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Stressors and Coping strategies in dialysis patients

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ABSTRACT

Aims: Considering the increasing rate of hemodialysis patients, different results of previous studies, human's constant interaction with the environmental changes and living in today's modern world, people are exposed to a barrage of constant changes and stressors. These changes in chronic renal failure patients comparing to healthy individuals are more and different. The type of coping strategies used by the people depend on several factors including personal experience, social support systems, personal beliefs, available resources and genetic background .The study aimed to "identifying the type of experienced stressors and coping strategies used by hemodialysis patients".

Methods: In this descriptive correlational study, Hemodialysis Stressors Scale (HSS) and Jalowiec Coping Scale (JCS) were used to investigate stressors and coping strategies of 70 hemodialysis patients hospitalized in hospitals supervised by Medical Sciences University of Jiroft in 2013. Sampling was done through census sampling method. Data analysis was done by $SPSS_{20}$ software, the methods of descriptive and inferential statistics of chi-square type and Fisher's exact test with 95% Confidence Coefficient.

Results: The majority of samples (48/6%) were from 41 to 60 years old and 60% of them were male. 11/4 percent of them experienced physiological stressor and 88/6 percent experienced psychosocial stressors. Therefore psychosocial stressors were reported more bothering than physiologic stressors and patients experienced them more. Optimistic coping mechanism was the most common coping strategies used by the patients. The most frequent experienced physiological stressors included fatigue, limitations of fluids, limitations of food and arterial & venous stick and the most frequent psychosocial stressors included limits on the time & place for vacation, boredom, sleep disturbances and interference with job. There was statistically significant relationship between the percentage of experienced stressors in hemodialysis patients and their age (p=0/005).

Conclusions: Since psychosocial stressors were reported more bothering than physiologic stressors by the participants, decreasing or balancing them seems so essential. Being familiar with the experienced stressors and the amount of usage and effectiveness of the used coping strategies can help to provide appropriate programs to facilitate adaptation and acquiring necessary skills for patients and their families.

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1. Introduction

The most remarkable event that the human societies and health staff are encountered with in the 21st century is prevalence of chronic diseases, chronic renal failure is one of the common chronic diseases in the human societies and nowadays 2-3 percent of the people are suffering from this disease all around the world [1].

Prevalence of this disease is increasing in the world; the average global growth of this disease was 8% per year in the last 5 years [2].

In this regard, the chairman of transplantation department and Special Diseases of Health Ministry, Treatment and Medical Sciences reported that the growth rate of renal patients during the recent 10 years in Iran was 14% and the growth rate of dialysis patients was 12%. He reported that according to the last available documentations, 32686 kidney patients have been identified in the country and t 15957 of them were treated through hemodialysis method [3].

Chronic renal failure and its treatments lead to social psychological and physiologic stresses, which are challenging for the patients.

These patients need to cope with many physiologic and emotional stressors that are along with this chronic disease or are due to hemodialysis treatment. Identifying different kinds of experienced stressors and coping mechanisms used by these people is very important [4].

Patient's adaptation with hemodialysis device is psychologically important because an organ failure affects an individual's quality of life; therefore we have to trust the methods that improve patient's coping ability since true coping methods and effective adaptation with disease can increase the possibility of patient's rehabilitation [5] and improves his/her quality of life [6].

Every individual is constantly facing with different stressful situations, which can be pleasant or unpleasant [7].

Stress is an inevitable event in everybody's life; it impairs the body's homeostasis and causes stress and tension [8].

Although the term (stress) is used generally, its definition is very hard and complicated and it has different meanings for different people; in addition it has a different meaning for a person at different times and situations [7].

An individual's response to a stressful situation or event is often the results of learning or situational behavior.

Coping mechanisms are psychological strategies that a person uses consciously or unconsciously for overcoming stressful situations and returning to the normal emotional situation [4].

Also it can be said that they are innate and acquired mechanisms or a person's responding methods to a stimulus to cope with a change [8]. According to Lazarous stress model (1991), the basis of coping depends on stressor nature and a person's evaluation of the dependent stressor [9].

Since End Stage Renal Disease (ESRD) patients are facing with several and sometimes similar stressors, which influence their physiological and psychosocial performance [10], these patients, should cope with dependence on medical equipment and group and control stressful factors. Since coping mechanisms should be measured and evaluated according to an individuals' culture, society, values, norms, global insight , symbols and attitude [6], identifying and understanding stressful factors and effective coping methods in hemodialysis patients will help the nurses in managing dialysis patients' problems [10].

