

<http://www.pjbs.org>

PJBS

ISSN 1028-8880

**Pakistan
Journal of Biological Sciences**

ANSI*net*

Asian Network for Scientific Information
308 Lasani Town, Sargodha Road, Faisalabad - Pakistan

Assessment of the Relationship Between Quality of Life and Stress in the Hemodialysis Patients in 2008

¹Vida Shafipour, ²Hedayat Jafari, ³Lila Shafipour and ⁴Ebrahim Nasiri

¹Department of Medical Surgical Nursing, Azad University Nursing College, Sari, Iran

²Department of Medical Surgical Nursing, Nasibeh Nursing and Midwifery School, Mazandaran University of Medical Sciences, Sari, Iran

³Sari, Mazandaran Province, Iran

⁴Department of Nurse Anesthesia, Paramedical Sciences School, Mazandaran University of Medical Sciences, Sari, Iran

Abstract: The aim of this study was to determine the relationship between quality of life with stress in the haemodialysis patients. This descriptive correlation study was done on 100 haemodialysis patients selected by consent method from Imam Khomeini and Fatemeh Zahra Hospitals in Sari/Iran from March 2008 to February 2009. Data were collected in questionnaire consisting of 3 sections (demographic feature, quality of life and stress) in three months. In the questionnaire, first, quality of life then stress in the patients was studied and the variables described. Then the relation between them was determined by statistical analysis. From the total number of 100 patients (53 men and 47 women) under study, 42% with partial comfortable life had moderate tension. Pearson correlation coefficient showed that there is a significant linear relationship with quality of life and degree of tension, ($r = 0.802$). That is with increase of tension, quality of life declines ($p < 0.001$). Also Pearson correlation coefficient indicated that there is positive correlation between the number of hemodialysis per week and the history of dialysis ($p = 0.001$). History of dialysis in 69% of the patients was 1-5 years and 74% of them were dialyzed in the morning trice a week. Findings showed that, with increase of stress, quality of such patients' life decreases. Therefore, the nurses and the other members of medication team should know to reduce the patient's stress using the supportive procedures and adaptation techniques, help improve quality of life by proper intervention method.

Key words: Hemodialysis, stress, quality of life, patient, nurse, adaptation

INTRODUCTION

End Stage Renal Disease (ESRD) is one of the main problems of health care organization and the main cause of mortality world wide (Nasiree, 2004). Studies in the USA in 2006 revealed 5062 56 (283713 male and 222533 female) cases of ESRD, with 3.2% increase compared to the year 2005 (US Renal Data System, 2008).

This disease is observed in any age and based on the report given in 2006, the mean age of ESRD prevalence is 58.8 year (US Renal Data System, 2008). Data show that annually 200000 American undergo hemodialysis due to the chronic renal disorder. That is, 1140 in one million American are dialysis patients (US Renal Data System, 2008), but the case in Iran is 253 in one million of population which is increasing and most of such patients are under regular dialysis. Hemodialysis is as an

alternative way of treatment in the chronic kidney failure patients. Though hemodialysis gives more chance of living to the patients (Morsch *et al.*, 2006) but it causes tension in the patients, therefore strategies should be implemented to help the patients improve their coping with the existing circumstances (Tagay *et al.*, 2007; Blake and Courts, 1996). In today's life, improvement of life standard is very important. Quality of life is the distance between the expectation and the patient's experiences. Generally patients with the same clinical conditions, experience different quality of life (Carr *et al.*, 2001). Therefore, evaluation of patients' life quality helps the health care staff to know more about the patient performance and their feeling of well being to implement proper strategies in improving their life quality (Sayin *et al.*, 2007). In this regard, the researchers believe that, though the alternative treatments help them much,

