Psychological Problems among Patients Undergoing Hemodialysis

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Abstract

Background: Chronic Renal Failure is a public health problem that has serious impact on mental and psychological health of patients undergoing hemodialysis. Hemodialysis, which is a renal replacement treatment, causes various psychiatric and psychosocial problems. **Aim:** This study aimed to assess the psychological problems among patients undergoing hemodialysis. **Subject and Methods:** This study was exploratory descriptive, A convenient sample was selected while this study was performed on 100 patients undergoing hemodialysis treatment at Beni-suef University hospital & Beni-suef General hospital. Data were collected using 1) Socio-demographic Questionnaire, 2) Rosenberg Self-Esteem scale 3) Body Image Scale 4) Beck Anxiety Inventory (BAI) and 5) Beck depression inventory (BDI). **Results:** The result of this study showed that (78%) of the studied patients were having moderate self-esteem and (79%) of them were having a positive body image. Also, (68%) of the studied patients were having mild anxiety and (32%) of them were having moderate to severe anxiety. In addition, (37%) of the studied patients did not have depression symptoms while (44 %) of the studied patients were having mild depression. There is a negative significant correlation between self esteem, age and marital status and a positive significant correlation between marital status and depression. **Conclusions:** the study concluded that Patients undergoing hemodialysis had symptoms of depression and anxiety. Also some patients were having some level of low self-esteem and body-image disturbance. **Recommendations:** The study recommended that screening patients for psychological problems and planning a comprehensive management plan that includes pharmacological and psychosocial interventions treatment. Also, provide psychological counseling for hemodialysis patients and nurses who work with them.

Introduction

Chronic renal failure (CRF) is a slowly progressive, irreversible deterioration of renal function that results in the kidney's inability to eliminate waste products and maintain fluids and electrolyte balance. Chronic renal failure develops into End Stage Renal Disease (ESRD); this is a medical term for kidney disease that requires dialysis or kidney transplant for a patient to stay alive **(CDC, 2014).**

Hemodialysis is the most common therapy, or treatment for patients with end stage renal failure (ESRD). Hemodialysis

means "to clean the blood," it is the process where the blood is slowly withdrawn from the body through a surgically created vein or a catheter, known as a vascular access site, and circulated through a machine **(Black & Bogart, 2015).**

Hemodialysis causes various psychiatric and psychosocial problems. In addition, the continuous treatment is considered as other stress factor **(Zyga, 2014)**. Patients experience feeling of fear, anxiety, depression and powerlessness. Also they have an alteration in self-concept *(Swearingen, 2016)*.

Patients undergoing hemodialysis are often confronted with limitations in food and fluid intake; with physical symptoms such as itching and lack of energy; with psychological stressors that leading to low self-esteem **(Heidarzadeh & Atashpeikar, 2010).**

Body image is the mental picture that the person has about his body **(Townsend, 2012)**. ESRD changes the patients' body and affects their body image negatively. Hemodialysis causes disturbed body image that occurs as a result of the presence of dialysis catheter, overweight, edema and skin lesion **(Swearingen, 2016)**.

Also, anxiety disorders occur as a result of chronic stress of the economic burden of disease, diet restrictions, performance restrictions, chronic related diseases, drugs undesired complications, change in self-understanding and fear of death **(Smeltzer et al., 2014 : Joshwa & Khakha, 2012).**

In addition, depression is the most common psychological complication of hemodialysis, which has a negative impact on the quality of patients' life and their caregivers; however this problem remains difficult to assess and is undertreated *(Gerogianni & Babatsikou, 2014).*

Psychological status of hemodialysis patients negatively affects patients' quality of life, adherence to treatment, and increasing renal morbidity and mortality. Therefore, nurses as a healthcare provider have critically important roles in ESRF treatment and educational programs. Also multidisciplinary management including psychiatric counseling should be treatment of choice in patients with CRF **(Fındıkl & Akif, 2016).**

Significance of the study

Chronic Renal Failure (CRF) is a public health problem that has serious impact on mental and psychological health of patients undergoing hemodialysis. Many psychiatric disorders can be seen in patients with chronic renal failure (CRF) **(CDC, 2014)**.

The prevalence of ESRD is increasing worldwide; being 1500 per million populations (pmp) in the United States, and about 800 pmp in the European Union **(Lotfy et al., 2015)**. In Egypt, estimated number of end stage renal failure is about 483 per million populations. Most patients (97.1%) undergoing intermittent hemodialysis treatment *(Mahmoud & Ahmed, 2015)*.