Some studies regarding assessment of stressors and coping mechanisms used by the dialysis patient were found through reviewing the last studies; among this, it can be pointed out to a descriptive correlation study by Logan et al (2009) in Canada on 50 hemodialysis patients with this title: stressors and coping mechanisms in patients with 65 years and older undergoing hemodialysis.

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The tools of this study included three HSS, JCS and demographic data questionnaires. Fatigue and limitation of liquids were in the highest rank and joint stiffness was in the lowest rank of the stressors in hemodialysis patients.

Most of the used coping mechanisms by the patients included; having a sense of well-being, seeing the good aspects and positive thinking; all of them are some examples of optimistic coping method [11].

Cinar et al. (2009) conducted a descriptive study in Turkey with this title: stressors and coping mechanisms in hemodialysis patients. HSS and Carver Coping Scale (CCS) questionnaire were the tools of this study; results of this study showed that occupation limitations, fatigue and uncertainty about the future respectively are the most common stressors.

The most used coping mechanisms included; returning to God, active coping and suppression of competing activities [12]. Another study was conducted by Mok and Tam (2001) on 50 hemodialysis patients with this title: 'coping stressors and strategies in chronic hemodialysis patients of Hong Kong'.

Results of the study showed that fluids limitations, food limitations, itching, fatigue and treatment costs were stated as the most common stressors.

Hemodialysis patients of this study used problem-focused coping mechanisms more than emotion-focused one [13]. There were some studies in this regard in Iran such as a study by Parvan et al (2010) with this title: 'stressful factors and coping methods of the patients undergoing peritoneal dialysis in Tabriz', it was done by using Peritoneal Dialysis Stressor Assessment Scale (PDSAS) and JCS questionnaire. In this study most of the stressors in peritoneal dialysis patients included; need to frequent replacement of dialysate, increasing demand for protein, boredom and loss of appetite.

Emotion-focused coping method was mostly used for coping with tension [14].

Another case-control study was done by Bagherian et al (2008) with this title: 'assessing the coping methods in hemodialysis patients'. The study was done by using JCS questionnaire on 100 hemodialysis patients and 100 volunteers who were visiting emergency patients in Isfahan. Their findings showed that patients are less likely to use direct coping method and they mostly use palliative and evasive style in dealing with stress, but healthy people mostly use direct coping method with the problem [15].

Considering different results of the last studies and since a human being is in constant interaction with environmental changes and living in today's modern world exposes people to a barrage of constant changes and stressors [8], The changes in chronic renal failure patients compared with healthy individuals are more and different.

The type of coping strategies used by and individual depends on several factors, including personal experience, social support systems, personal beliefs, available resources and genetic background [8, 16-17].

Nursing personnel can provide better support for the patients in order to overcome their stresses and to use more appropriate coping mechanisms by better understanding of hemodialysis patients' life experience [11]. Considering increasing number of the hemodialysis patients and shortage of the studies in this regard in Iran and according to the theory of Lazarus & Folkman (1984), which states that coping mechanisms should be measured and evaluated according to a person's culture, society, values, norms and worldview and the society symbols and attitude [13], findings of other countries can't be used in Iran because of cultural, religious social, symbols and … differences. Therefore it was necessary to conduct a study in this regard.

The present study is conducted with the aim of determining stressors and coping mechanisms used by hemodialysis patients in the hospitals supervised by Jiroft Medical Sciences University.

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2. Methods

This is a cross-sectional analytical descriptive study. Study population included all the hemodialysis patients of the hospitals supervised by Jiroft Medical Sciences University in 2012 (Imam Khomeini hospital in Jiroft and 12 of Farvardin in Kahnouj), 77 patients were participated in the study; 7 of them did not participate in the study because of lack of inclusion criteria or lack of satisfaction to participate in the study.