Corresponding Author: Hedayat Jafari, Department of Medical Surgical Nursing, Nasibeh Nursing and Midwifery School, Vesal Street, Amir Mazandarani Boulevard, Sari, Mazandaran Province, Iran
Tel/Fax: +98 151 2268915

but improving of quality of life is the main objective of the dialysis (Mozes *et al.*, 1997). Because, care is not the real aim of treatment, but improving quality of life with maximum performance and feeling of well being, ability in doing daily life activities and reducing the effective factors in such patients are the matter of consideration (Carr *et al.*, 2001; Sayin *et al.*, 2007). The ESRD and its treatment had deep effect on the individuals' family life (Morsch *et al.*, 2006). The patient 2-3 times under dialysis per week and being connected to the dialysis machine several hours make them faces certain restrictions of negative impact (Lindqvist *et al.*, 2000). These patients experience different level of tensions relevant to the physical and mental affairs and use different mechanisms of adaptation (Mok and Tam, 2001; Lok, 1996). The dialysis patients face different problems with negative consequences on life, in a way that, compared to the healthy persons have significantly declined quality of life (Morsch *et al.*, 2006; Tagay *et al.*, 2007). Studies showed that the mental disorder is more in the hemodialysis patients compared to the normal individuals and leads to cardio vascular diseases, frequent hospitalization and death (Smeltzer and Bare, 2004). Since, the hemodialysis patients experience complications of the diseases like, physical, social and economic problems and the moral responses which result in lowering of the life standards. It demands the implementation of adaptation to the new situations (Morsch *et al.*, 2006). Evaluation of the quality of life needs the treatment strategies planning to determine the efficiency of the rendered medical care (Sayin *et al.*, 2007). Hence, this study was conducted to determine the quality of life and its relation with the severity of tension in the hemodialysis patients in order to draw attention of the nurses to the role and impact of different stressors and their reduction in such patients.

MATERIALS AND METHODS

In this correlative descriptive study, the quality of life of the hemodialysis patients who selected by consent method from Imam Khomeini and Fatemeh Zahra Hospitals in Sari/Iran from March 2008 to February 2009. was evaluated in two somatic and mental aspects, then the severity of tension and the related variables were described, finally the relation between two variables was studied. The subjects under study were 100 patients (53 male and 47 female) aged 20 to 65 years.

After obtaining consent from the participants, samples were collected from two hemodialysis centers of Sari Township. Data were collected within three months by filling the questionnaire comprising three sections (Demographic features, quality of life and severity of

tension). The first section for the personal features like age, sex, marital status, profession, education, history of hemodialysis, the number and time of hemodialysis in a week; the second section about the tool of assaying the quality of life, SF-36 (Designing was done by the international organization for studying the quality of life), comprising the domain of performance and physical role, general health, joy, social performances and emotional factors. The questions scaled orderly from 0 to 5 (the zero stands for the worst and five for the best possible condition of patient). The general scores of the questions were designated from 0 to 1000 and on the basis of the subjects, answers on quality of life was designated as good (between percentile of 75th and higher) to suitable or medium (between percentile of 25th to 75th) and bad (lower than 25th), the third section was about the Baldree tool of assaying hemodialysis tension (Baldree *et al.*, 1982). It was designed in 1982 with 29 questions under two basic subclasses of physiologic (6 items) and psychosocial (23 items) under the Likert 5-scale (15). The general scores were 0 to 84 and based on the patients answer the tension severity was designated as severe (60 to 84) medium (40 to 60) and light (0 to 40). The data were collected by the researcher referring to the hemodialysis centers, explaining the purpose of study and drawing attention of the patients for answering. The obtained data were analyzed by descriptive and inferential statistics methods using SPSS software. Independent t-test, analysis of variance and χ^2 tests were used for determining the significance of the relation between context variables and severity of tension and quality of life. Pearson coefficient and linear regression were used for determining the significance of the relationship between quality of life and tension severity.

RESULTS

Of 100 patients, 75% with reading level education, 2% with university degree, 83% unemployed, economic status in 65% was medium and 2% well to do. In 69% history of hemodialysis was five years and 74% of them were hemodialyzed trice week. Results indicated that 25, 42 and 33% of the subjects had good, moderate and bad quality of life respectively. The χ^2 test showed significant relationship between quality of life and different age groups ($p = 0.009$, $\chi^2 = 6.214$), also between different levels of life standard with marital status and profession. But results indicated that there is insignificant relationship between quality of life and education, history, time and number of hemodialysis (Table 1).