With the high prevalence of Chronic Renal Failure, there is a necessity for identification of the psychological problems of patients undergoing hemodialysis.

Aims of the study

Assess psychological problems among patients undergoing hemodialysis.

Research Questions

This study is based on answering the following question:

1- What are psychological problems among patients undergoing hemodialysis?

Subject and methods

Research Design

A Descriptive research design was selected to fulfill the aim of the study and answer the research questions.

Setting of the Study

The study was conducted at Beni-suef University Hospital & Beni-suef General hospital.

Subject

A convenient sample was selected and this study was performed on 100 patients undergoing chronic hemodialysis treatment.

Data Collection tools

Data were collected by using the following tools:

1- Interviewing Questionnaire:

It was designed by the researcher in simple Arabic language after reviewing literature. The questionnaire consists of questions about demographical characteristics such as age, sex, marital status, education level, working status, residence, and data about medical history such as history of other chronic disease, frequency of hemodialysis session per week, and years of hemodialysis.

2- Rosenberg Self-Esteem Scale:

It was developed by **Rosenberg, (1965).** A 10-item scales that measures global self-worth by measuring both positive and negative feelings about the self. Each item score ranging from strongly agree to strongly disagree. For items 1,3 ,4 ,7,10 give "Strongly

Disagree" 1 point, "Disagree" 2 points, "Agree" 3 points, and "Strongly Agree" 4 points. For Items 2, 5, 6, 8, 9 are reverse scored. Give "Strongly Disagree" 4 point, "Disagree" 3 points, "Agree" 2 points, and "Strongly Agree" 1points. Sum scores for all ten items. Keep scores on a continuous scale.

3-Body Image Scale:

It was developed by ***Noby, (2010),*** a 30-item scales that measures body image by measuring both positive and negative feelings about the body. It is divided into five dimension; acceptance of defective body parts from (1- 6), general consistency of body parts from (7 – 12), psychological perspective of body parts from (13 –18), social perspective of body parts from (19 – 24) and intellectual content of body image from (25 – 30). Each item score ranges from "a lot= 0" to "never= 3", items 16 and 26 are reversed, so score from "a lot= 3" to "never= 0". Total score ranges from 0 to 18 for each dimension and from 0 to 90 for the whole scale.

4- Beck Anxiety Inventory (BAI):

It was developed by **Beck et al., (1988),** is a 21-item self-report inventory that measures the severity of an anxiety. Respondents are asked to report the extent to which they have been bothered by each of the 21 symptoms. Each symptom item has four possible answer choices: Not at All; Mildly (It did not bother me much); moderately (It was very unpleasant, but I could stand it), and; severely (I could barely stand it). Give the following values to each response: Not at All = 0; mildly = 1; moderately = 2, and; severely = 3.

5- Beck Depression Inventory (BDI):

The Beck Depression Inventory (BDI) is a 21-item self-reporting questionnaire for evaluating the severity of depression in normal and psychiatric populations. Developed by ***Beck et al., (1961),*** it relied on the theory of

negative cognitive distortions as central to depression. The BDI contains 21 items on a 4-point scale from 0 (symptom absent) to 3 (severe symptoms).

Pilot study

The pilot study was conducted on ten patients from the hospital. They represent 10% of total sample to ensure the clarity of questions, applicability of the tools and the time needed to complete them. The necessary modifications were done as a result of pilot study; those patients were excluded from the actual study sample.

Ethical considerations

The ethical research considerations in this study included the following:-

-The research approval was obtained from each participant to share in the study.

-The researcher explained the aim of the study to the study subjects.

-The researcher maintain on anonymity and confidentiality of subjects.

-Subjects are allowed to participate or not, and they have the right to withdraw from a study at any time.

Result

Table (1): Socio-demographic Characters of Studied Patients (n=100).

Items	No	%
Age in years:		
• 20<30	18	18
• 30<40	9	9
• > 40	73	73
Mean ±SD 48.35 ±12.11 *years*		
Sex:		
• Males	63	63
• Females	37	37
Residence:		
• Rural	55	55
• Urban	45	45
Level of Education :		
• Illiterate	17	17
• Reading and writing	32	32
• Secondary	29	29
• High education	21	21
• Postgraduate	1	1
Marital status		
• Single	13	13
• Married	81	81
• Divorced	3	3
• Widow	3	3
Job		
• Working	30	30
• Not Working	70	70

Table (1) revealed that, the mean age of studied patients was (48.35 ±12.11). Near three quarters of the studied patients (73.0%) aged older than 40 years old, less than two thirds of the studied patients (63.0%) were males and more than three quarters of them (81%) were married. In addition, more than two thirds of the studied patients (70%) were not working and more than half

of them (55%) were living in an urban areas. Regarding the education level of studied patients, the most reported education level among them were reading and writing (32%), followed by (29%) of them secondary education.

