

Impact of hemodialysis on the psychosocial state of patients with end-stage renal disease

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Abstract: Many psychiatric disorders can be seen in patients with chronic renal failure (CRF). Hemodialysis, which is a renal replacement treatment, causes various psychiatric and psychosocial problems. **Objectives:** The objectives of the current study were to investigate the prevalence of psychosocial problems in patients with end-stage renal disease. and to assess the prevalence of depression in patients with end-stage renal disease. **Methods:** A descriptive study design included 50 patients with end stage renal disease who were scheduled for hemodialysis at Prince Salman Hospital Riyadh Saudi Arabia, performed from February 2010 to April 2010. The patients were interviewed by using; sociodemographic information questionnaire sheet developed by the researchers; Beck Depression Inventory and SF-36 (Health Survey for dialysis Patients. **Results:** The result of the current study demonstrated that more than half of studied subjects(55.7%) mentioned that their health extremely interfere with their social activities. also there was no significant statistical deference between gender and depression. **Conclusion** The study findings indicated that hemodialysis severely interfere with social activities of patients & depression is a common psychological problem among the Saudi patients with ends stage renal disease.

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1. Introduction:

Chronic life-threatening and disabling conditions, such as end-stage renal disease (ESRD), introduce significant psychosocial stressors and adaptive demands. Chronic kidney disease (CKD) affects more than 19 million people in the United States, and prevalence of CKD is expected to double within 10 years⁽¹⁾. Statistics issued by the Saudi National Center for the Transplantation of organs has shown that there are 11,000 patients suffering from renal failure in the Kingdom^(2&3), Hemodialysis, which is a renal replacement treatment, causes various psychiatric and psychosocial problems. In addition, strict diet and continuous treatment are other stress factors; people on dialysis continue to have many life changes. Quality of life is often compromised, for example, by fatigue, and challenges in planning meals and limiting fluids. In addition, patients' social and role responsibilities may be altered⁴ Many authors indicate that a large percentage of dialyzed patients demonstrate their anxiety and worry about the future. Additional stressors associated with ESRD include biochemical imbalance, physiological changes, neurological disturbances, cognitive impairment, and sexual dysfunction. All can potentially play a role in depression.^(5&6)

The patients who suffer from the end-stage renal disease comprise a very specific group. Their life as they know it undergoes a radical change. The necessity to observe a diet and to control the amounts of the intake of fluids emerges. In the case of dialysis patients, the necessity to visit the dialysis station about three times a week for a few hours at a time becomes burdensome, too⁽³⁾. The psychological problems which accompany dialysis treatments have many aspects. Mood reduction may result in willingness to give up treatment, Depressive symptoms are a significant early indication of bad prognosis^(1, 2&5)

Many authors has reported that the challenges for the next 30 years include understanding the relationship of psychosocial factors to demographic and medical factors in large ESRD patients populations and the refinement of associations between psychosocial factors and patient outcomes, including adjustment, compliance, morbidity, and mortality.^(7,8&9)

Aims of the Study

The aims of the current study are to:

- Assess the prevalence of psychosocial problems in patients with end-stage renal disease.
- Assess the prevalence of depression in patients with end-stage renal disease.

2. Material and Methods:

This study was conducted in the renal dialysis unit(RDU) at Prince Salman Hospital at Riyadh Saudi Arabia. Convenient non randomized sample were used. A total number of 50 Patients of end stage renal disease that were attending in the hemodialysis unit at Prince Salman Hospital. From February 2010 to April 2010,after obtaining institutional ethics committee approval and written informed consent. The following general exclusion criteria were applied :refusal or inability o give informed consent, patients diagnosed with diabetes mellitus, hypertension and/or depression

Data collection. Three tools were used in this study

1-An interview questionnaire was developed by the researcher after thorough review of literatures to gather demographic and clinical data which included, age, sex, marital status, numbers of dialysis and, years of dialysis. 2-**Beck Depression Inventory**⁽¹⁰⁾ (BDI) which included 21-item test presented in multiple choice formats which purports to measure presence and degree of depression. Each of the 21-items of the BDI attempts to assess a specific symptom or attitude "which appear(s) to be specific to depressed patients.3-**SF-36=Health Survey for dialysis Patients**⁽¹¹⁾ : The UK format of the SF36 questionnaire was selected for use in this study as it is sensitive tool, with broad applicability

The SF-36 is a 36 item questionnaire that measures eight multi-item dimensions of health: physical functioning (10 items) social functioning (2 items) role limitations due to physical problems (4 items), role limitations due to emotional problems (3 items), mental health (5 items), energy/vitality (4 items), pain (2 items), and general health perception (5items). There is a further unscaled single item asking respondents about health change over the past year. For each dimension item scores are coded, summed, and transformed on to a scale from 0 (worst possible health state measured by the questionnaire) to 100 (best possible health state). The scores for each dimension can vary from 0–100; the higher the scores the better the quality of life.