Finally 70 hemodialysis patients of the hospitals supervised by Jiroft Medical Sciences University were included in the study through census sampling method. Inclusion criteria included;

1. Being older than 18 years old
2. Passing at least four months of dialysis

Table 1: Frequency distribution of demographic indicators of hemodialysis patients of the hospitals supervised by Jiroft Medical Sciences University

Demographic features	Range	Frequency	Frequency percentage
Age	18 to 40 years old	18	25.7%
	41 to 60 year sold	34	48.6%
	61 to 80 years old	16	22.9%
	Older than 81 years old	2	2.8%
Gender	Male	42	60%
	Female	28	40%
Marital status	Single	11	15.7%
	Married	48	68.6%
	Widow/widower	11	15.7%
Education level	Illiterate	30	42.9%
	Ability to read and write	14	20.0%
	Under diploma and diploma	21	30%
	BA and higher	5	7.1%
Occupation situation	Unemployed	26	37.2%
	Employed	6	8.6%
	Self-employed	5	7.1%
	Housewife	15	21.4%
	Retired	18	25.7%
Renal failure detection time	Less than one year	16	22.9%
	1 to 5 years	41	58.6%
	6 to 10 years	12	17.1%
	More than 11 years	1	1.4%
Number of hemodialysis per week	Once a week	1	1.4%
	Twice a week	13	18.6%
	Three times a week	56	80%
Major change in treatment with hemodialysis	Yes	22	31.4%
	No	48	68.6%

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treatment
3. Absence of major psychiatric disorder confirmed by neurologist or psychiatrist
4. Not being treated by a psychiatrist and lack of consumption of psychotropic drugs
5. Lack of cognitive disorder or lack of weakness in cognitive functioning.
Data collection tools included:
1.demographic information questionnaire included; age, gender, marital status, occupation status, disease duration, education level, history of renal transplantation, and the period of time that have been passed from the first diagnosis of renal failure and whether there was any major change in in his/her dialysis treatment during the last 6 months or not.
2. HSS standard questionnaire was designed by Baldree et al in 1982.
This questionnaire measures physiologic and psychosocial stressors experienced by hemodialysis patients; a 31-item balanced form was used for this purpose.
3. JCS was reviewed and designed by Jalowiec in 1995.
This questionnaire was used to determine type of coping mechanisms used by the patients and the amount of effectiveness and usefulness of these coping mechanisms; the balanced form included two parts and 59 items:
A) (The amount of using a coping mechanism): every one of the answers had 0 to 3 scores. A 4-degree Likert scale including; never (0), rarely (1), sometimes (2) and often (3) was used. Every one of the items showed a coping model

Table 2: Fisher test statistics related to the experienced stressors by hemodialysis patients according to their age in the hospitals supervised by Jiroft Medical Sciences University.

Age range / Stressors	18 to 40 Years old (%)	41 to 60 Years old (%)	61 to 80 Years old (%)	Older than 81 Years old (%)	Significant level
Physiological	0	(25)2	(75)6	0	0.005
Psychosocial	(29)18	(51.6)32	(161)10	(3.2)2	
Total	(25.7)18	(48.6)34	(22.8)16	(2.9)2	

Table 3: Coping strategies frequency distribution in hemodialysis patients of the hospitals supervised by Jiroft Medical Sciences University

Coping strategies	Frequency	Frequency percentage	The mean of rank	Rank
Optimistic	17	24.2%	7.04	1
Evasive	3	4.3%	6.99	2
Direct confrontation	6	8.6%	5.94	3
Self-reliance	6	8.6%	4.86	4
Seeking support	9	12.9%	4.48	5
Emotional	8	11.4%	2.64	6
Compulsion	19	27.1%	2.52	7
Palliative	2	2.9%	1.52	8

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and it included 8 coping models; coping model of direct confrontation, evasive, compulsion, optimistic, emotional, palliative, supportive and self-reliance.

B) The amount of usefulness of the used coping mechanism: every one of the answers had 0 to 3 scores. A 4-degree Likert scale including; not useful at all (0) rarely useful (1), almost useful (2) and very useful (3) was used too. Both questionnaires were translated to Persian through forward and backward method by three experts; they were translated to English by other three experts and the level of its adaptation with the main version was evaluated and necessary modifications were performed. Face validity was confirmed by ten members of the faculty members of Razi Nursing and Midwifery College in Kerman and retest method was used for 10 hemodialysis patients for determining reliability of the questionnaires and the correlation of the items were evaluated by Coronabach's alpha.

The calculated Coronbach's alpha for HSS and JCS questionnaires was respectively 0.88 and 0.89 (for both parts (a and b) of the JCS questionnaire).

Data analysis was done by SPSS 20 software, descriptive statistic methods (frequency distribution table, average and frequency), chi-square inferential statistic method, Fisher's exact test and Levon and the Cronbach's alpha test.

The aims of the study were explained to the subjects of the study, then written and informed consent was taken from them.

Firstly demographic information questionnaire was given to the patients and in the next stages two other questionnaires were given to them to fill.