The data on tension intensity in the hemodialysis patients indicated that 25, 46 and 29% of the subjects

Table 1: Frequency distribution of the samples based on the quality of life and demographic variables

Variables	Quality of life			p-value
	Good	Moderate	Bad	
Age				
20-40 year	7 (43.8)	6 (37.5)	3 (18.8)	0.009
40-60 year	11 (30.6)	17 (47.2)	8 (22.2)	
above 60 year	7 (14.6)	19 (39.6)	22 (45.8)	
Sex				
Female	8 (17)	18 (38.3)	21 (44.7)	0.02
Male	17 (32.1)	24 (45.3)	12 (22.6)	
Total	25 (25)	42 (42)	13 (33)	
Marital status				
Single	3 (50)	3	0 (0)	0.05
Married	18 (25.7)	32	20 (28.6)	
Expired spouse or divorced	4 (16.7)	7	13 (54.2)	
Occupation				
Un employed	17 (20.5)	35 (42.2)	31 (37.3)	0.023
Part time	2 (25)	5 (62.5)	10 (12.5)	
Full time	6 (66.7)	2 (22.2)	1 (1.11)	

Values in brackets indicate percentage

Table 2: Frequency distribution of the samples based on the degree of tension, sex and occupation

Variables	Degree of tension			p-value
	Light	Moderate	Severe	
Sex				
Male	17 (32.1)	26 (49.1)	10 (18.9)	0.008
Female	8 (17)	20 (42.6)	19 (40.4)	
Occupation				
Unemployed	19 (22.9)	36 (43.4)	28 (33.7)	0.048
Part time	11 (12.5)	6 (75)	1 (12.5)	
Full time	5 (55.6)	4 (44.4)	0 (0)	

Values in brackets indicate percentage

had light, moderate and severe tension respectively. Independent t-test showed significant difference between tension severity and sex in male and female groups ($t = 2.7$, $p = 0.05$). Also, χ^2 showed significant relationship between tension severity and various occupational situations ($p = 0.048$, $\chi^2 = 9.603$). Analysis of variation did not show significant relationship between mean of tension severity and age groups, marital status, education and economic condition. χ^2 test revealed insignificant relationship between tension severity in age groups and history, time and number of hemodialysis (Table 2). But there was significant correlation between history and number of dialysis ($p = 0.001$, $r = 0.38$).

Pearson's correlation coefficient test was used to determined significant relationship between quality of life and tension severity in the patients, ($r = 0.802$). In fact there is a reverse linear relationship between quality of life and tension severity. That is with increase of tension, quality of life declines ($p < 0.001$). Data indicated that 79.3% of the patients with bad quality of life had more tension severity (Table 3). The linear regression relationship between scores of quality of life and the scores of tension severity with $R^2 = 0.64$ and $B = 1.149$ was as follow:

The scores of quality of life = $120.6 + (- 1.149) \times$ Tension scores

Table 3: Frequency distribution of quality of life based on the degree of tension in the patients under hemodialysis

Degree of tension	Quality of life		
	Good	Moderate	Bad
Light	18 (72)	7 (28)	0 (0)
Moderate	7 (15.2)	29 (63)	10 (21.7)
Severe	0 (0)	6 (20.7)	23 (79.3)
Statistical result			
$r = 0.802$			
$p < 0.001$			

Values in brackets indicate percentage

DISCUSSION

Based on the results obtained from the present study it was noticed that 42% of the patients with relatively good quality of life had medium tension and there was a significant linear and inverse or negative relationship, that is, with increase of tension in the patients, quality of life declines ($p = 0.001$). Sayin *et al.* (2007) on their study on 75 hemodialysis patients, 41 peritoneal dialysis and 20 kidney transplant patients found that depression and anxiety have negative impact on such patients and the hemodialysis patients scored the worst condition on quality of life (Sayin *et al.*, 2007). The other researchers also reported that there is an inverse relationship between quality of life and the degree of tension in the hemodialysis and peritoneal dialysis patients (Tagay *et al.*, 2007; Lok, 1996).

