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Quality of Life in Hemodialysis Patients at Ardebil University of Medical Sciences (Arums) and Factors Affecting it

[1]S. Sadeghieh Ahari, [2]B. Bashardoost, [3]F. Amani, [4]M.A. Mohammadi, [5]H. Siahpoosh and [6]R. Arab
[1]Department of Community Medicine, [2]Department of Nephrology,
[3]Department of Biostatistics, [4]Department of Nursing,
[5, 6]Department of TEFL, Ardebil University of Medical Sciences, Ardebil, Iran

Abstract: Today, hemodialysis is the most common and practical technique for the treatment of patients with chronic renal failure. In spite of this technique, the quality of life of these patients has been a debatable issue. The purpose of this research, is to study the quality of life of hemodialysis patients. This descriptive, cross-sectional study consisted 100 hemodialysis patients of all the hemodialysis patients who had referred to hemodialysis centers of Ardebil University of Medical Sciences. The data were collected through a questionnaire which was inspired from various questionnaires and which were used in western studies such as SF-36-EORTEC-QLQC30 questionnaire. This questionnaire was modified on the basis of socio-cultural conditions of the country. The average mean of patients' age was 49.5 with 15.7 standard deviation and the median was 49 with 69 standard deviation. In this study, the average score of the quality of life was 162.66 with the standard deviation of 38.07. In terms of classification, on the whole, 53.3% of the patients had an intermediate to high quality of life and 44.7% had a low to very low quality of life. Our patients do not have a suitable psychosocial condition. The major complaints of these patients as poor social relations, loss of independence and having family problems, can all, to a great extent, be solved through appropriate counseling, organizing groups of kidney patients, making relationship among different patients and organizing group cultural-sports activities.

Key words: Hemodialysis, quality of life, Ardebil, ARUMS, factors affecting

INTRODUCTION

Today, hemodialysis is the most common and practical technique for the treatment of patients with chronic renal failure and about 70% of the patients use dialysis for the treatment (Brunner *et al*., 1998). In our country-Iran-according to the statistics given by the Charity Association for the Support of Kidney Patients (CASKP), about 12875 (about 43%) of almost all 29785 patients are under dialysis practice (Report, 2005). Chronic diseases have inevitable effects on both the health and quality of life and there is a close relationship between an individual's health and quality of life. Vanger and Ferberg define 'Quality of Life' as those characteristics which are valuable for the patient and feeling of being relaxed and being in good condition along with logical development of physical, emotional and intellectual functions in a way that the person can preserve his abilities in the valuable activities of life (Bobes *et al*., 2001).

World Health Organization (WHO) defines 'Quality of Life' as the individual's conception of living condition in terms of culture and the dominant values in the society which are aimed at their goals, expectations, standards and interests so quality of life has a close relationship with physical and mental condition, personal beliefs, the extent of self-reliance, mass communication and environment (Sayyari *et al*., 2001). Although 'Quality of Life' has been frequently discussed in medical texts, its measurement has been done through different views, methods and aspects and it was measured according to different aspects like (Prutkin and Feinstein, 2002).

Measuring the 'Quality of Life' in dialysis patients is an important researchable issue. According to Varricho, to provide health for patients with chronic renal failure, they should go under hemodialysis treatment. Tense factors not only remain but also they may intensify; because a dialysis patient faces various tense physical, mental and social factors and is worried about his future (Varrich, 1990).

Measuring 'Quality of Life' helps to consider patients' problems more seriously and to reconsider techniques of treatment (Barry, 1996). In this study, 'Quality of Life' of the person was investigated on the basis of Keith's definition through his own view (subjective) and not through a medical point of view.

Corresponding Author: S. Sadeghieh Ahari, Department of Community Medicine, Ardebil University of Medical Sciences, Ardebil, Iran

MATERIALS AND METHODS

This was a cross-sectional study including 100 patients of all the hemodialysis patients who had referred to hemodialysis centers of Ardebil University of Medical Sciences. Because of patients' cooperation, there were no serious attritions in this study. The data was collected through a questionnaire which was inspired from various questionnaires and which was used in western studies, as case in point SF-36-EORTEC-QLQC30 questionnaire (Navello, 1998; Molzahn *et al*., 1997).

Sample size was calculated on the basis of the proportion of patients who had reached a satisfactory level of overall adjustment with dialytic treatment. This proportion was reported to be around 94% in the famous battelle study in the united state (26).so with p=0.94, α = 0.05 and d=0.05p.The sample size was computed as: $n=z^2 (1-\alpha/2)\times(1-P)/ d^2=98$.

This questionnaire consists of different parts including measurement of physical ability, patient's different symptoms and complaints, patients' adaptability with hemodialysis and different questions on different psychosocial fields. In the end, by applying appropriate coefficients, a general score (QOL Score) of 70-100 is given to the patient. In order to increase the content validity; the input of several specialist in the field was used. For survey reliability of the questionnaire alpha cronbach method was used and the result was about 85%. Collected data analyzed by descriptive and analytical statistical method uses table and statistical tests .We use Pearson correlation for compare quantitative variables ,t test for compare QOL score mean in two groups, ANOVA test for compare mean of QOL score in more than two group and Tukey method. The significant level is alpha<=0.05.data analyzed in SPSS software.

