self-care ability and posttraumatic growth have normal distribution ($P > 0.05$), but demoralization is not normal variable ($P < 0.05$). Investigating the relationship between self-care ability and psychological changes, we found a correlation coefficient of $r = -0.168$ between self-care ability and demoralization and showed that self-care ability explains 2.8% of the variance of demoralization, the correlation coefficient between self-care ability and posttraumatic growth was $r = 0.287$, and self-care ability explained 8.24% of the variance of posttraumatic growth [Table 3]. The results also showed that “new possibilities,” “personal strength,” and “appreciation of life” are positively and significantly associated to self-care ability [Table 3].

DISCUSSION

The present study was performed to investigate psychological changes, i.e., posttraumatic growth, demoralization, and self-care ability in hemodialysis patients. The results showed that hemodialysis patients have a high level of self-care ability, and there is a significant relationship between self-care ability and psychological changes.

Experiencing the stressful event of renal failure and the onset of hemodialysis can cause positive psychological changes such

as posttraumatic growth. This subject has been rarely addressed in literature concerning hemodialysis and renal failure patients. Yorulmaz *et al.* showed that patients with chronic renal failure experience significant levels of posttraumatic growth.^[5] The present findings obtained from investigating the dimensions of posttraumatic growth in hemodialysis patients were consistent with those obtained in other Iranian populations, including studies conducted on patients with myocardial infarction^[15] and cancer,^[14,16,17] attributing the highest mean score to spiritual change and relating to others and the lowest to new possibilities. In contrast, most of the studies conducted in western countries associated the highest mean score to the appreciation of life and personal strength and the lowest to spiritual changes.^[18,19] This discrepancy of results can be explained by the significant role of religious and traditional lifestyle of the Iranian community.^[14,15,20] According to Heidarzadeh *et al.* having a tendency toward spirituality is a major coping strategy adopted by the Iranian patients, which can cause their spiritual growth.^[16] Research also suggests that the support provided by family members and relatives, as the most effective supporters, dramatically increases at the time of stressful events.^[15,21]

The present study showed that hemodialysis patients also experience significant levels of negative psychological changes, such as demoralization. No consistent results were found in similar studies on demoralization in hemodialysis patients; a review of literature suggested demoralization in the studies conducted on clinical^[22,23] and nonclinical^[24] samples in western countries. Previously conducted studies in Iran also found patients with renal failure undergoing hemodialysis to face numerous stressful factors, including job loss, social problems, treatment problems, anxiety, despair, and reduced quality of life.^[25,26]

The results found about most of the hemodialysis patients to enjoy favorable levels of self-care ability (84.7%), and the highest scores were associated with vascular access care, followed by general care and diet. Furthermore, self-care ability was found to be a moderate predictor of psychological

Table 1: Self-care ability in the hemodialysis patients

Variable	Favorable-Unfavorable	Frequency (percentage)	Mean (SD)
Self-care ability	Unfavorable (5-27.5)*	23 (15.3)	33.893 (6.403)
	Favorable (27.6-51)	127 (84.7)	
	Total	150 (100.0)	
Dimensions of self-care ability			
	Vascular access care		8.086 (2.120)
	Following a diet		10.420 (3.398)
General cares	Unfavorable (0-5.5)	18 (12.0)	15.386 (4.067)
	Favorable (5.6-11)	132 (88.0)	
	Total	150 (100.0)	
Following a diet	Unfavorable (0-9.5)	60 (40.0)	15.386 (4.067)
	Favorable (9.6-19)	90 (60.0)	
	Total	150 (100.0)	
General cares	Unfavorable (5-12.5)	39 (26.0)	15.386 (4.067)
	Favorable (12.6-21)	111 (74.0)	
	Total	150 (100.0)	

*The numbers in parentheses are the sum of scores that were given to provide responses in tools which divided into two equal parts. The value less than median was considered unfavorable, and the value more than median was considered favorable. SD: Standard deviation

Table 2: Demoralization and posttraumatic growth scores in the hemodialysis patients

Variable	Number of items	Mean (SD)	Score range	Mean score of items
Demoralization	24	36.253 (18.842)	0-96	1.510
Posttraumatic growth	21	63.170 (17.710)	0-105	3.008
Dimensions of posttraumatic growth				
New possibilities	5	9.106 (6.458)	0-25	1.820
Relating to others	7	25.113 (6.185)	0-35	3.587
Personal strength	4	11.513 (4.758)	0-20	2.878
Appreciation of life	3	9.566 (3.326)	0-15	3.188
Spiritual change	2	8.320 (2.086)	0-10	4.160

SD: Standard deviation

Table 3: The relationship between self-care ability and psychological changes in the hemodialysis patients

Variable	Self-care ability
Posttraumatic growth	
Total score	$r=0.287$ $P<0.001$ Pearson test
New possibilities	$r=0.333$ $P<0.001$ Pearson test
Relating to others	$r=0.142$ $P=0.082$ Pearson test
Personal strength	$r=0.249$ $P=0.002$ Pearson test
Appreciation of life	$r=0.243$ $P=0.003$ Pearson test
Spiritual change	$r=0.031$ $P=0.705$ Pearson test
Demoralization*	$r=-0.168$ $P=0.039$ Spearman's Rho

*Demoralization is not normally distributed. According to Table 3, self-care ability is positively and significantly related to posttraumatic growth and negatively and significantly associated to demoralization

changes, as it had positive and significant relationships with posttraumatic growth and negative and significant relationships with demoralization. Manning-Jones *et al.* also found self-care ability to be associated with and positively predict posttraumatic growth.^[27] Similarly, Armstrong *et al.* showed that self-care ability among firefighters was a predictor for an increase in posttraumatic growth.^[6] Individuals with self-care ability appear to be able to strike a more effective balance between their life and stressful conditions by maintaining a healthy lifestyle through self-care and therefore to achieve positive psychological changes such as new possibilities in life and increased personal strength.

The present study found lower demoralization levels in people of a higher self-care ability, which associates self-care ability to reductions in negative psychological effects.

Similar studies have shown negative relationships between negative psychological changes and self-care ability; for instance, Kim and Dee and Oh *et al.* argued that high levels of self-care ability are associated with low levels of depression.^[28,29]

Study limitations and applications

This study found valuable information about self-care ability and its relationship with psychological changes in hemodialysis patients. Using validated scales that demonstrate various aspects of self-care and posttraumatic growth is one of the strongest points of the study. In spite of this, there were some limitations in the study. Given that the present study was descriptive and correlational, the results concerning the relationship of self-care ability with posttraumatic growth and demoralization should be cautiously generalized. Clinical trials are recommended to be conducted to determine the effect of self-care on psychological changes, and therefore provide stronger evidence on the matter. Furthermore, recall bias is not an unusual problem in the cross-sectional studies that may influence the results. Hence, doing cohort studies can give some more exact results. Given that the present study was conducted in the city of Ardabil in Iran, demographic and cultural features have definitely affected the results, which restrict the generalization of the results to other communities.

CONCLUSIONS

The study demonstrated a high level of self-care ability among hemodialysis patients in Iran. Self-care ability was a moderate predictor of psychological changes, with higher levels of self-care ability associated with higher posttraumatic growth and lower demoralization. It is worthwhile for nurses and other members of the health-care team to help hemodialysis patients adapt to the chronic hemodialysis therapy by improving various aspects of their self-care ability which would translate into improved psychological conditions. We could achieve a positive posttraumatic growth and reduce demoralization by consistently teaching self-care to these patients.

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Conflicts of interest

There are no conflicts of interest.

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