In groups, the physiologic stressors and socio psychological factors had negative relation with quality of life and with increase of tension, quality of life reduced (Lok, 1996). Tagay *et al.* (2007) reported that quality of life in the patients with ESRD declined significantly as compared to the normal people. Psychological disorders in the dialysis patients with long history of dialysis were more common than the normal people with negative effect on their life. The more was symptoms of anxiety and depression in such patients the less quality of life (Tagay *et al.*, 2007). The results of Sayin *et al.* (2007), Tagay *et al.* (2007), Lok (1996) and Morsch *et al.* (2006) studies were similar to our results.

In fact there is an inverse relationship between symptoms and patient evaluation from the view of quality of life and life consent. The more report on symptoms of disease the lower quality of life (Kimmel *et al.*, 2003).

In fact disease tension leads to reduction on quality of life because hemodialysis has affects on mental health and psychosocial condition of the patients and causes certain restriction on their life style. Some patients are under hemodialysis three sessions/week of 4 h in each session. This condition influences their health care planning, professional and economic status, self esteem and the level of independency (Niu and Li, 2005).

Therefore evaluation of quality of life and mental status must be part of (ESRD) patients care program (Steele *et al.*, 1996). The obtained data showed that the mean of quality of life in different age groups has statistically significant differences, that is, people enjoy less quality of life on aging, to such an extent that, Niu and Li (2005) reported that age is a main effective factor on quality of life. Pucheu *et al.* (2004) found that age has significant relationship with physical activities and quality of life. In this regard the other researchers found that various factors such as, HB and albumin levels, mental factors, marital status, age above 46 years, being male and disease period affect quality of life in the dialysis patients (Sayin *et al.*, 2007). The obtained data indicated that there is significant difference between male and female from the view point of mean of life's quality and men enjoy more quality of life. Similar report has been given by Pucheu *et al.* (2004).

Feeling of fear was reported more in women (Tagay *et al.*, 2007). Comparatively men showed higher quality of health (Morsch *et al.*, 2006). Data revealed that quality of life in different occupational conditions has statistically significant difference and jobless individuals enjoy less quality of life (Morsch *et al.*, 2006). Researchers found that the unemployed patients score less quality of life compared to the employed staff (Blake and Courts, 1996; Niu and Li, 2005).

Findings showed statistically significant relationship between level of quality of life in married individuals and the separated couples enjoy less quality of life. Reports indicated that there is significant relationship between different levels of quality of life and marital status. Morsch *et al.* (2006) demonstrated that there is insignificant relationship between quality of life and marital status. Data indicated that tension intensity increases with aging. Mok and Tam (2001) reported that individuals above 55 years are exposed to more stressors. Finding revealed that men face less tension and difference of tension's mean score is significant in males and females, but the other researchers reported insignificant difference of tension intensity in males and females (Mok and Tam, 2001; Pucheu *et al.*, 2004). Also findings indicated that patients with 1-5 years hemodialysis face more tension compared to the other groups, but in all, the relation was insignificant. In this regard, Logan *et al.* (2006) demonstrated that the period of hemodialysis has no effect on evaluation of determining the stressor and its relationship with tension intensity. Finding indicated that history of hemodialysis has positive relation with tension and those with history of long term hemodialysis experience more tension (Lok, 1996). Chronic renal disease and its treatment lead to much tension in the

patients. Therefore hemodialysis patients experience much tension and must follow different adaptive strategies (Kimmel *et al.*, 2003).

In fact, understanding the patient's experience of facing stressors and the adaptive procedures are used as reference for therapeutic team in managing proper intervention. These findings help us clear the nursing procedures. Designing the evaluation of quality of life together with identification of stressors, enable the patients to have positive view towards their life and health. Since majority of the patients don't have the efficiency in proper evaluation of their life, therefore it is necessary the professional care givers provide useful information to the patients. The nurses and the care giver team can help them improve their quality of life by supporting, giving information and the adaptive procedures (Mok and Tam, 2001; Lok, 1996). Because reduction of stressors and increase of satisfaction from life are the main objectives of nursing performance (Logan *et al.*, 2006).