RESULTS

In terms of physical ability, 15% of the patients were incapable of doing anything at home and did only personal affairs like eating and bathing (Table 1).

In psychosocial aspects of 'Quality of Life', the most important variable was the extent of patients' adaptability with hemodialysis. The results of the study showed that less that 37% of the patients have been able to find a reasonable adaptability with their condition (Table 2).

In terms of supporting services, 68% of them receive help from the Charity Association for the Support of Kidney Patients (CASKP) in which 47% was through financial aid (loan) and 22% received counseling (Table 3).

Table 1: Frequency distribution for different levels of the patients' physical ability

Ability levels	Frequency	(%)
Level 1: Patient does all the physical activities without any problem	34	34
Level 2: Patient is uncomfortable with vigorous activities (e.g. running, carrying heavy loads,..)	30	30
Level 3: Patient is uncomfortable with moderate activities (e.g. walking, carrying a simple bag,..)	11	11
Level 4: Patient hardly does routine house works and most of the time is taking it easy.	10	10
Level 5: Patient is totally incapable of doing anything at home except for personal affairs like eating and bathing.	15	15

Table 2: Frequency distribution of the patient's adaptability with hemodialysis

The rate of adaptability	Frequency	(%)
I feel that my life has completely been ruined. (complete inadaptability)	21	21
It has ruined my life considerably. (relative inadaptability)	42	42
The present disruption is reasonable. (relative adaptability)	32	32
There is no disruption in my life at all. (complete adaptability)	5	5
Total	100	100

Table 3: Frequency distribution of counseling services reception

Reception	Frequency	(%)
With receiving	22	22
Without receiving	78	78
Total	100	100

Table 4: Frequency distribution for 'Quality of Life' in hemodialysis patients

Quality of life	Frequency	(%)
Very low (70-109.9)	7	7
Low (110-154.99)	39	39
Intermediate (155-199.99)	36	36
High (200-244.99)	16	16
Very high (245-300)	2	2
Total	100	100

The average score for 'Quality of Life' was 162.66 with SD = 30.07. In terms of classification, 54% of the patients had intermediate to high levels of 'Quality of Life' and 46% had low to very low levels of 'Quality of Life' (Table 4).

In measuring the relationship between QOL score and the predisposal variables, the following results were found:

There was no significant difference between QOL Score and the age of patients (r = -0.187, p = 0.03) or between QOL Score and the scores of male/female groups (p = 0.18). There was also no significant difference between QOL Score in rural and urban patients (p = 0.25). There was a negative statistical relationship between QOL Score and the number of associate diseases (r = -0.427, p = 0.001) and there was a positive statistical relationship between QOL Score and dialysis duration of the patients

($r = 0.342$, $p = 0.01$). In comparing 'Quality of Life' among different educational levels, there was a significant statistical relationship only between groups one and two, that is, illiterate and primary education groups ('Quality of Life' was higher in the latter group).

DISCUSSION

The number of patients who are under treatment due to progressive kidney diseases is increasing all over the world. However, today, hemodialysis patients have various opportunities for treatment like home hemodialysis, self-care dialysis and conventional dialysis (Ageborg *et al*., 2005) and the effects of all of them on 'Quality of Life' should be measured. In this study, the average age of the patients was 49.5±15.65 which is so close to the average age of 52 for American patients and there was no significant difference between those two (Health Care Financing, 1987). Of course, in the previous studies, the average age of those who had entered hemodialysis programs have shown to have an upward trend (US Renal Data System, 1990; Eggers, 1990) in a way that it is predicted for the patients who enter hemodialysis programs to have an average age of 54-56.8 (Odaka, 1990; King and Hinds, 1998). There was a negative correlation between 'Quality of Life' and age which is in consistent with the study of Nojoumi and Afshar (1999) and Abedi, in which they also found a negative correlation between 'Quality of Life' and age. In a study by Raymond and Davins (1997) there was a significant relationship between low 'Quality of Life' and old age. Sex combination in our patients (57% male and 43% female) is different from that of American patients which was 50-50 ($p<0.01$). In studies by Mohammadi *et al.* (2003) and White (2000) also, there was not any significant relationship while in Kusztal's study, female patients had lower level of 'Quality of Life' (Kustzal *et al*., 2003). From etiological view of kidney failure, the first major cause is glumeronephrite with 42% in our study, which is consistent with the figures in the US and Europe (National Kidney Dialysis, 1982). The second major cause, in our study, was arterial hypertension and its complications like nephrosclerosis which made 22% of the patients and which is less than American patients 28.2% according to the report from the seminal study of Battelle. In our study, intermediary diseases were the third predisposal cause (21% of the patients) which is also higher compared to American figures (15.1%) and next cause goes to diabetes mellitus and its renal complications which is 12% and close to the American one 10.1%. The above figures in general are relative differences in etiologic pattern of renal failure in Iran and especially the large number of diabetic hemodialysis patients can be the result of many factors including not enough care or control or appropriate follow-up in Iranian diabetic patients who are largely the low-income patients. The small number of hypertensive patients in dialysis centers may generally be due to the low prevalence of blood pressure in Iran.