Table (2): Medical History of Studied Patients (n=100).

Item	No	%
Frequency of hemodialysis sessions per weak		
• Once	0	0
• Twice	0	0
• Thrice	100	100
Years of hemodialysis		
• < 1 year	19	19
• 1<5 years	30	30
• >5 years	51	51
History of others chronic disease		
• Diabetes	30	30
• Hyper tension	40	40
• Cardiovascular disease	10	10
• Others	5	5
• None	30	30

Table (2) revealed that, all patients (100%) were undergoing hemodialysis treatment three times per week and half of them (51%) undergoing hemodialysis treatment for a period five years ago. Regarding History of others chronic disease, less than half of the studied patients (40%) were having hypertension and less than one third of them (30%) were diabetic

Figure (1): Distribution of the Studied Patients According to Total Level of Self Esteem (n=100).
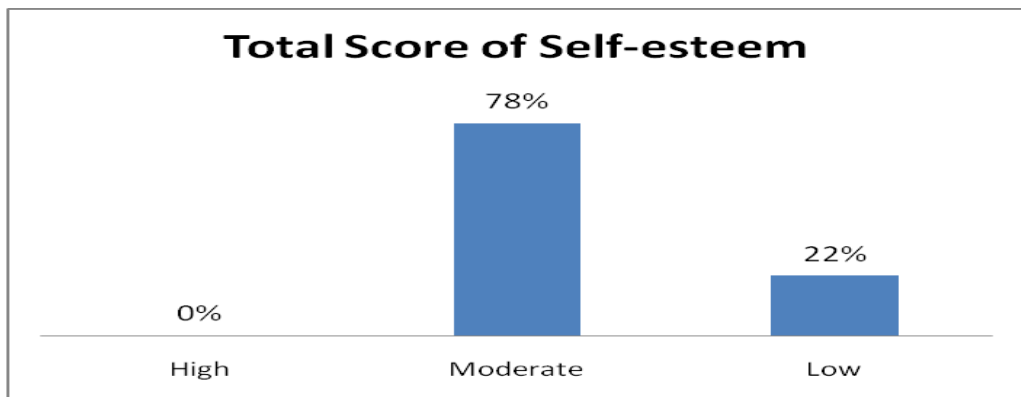

Figure (1) clarified that, more than three quarters of the studied Patients (78%) were having moderate self esteem and less than one quarter of them (22%) were having low self esteem.

Figure (2): Distribution of Studied Patients According Their Total Level of Body Image (n=100).
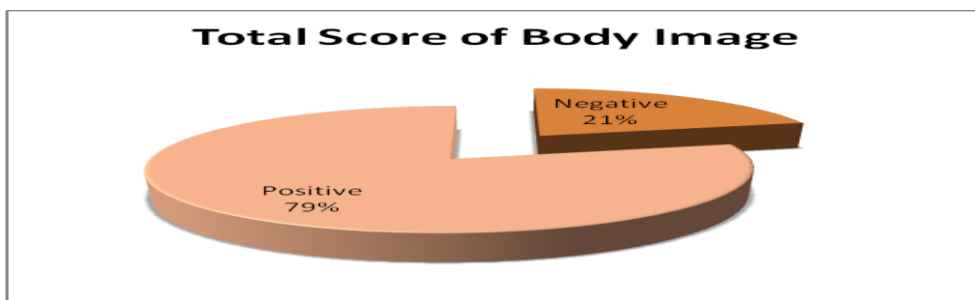

Figure (2) clarified that, more than three quarters of the studied patients (79%) were having a positive body image, and less than one quarter of them (21 %) were having a negative body image.