ACKNOWLEDGMENTS

Thanks to the Research Deputy of Azad University, Sari Branch with grant Number 5-15411 and Research Deputy of Mazandaran University of Medical Sciences with grant Number 86-38 for financial supports of this research and to all of the patients who participated in this study.

REFERENCES

- Baldree, K.S., S.P. Murphy and M.J. Powers, 1982. Stress identification and coping patterns in patients on hemodialysis. *Nurs. Res.*, 31: 107-112.
- Blake, C.W. and N.F. Courts, 1996. Coping strategies and styles of hemodialysis patients by gender. *ANNA J.*, 23: 477-507.
- Carr, A.J., B.A. Gibson and P.G. Robinson, 2001. Measuring quality of life: Is quality of life determined by expectations or experience?. *B.M.J.*, 322: 1240-1242.
- Kimmel, P.L., S.L. Emont, J.M. Newmann, H. Danko and A.H. Moss, 2003. ESRD patient quality of life: Symptoms, spiritual beliefs, psychosocial factors and ethnicity. *Am. J. Kidney Dis.*, 42: 713-721.
- Lindqvist, R., M. Carlsson and P.O. Sjöden, 2000. Coping strategies and health-related quality of life among spouses of continuous ambulatory peritoneal dialysis, haemodialysis and transplant patients. *J. Adv. Nurs.*, 31: 1398-1408.

- Logan, S.M., M. Pelletier-Hibbert and M. Hodgins, 2006. Stressors and coping of in-hospital haemodialysis patients aged 65 years and over. *J. Adv. Nurs.*, 56: 382-391.
- Lok, P., 1996. Stressors, coping mechanisms and quality of life among dialysis patients in Australia. *J. Adv. Nurs.*, 23: 873-881.
- Mok, E. and B. Tam, 2001. Stressors and coping methods among chronic haemodialysis patients in Hong Kong. *J. Clin. Nurs.*, 10: 503-511.
- Morsch, C.M., L.F. Goncalves and E. Barros, 2006. Health-related quality of life among haemodialysis patients-relationship with clinical indicators, morbidity and mortality. *J. Clin. Nurs.*, 15: 498-504.
- Mozes, B., E. Shabtai and D. Zucker, 1997. Differences in QOL among patients receiving dialysis replacement therapy at seven medical centers. *J. Clin. Epidemiol.*, 50: 1035-1043.
- Nasiree, M., 2004. Determined of factors QOL in hemodialysis from interview patients and nursing. *Shakiba J.*, 4: 6-7 (In Persian).
- Niu, S.F. and I.C. Li, 2005. Quality of life of patients having renal replacement therapy. *J. Adv. Nurs.*, 51: 15-21.
- Pucheu, S., S.M. Consoli, C. D'Auzac, P. Francais and B. Issad *et al.*, 2004. Do health causal attributions and coping strategies act as moderators of quality of life in peritoneal dialysis patients? *J. Psychosomatic Res.*, 56: 317-322.
- Sayin, A., R. Mutluay and S. Sindel, 2007. Quality of life in hemodialysis, peritoneal dialysis and transplantation patients. *Kidney Transplant.*, 10: 3047-3053.
- Smeltzer, S.C. and B. Bare, 2004. Brunner and Suddarth's, Textbook of Medical-Surgical Nursing. 10th Edn., Lippincott Williams and Wilkins, USA., ISBN-13: 978-0781731935, pp: 2352.
- Steele, T.E., D.M. Baltimore, S.H. Finkelstein, P.A. Juergensen, A.S. Klinger, F.O. Finkelstein, 1996. Quality of life in peritoneal dialysis patients. *J. Nervous Mental Dis.*, 184: 368-368.
- Tagay, S., A. Kribben, A. Hohenstein, R. Mewes and W. Senf, 2007. Posttraumatic stress disorder in hemodialysis patients. *Am. J. Kidney Dis.*, 50: 594-601.
- US Renal Data System, 2008. Annual data report (USRDS): Atlas of kidney disease and ESRD in United States, chapter two incidence and prevalence of reported ESRD. National Institutes of Health, pp: 31. <http://www.usrds.org/2008.htm>.