Procedure: The tool was filled by the researcher during dialysis hours, Clear instruction was given to the patients who voluntary agree to participate before questionnaires. The patients were interviewed at an individual bases. The time needed to fill out the questionnaire was 25 minutes.

Statistical analysis:

The collecting data was analyzed by using the SPSS 17program. Descriptive statistics and summary statistics, including: Means, SDs, and frequencies, were used to summarize patient_demographic, clinical characteristics and psychosocial status of patients. *P*

values were made on the basis of 2 tailed tests. Differences were considered statistically significant at $p=0.05$.

3. Results

The demographic and clinical data of hemodialysis patients are shown in table (1) that demonstrate near half [48%] of studied subject were in age group from 30-49(productive age).Regarding gender 62%of studied subjects were male concerning years of dialysis 48%from patients either less than 3 years or from 3 to 6 years treated with dialysis. While only 4% on dialysis more than 6 years.

SF36 scales as reported by the subjects in the study as demonstrated in table (2).Half of studied subjects mentioned that their general health is Fair, while only 2% mentioned that their general health is poor. More than one quarter (26%) said that their general health is somewhat worse compared with one year ago. while 32% mentioned that their health either the same or much worse compared with one year ago.

Nearly half of studied subjects(48%) mentioned that their health extremely interfere with their social activities. While only (8%)said that their health moderately interfere with their social activities as demonstrated in (figure 1).

More than half of studied subjects (58%) mentioned that pain severity in the last 4 weeks are very sever. While only (4%) said that their sensation of pain were mild (figure 1).

Concerning relationship between depression and gender as demonstrated in table (3)moderate depression is commonly reported in male patients 62.1%.there is no statistical significant differences Concerning correlation between total depression score, age and years of dialysis there is no statistical significant differences. as presented in table (4)

The total score of Rand SF-36 for Each Specific Area of Functional Health Status presented in table (5).General health area in SF36 was taken the highest score (56.3%,55.7% and 48.3%) followed by social functioning and fatigue respectively.

4. Discussion

This study was designed to assess the prevalence of psychosocial problems& depression in fifty patients on hemodialysis.

The current study findings demonstrate that the patients health extremely interfere with their social activities, this come in accordance with another study⁽¹²⁾ findings who concluded that The physical health domain of (sf36) of the studied patients had lower mean score than that of emotional and social domains. However, **Baldree**⁽¹³⁾ had categorized the physical activities as a psychosocial stressor. The dispute for the latter is that because the physiological complications of end-stage renal failure would

progressively lead to renal bone disease, peripheral neuropathy and cardiovascular alterations, these patients would experience limitation in their physical activities. This argument is supported by Lok¹⁴ who has categorized "limitations of physical activities" as physical stressor. an, have more multi-faceted networks, and are more likely to mobilize their support networks than men¹⁶.

Table (1) Demographic and clinical data of hemodialysis patients N=50

Age	Number	%
Less than 30	8	16
30 –	10	20
40 –	14	28
50 –	5	10
60 and up	13	26
Mean	45.18	
SD	14.33	
Gender		
Male	31	62
Female	19	38
Years of dialysis		
< 3	24	48
3 – 6	24	48
6 >	2	4
Number of Dialysis per week		
Three times	50	100

Table (2) SF36 scales as reported by the subjects in the study

	Number	Percent
General Health		
Excellent	0	0
Very good	3	6
Good	21	42
Fair	25	50
Poor	1	2
Rating health compare to one year ago		
Much better	16	32
Somewhat better	13	26
About the same	16	32
Somewhat worse		
Much worse		