Concerning associate diseases, the most common disease in our patients were muscle and joint disease and mainly myalgia and osteoarthritis and after that, vertebral disorders (lumbar and cervical) and after all these digestive diseases heart diseases (including ischemic and non-ischemic cardiovascular) come next.

In a study, by Neabaie (2001) the most common associate disease was digestive and cardiovascular diseases. Whereas in American dialysis centers the most common ones were heart diseases (non-ischemic) and then joint and muscle diseases and next were digestive diseases. The low prevalence of cardiovascular diseases is most probably due to low accuracy in disease diagnosis.

Concerning the physical ability of the patients, 34% of our patients had declared that they do all the routine activities and about 30% of them had difficulties doing vigorous activities while 8.4% of American patients were completely functional and 36% had difficulties during vigorous activities. On the other hand, 15% of the patients were completely unable in doing their routine activities and this is 5.4% in American patients according to Battele's study. However, in the psychosocial part, the most important issue was patients' adaptability with hemodialysis in which our patients had a reasonable figure 37% while it is 57.8% in American patients which is significantly higher than ours ($p<0.001$). The extent of adaptability with dialysis in Neabaie's (2001) study was 46% among patients.

The reason for this could be related to several factors like having low socio-economic condition, low facilities, the costliness of services (erythropoietin and calcium ampoules and the cost of commuting), inadequacy of counseling for facilitating the adaptability and also lack of mechanisms for changing jobs and employment for the patients (Neabaie, 2001). In White's (200l) study patients had a high 'Quality of Life' and this indicates the intermediary limit in our patients compared to domestic and foreign studies in a way that the 'Quality of Life' had been greater for foreign patients. Kusztal's study showed that dialysis patients had lower level of feeling of health than control group (Kusztal *et al*., 2003) and Merkus's (1997) study in the Netherlands, who investigated on 'Quality of Life' in ESRD patients for l00 hemodialysis patients and 101 peritoneal dialysis showed that the 'Quality of Life' of these patients is significantly less than

that of normal population. In a comparative study, 'Quality of Life' on some European countries including France, Germany, Italy, Spain, England and also Japan showed that in all the parts of 'Quality of Life', these patients had lower scores than those of normal people (Fukuhara *et al*., 2003).

In the present study, no significant relationship was found between 'Quality of Life' and variables of sex, marital status, patient's etiology and this corresponds with the results of Niechzial *et al*. (1997).

In Mokhtari's *et al*. (2003) study also, there was a significant statistical relationship between 'Quality of Life' and education and income. In most of the studies, women have shown a lower score in 'Quality of Life' than men (Merkus *et al*., 1997). In Mokhtari's *et al*. (2003) study which was on 128 hemodialysis patients, the results showed that there was a significant relationship between patients' 'Quality of Life' and education and income. In our study there was a significant relationship between 'Quality of Life' and education groups of one and two (i.e., illiterate and primary) but there was not any significant relationship among other groups while Niechzial *et al*. (1997) found no relationship between 'Quality of Life' and different education levels. The difference between groups one and 2 may result from very low socio-economic level of our illiterate patients who have manual jobs (blue-collar job) and come from poor and rural areas of the country. There was a negative statistical relationship between patients' age and QOL score which is consistent with foreign reports like that of Moreno *et al*. (1996).

The results of the study showed that about 37% of the patients have been able to find a reasonable adaptability with their condition and there was not any relationship between the degree of adaptability and their age which is probably due to the hemodialysis procedure difficulty and adaptation difficulty with this change and it seems the rate of this adaptation is very important and effective in patients' satisfaction. In the area of psychosocial problems, 71% of the patients had lost their independence and are partly or totally dependent on others. About 69% of the patients consider hemodialysis as an interference with their religious ceremonies and 21% of them consider hemodialysis as a disrupting factor in their emotional relationship so all these and their social effects should be concerned. As a case in point, interference with religious ceremonies may be concerned when blood is on the patient's body or because of patient's dependence on other maybe it is better to use substitute models like peritoneal dialysis. In the end, multiple linear regression equation was made which included several variables like age, marital status, job, education and the number of associate diseases and dialysis duration and also patients' general conception or satisfaction with their 'Quality of Life'. The reason for eliminating confounding variables was the statistical relationship between QOL score and the number of associate diseases, education and patients'general satisfaction which were reregistered while there was no significant relationship between the 'Quality of Life' and age ($p = 0.126$) and that another study with more samples can definitely show such relationship.

CONCLUSION

Aggressive interference such as hemodialysis evidently make the 'Quality of Life' descend and therefore attention to this interference and to factors which cause this effect to descend are vital in the management of these patients and also attention to preventive measures in order to prevent reaching ESRR stages is very crucial.

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