Some of the patients could not fill in the questionnaires due to some vision problems or illiteracy, so that the questionnaire was read by the researcher and enough time for answering the question was given to these patients and the answers were recorded by observing the trustworthiness.

3. Results

Most of the subjects of the study (48.6%) were from 41 to 60 years old, 42 of them were male (60%), 48 married (68.6%), 30 illiterate (42.9%), 26 unemployed (37.1%); it was 1 to 5 years of diagnosing renal failure in 58.6% (41 patients) of the patient, 80% (56 patients) came for hemodialysis three times a week, 68.6% (48 patients) did not feel much difference in treatment with dialysis during the last six months and 90% (63 patients) were not treated by renal transplantation (table 1). Considering the achieved results from data analysis, 11.4% and 88.6% of the patients respectively experienced physiologic and psychosocial stressors, therefore hemodialysis patients of the hospitals supervised by Jiroft Medical Sciences University reported psychosocial stressors more bothering.

Most of the physiologic stressors that were bothering to a high extent respectively included fatigue, liquid limitations, food limitations and arterial & venous stick and the least physiologic stressors regarding the amount of its bothering respectively included joint stiffness and limitation in styles of clothing.

Most of the psychosocial stressors that were bothering hemodialysis patients to a high extent respectively included limits on the time & place for vacation, boredom and sleep disturbances. Psychosocial stressors that were less bothering respectively included transferring to other wards and reversal in the family roles about children.

Most of the coping mechanisms used by the hemodialysis patients of the hospitals supervised by Jiroft Medical Sciences University were respectively; optimistic coping mechanism, evasive and direct confrontations (table 3) and these three coping mechanisms were also the most useful coping mechanisms. The least used coping mechanisms were palliative coping mechanism and compulsion. Most of the used coping strategies respectively included: praying, praying and trusting God, trying to deal with the problem, desire to solve the problem, day dreaming of a better life and

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worrying about the problem. The least used coping strategies respectively included: smoking more than usual, taking medication for stress reduction and using relaxation techniques.

Fisher's exact test was used for measuring relationship between the kind of experienced stressors by hemodialysis patients, their used coping mechanisms and demographic variables. There was no significant statistical difference between the type of stressors and demographic variables of gender (p=0.59), marital status (p=0.132), education (p=0.601), occupation (p=0.229), hemodialysis treatment duration, number of hemodialysis times per week (p=0.292) and having the experience of renal transplantation. There was significant statistical relationship between the percentage of experienced stressors and age (p=0.005) (table 2), so that hemodialysis patients from 18 to 40 did not report any physiologic stresses, but patients from 61-80 reported the most physiologic stresses and patients from 41 to 60 reported the highest psychosocial stress. There was no significant statistical difference between the level of coping mechanisms and age (p=0.557), gender (p=0.694), marital status (p=0.796), education level (p=0.421), occupation (p=0.364), number of hemodialysis times per week (p=0.762) and hemodialysis treatment duration. There was no statistical significant difference between the experienced stressors and coping mechanisms used by hemodialysis patients of the hospitals supervised by Jiroft Medical Sciences University (p=0.27).

4. Discussion

Results indicated that most of the samples of the study (88.6%) experienced psychosocial stressors and they considered them more bothering than physiologic stressors.

In the analytical descriptive study conducted by Mok and Tam (2001), it was shown that patients' physiologic stresses are more important and bothering [13], which is not in consistent with the present study. This difference can be due to different understanding of stressors because of social and cultural differences of the societies. Parvan et al (2010) and Lock (1996) reported that psychosocial stressors in dialysis patients are more bothering than physiologic stressors [4, 14]. Results of this study showed that the most bothering physiologic stressors respectively include; fatigue, limitations of fluid and limitations of food and arterial & venous stick. In the studies conducted by Logan (2006) and Thomas (2001), the most experienced physiologic stressor was fatigue [18, 11].

In the open-ended questions of this study, subjects of the study mentioned other stressors that there was no item about them in the HSS questionnaire, but there was enough space for them.

These issues include delay in wound healing, coagulation disorders, need to frequent blood transfusions, lack of social support by the government, long-term expectation for hemodialysis treatment and lack of appropriate job opportunities and they are almost similar to the results of the study of Burns (2004) , which had pointed to these issues too [19].

Most of the psychosocial stressors in hemodialysis patients, which were bothering a lot respectively included; limits on time and place for vacation, boredom, disturbance in sleep, occupation and social life.