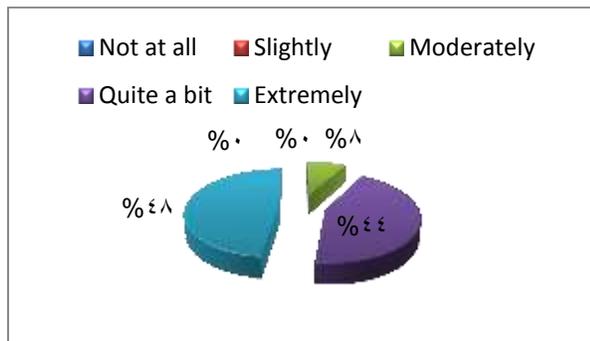


Figure (1) Health status interference with social activities of studied subjects

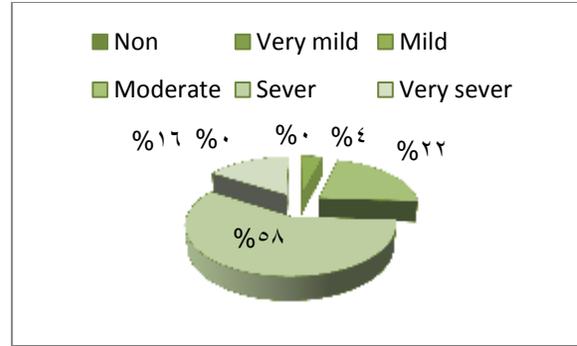


Figure (2) Pain severity in the last 4 weeks as experienced by studied subjects

Table (3) Relationship between Depression and gender

Gender	Depression						X	P
	No Depression		Moderate depression		Depression			
	No	%	No	%	No	%		
Male	4	80.0	18	62.1	9	56.2	0.912	
Female	1	20.0	11	37.9	7	43.8		
Total	5	100	29	100	16	100.		

Table (4) Correlation between total depression score age and years of dialysis

	Age		Years of dialysis	
	r	p	R	p
Total Depression Score	0.218	0.128	0.155	0.281

The score of Rand SF-36 for Each Specific Area of Functional Health Status

Scale	Mean score	SD
Physical Functioning	47.8	14.63
Role limitation due to physical problems	40	17.81
Role limitation due to emotional problems	32.6	15.22
Energy/ Fatigue	48.3	18.21
Emotional well being	42.6	16.39
Social functioning	55.7	15.77
Pain	18.7	19.83
General health	56.3	16.27

In Islamic culture as Saudi Arabia sources of support for dialysis patients are more obvious relates to transcendent values and relationships this is the way people find meaning, purpose, and hope in life and in the midst of suffering. Dimond study reveal that family support and a greater availability and involvement of the spouse were significantly associated with higher morale; family support and the availability of a confidant were associated with fewer illness exacerbations and difficulties in social functioning¹⁷. In contrast, [Spiegel et al¹⁸ reported

that frequency of contact with friends and relatives increased psychological symptoms suggesting that frequent contacts may be stressful, perhaps due to issues of conflict and reciprocity. Social support has been consistently linked to improved health outcomes in numerous studies as well as in populations with varying chronic illnesses characterized by different geographic settings, socioeconomic status, and ethnic backgrounds¹⁹. Although the relationships are consistent, the mechanisms underlying the connection between social support and illness have not been clearly delineated²⁰.

Fatigue is a subjective symptom characterized by tiredness, weakness, and lack of energy²¹. Fatigue is also one of the most debilitating symptoms reported by hemodialysis patients, in the current study Approximately half (48.3%) complaining from fatigue as represented at SF36 score

This come in accordance with **Jhamb et al** who concluded that 60% to 97% of patients on HD experience some degree of fatigue.²²

Also People with chronic renal disease, regardless of whether they are predialysis or receiving either hemodialysis or Peritoneal dialysis, are reported having high levels of fatigue and are often unable to engage in normal daily activities²³. In addition, fatigue is positively correlated with depression^{24&25}

Another author¹⁹ assess the burdensome nature of an illness can be related to patient expectations and cultural factors, and can vary among patients of different ages. This later finding is inconsistent with the findings of the current study where it showed insignificant correlation between patient's age, years of dialysis and and total score of depression. Also This is similar to the observation of **Wolcott et al**²⁶, that duration on dialysis was not related to quality of life. Patients treated with heart disease often developed psychotic episodes and neuropsychiatric manifestations.

Bargielk 27 concluded that accompanying treatment with the use of dialyses have many aspects that are worth mentioning. The first one is mood reduction and resignation attitude.

Limitations resulting from the treatment procedure and a subjective perception of the situation may also have a negative influence on fulfilling social roles. Another author indicates that depression and anxiety are primary factors and contribute to the occurrence of disability more than the seriousness of somatic disorder²⁸.

End-stage renal disease has serious effects on the patient's QOL, negatively affecting their social, financial, and psychological well-being, It affects the QOL more intensely than heart failure, diabetes mellitus, chronic lung disease, and arthritis^{25,26}.

5. Conclusion

The study findings indicate hemodialysis severely interfere with social activities of patients. About half of studied subjects have moderate depression. Also there was no significant relationship between total depression score and years of dialysis

Recommendation

In the light of the current study findings, it is recommended to

1-The study should be replicated on different population & hospitals

2- Further researches must be done in this regard in order to assess possible forms of interventions adjusted to the needs of dialyzed patients & according to Saudi cultural customs

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