Also in the study of Logan (2006), most of the psychosocial stressors were about limits on time and place for vacation [11], but the stressor of disturbance in social life was in the second rank of the study of Logan and it was in the fifth rank of the present study.

Perhaps, this difference is because of that there are more chances provided for these people in Canada to participate in social activities that the disease causes disturbance in them; when such a chance is less prepared, naturally it is among the stressful factors in the patients' point of view.

In the study of Thomas (2001), most of the reported psychosocial stressors respectively

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included depression, grief, irritability and dependence on others.

This difference can be due to using the 23-item HSS questionnaire or because of that psychiatric disorders were among exclusion criteria in Jiroft hemodialysis patients. In the study of Tsay et al (2005), most of the stressors included limits on time and place for occupation, limits on travelling and movement, liquid limitation, losing physical function, long duration of treatment and limit on physical activities; except about limit on physical activity, results of his study are in consistent with this study [20].

Results of this study indicate that most of the used coping strategies respectively included; optimistic coping strategies and direct and excited confrontation [11].

In this study and the study of Logan et al, optimistic method was in the first rank in terms of the amount of its usage. But palliative mechanisms were in the third rank of the study of Logan and the last rank of this study; it shows that in Hong Kong, hemodialysis patients used more of some palliative methods such as hiking and relaxation.

This difference is probably due to successful preparations, education and providing some good conditions for these patients in that country and it shows these patients' educational need, which needs nurses' education and intervention.

Most of the used coping strategies in hemodialysis patients of the hospitals supervised by Jiroft Medical Sciences University are respectively; praying, talking or trusting to God, trying to deal with the problem, desire to solve the problem, dreams of better life and worrying about the problem. These results are in contrast with the results of Logan, in his study most of the coping strategies are respectively; effort for making sense of satisfaction, watching the good aspects of the situation, effort for having positive thinking, effort for controlling the situation, praying and trusting to God.

This difference is probably because of the role of religion and religious believes in understanding and coping with the daily stress by considering the importance of role of religion in life of people of our country. In divine religions, there is a special believes in the role of praying and talking and trusting to God in daily activities and Islam is not an exception.

There are many studies that confirmed the role of religion in the used coping mechanisms [21-23].the least used coping strategies included; smoking more than usual, consuming drugs to reduce stress and using palliative methods; lack of patients' familiarity with palliative methods can explain that.

Regarding less usage of "smoking more than usual" strategy, it can be said that these patients use less of this method because of disease and fear of more harm and because of this they have less consumption of the drugs too.

In the study of Parvan et al (2010) in Tabriz, peritoneal dialysis patients mostly used emotion-focused coping methods such as; praying, talking and trusting to God in dealing with stress, not allowing the problem to disrupt and accepting the conditions because he/she can't do a lot for that [14]; all of them are in consistent with the present study except not allowing the problem to disrupt; it seems that the differences are because of different patients' personality, supportive systems and health problems.

There was no statistical significant difference between the percentage of using coping strategies and the patients' ages (p=0.557). In the study of Logan, there was a significant negative relationship between the age and the efficacy of coping mechanisms (B=-0.323) [11].

In the study conducted by Parvan et al, there was a weak negative relationship between age and the amount of using coping strategies [14].

There was no statistical significant difference between the percentage of coping strategies and patients' gender (p=0.694).

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In the study of Yen, women mostly used emotion-focused and supportive coping mechanisms and men mostly used problem-focused and avoidant coping strategy [9].

These different results can be due to people's different roles based on the culture governing their gender in the society.

There was no significant relationship between gender and coping strategies in the studies of Parvan et al (2010) and Mahmoudi et al (2004).

5. Conclusions

Considering that nursing staff provides the most services for these patients, they can provide more support for them by better understanding of the hemodialysis patients' life to overcome their stresses and to have a higher quality of life. Results of this study, which were about perceiving and understanding stressors and coping mechanisms of hemodialysis patients can help the nurses to design some interventions to facilitate coping with the problems in these patients.

Also these results can help patients and their families to provide appropriate educational programs to achieve useful coping skills.

Being aware of the experienced stressors and effective coping strategies used by the hemodialysis patients, nurses can design appropriate interventions at the time of dialysis by considering that the treatment is time-consuming and by noticing the patients' weekly referrals for dialysis.

Nursing managers and curriculum planners can use the achievements of this study for promoting educational programs of patients, nurses, students and families.

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