Figure (3): Distribution of Studied Patients According to Total Level of Anxiety (n=100).
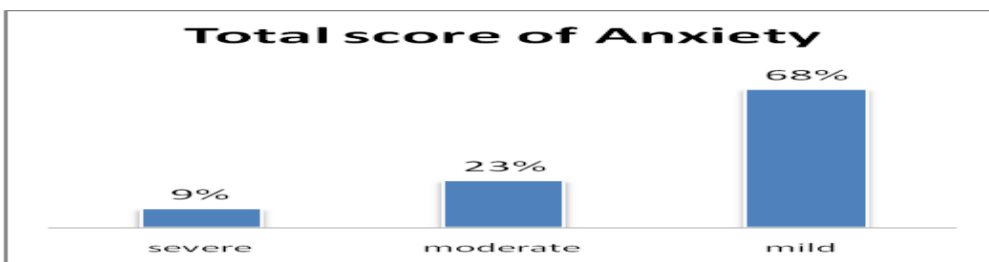

Figure (3) clarified that, more than two thirds of the studied patients(68%) were having mild level of anxiety, less than one quarter of them (23%) were having moderate level of anxiety, and only (9 %) of them were having severe level anxiety.

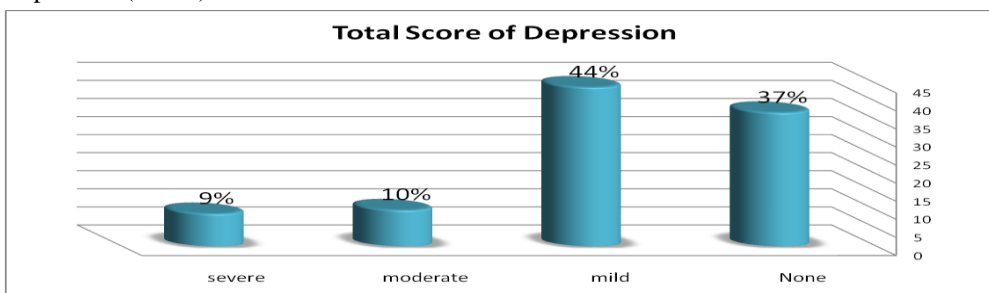**Figure (4):** Distribution of the Studied patients According to Their Total Level of Depression (n=100).

Figure (4) showed that, more than one third of the studied patients (37%) did not have depression symptoms, and less than half of them (44 %) were having mild depression. In addition, (10%) of the studied patients were having moderate depression.

Table (3): Correlation between Socio-demographic Characteristics, Medical History of Studied patients and Total Level of Self-esteem (n=100).

Variables	Total Level of Self esteem		
	No	r	Sig (2-tailed)
Age	100	-0.204	0.042*
Sex	100	-0.047	0.644
Marital status	100	-0.259	0.009**
Job	100	-0.013	0.897
Level of Education	100	0.195	0.052
Residence	100	-0.021	0.837
Frequency of hemodialysis per weak	100	-0.138	0.171
Years of hemodialysis	100	-0.173	.085
History of others chronic disease	100	0.048	0.643

*p value is considered significant < 0.05 r=Pearson correlation   **p value is considered significant < 0.01

In table (3) by analyzing the correlation between socio-demographic characteristics and total level of Self esteem the results showed that there was a negative significant correlation between age and self esteem ($r= - 0.204$, n= 100, $p < 0.05$). There was a high negative significant correlation between marital status of the studied patients and their level of self esteem ($r= - 0.259$, n= 100, $p < 0.01$).

Table (4): Correlation between Socio-demographic Characteristics, Medical History of The Studied Patients and Total Level of Body Image (n=100).

Variables	Total Level of Body Image		
	No	r	Sig (2-tailed)
Age	100	-0.077	0.445
Sex	100	-0.012	0.908
Marital status	100	-0.084	0.407
Job	100	0.091	0.369
Level of Education	100	0.094	0.350
Residence	100	0.079	0.437
Frequency of hemodialysis per weak	100	0.070	0.490
Period	100	0.055	0.589
History of others chronic disease	100	0.078	0.436

r=Pearson correlation

In **table** (4) by analyzing the correlation between socio-demographic characteristics and total scores of Body Image showed that there was No significant correlation between body Image and socio-demographic characteristics and medical history data (n= 100, $p > 0.05$).

Table (5): Correlation between Socio-demographic Characteristics, Medical History of The Studied Patients and Total Level of Anxiety (n=100).

Variables	Total Level of Anxiety		
	No	*r*	Sig (2-tailed)
Age	100	0.068	0.501
Sex	100	0.122	0.226
Marital status	100	0.103	0.309
Job	100	-0.024	0.816
Level of Education	100	-0.095	0.347
Residence	100	0.093	0.356
frequency of hemodialysis per weak	100	0.085	0.398
Years of hemodialysis	100	0.022	0.826
History of others chronic disease	100	-0.096	0.348

r=Pearson correlation

In **table** (5) by analyzing the correlation between socio-demographic characteristics and total scores of Anxiety showed that there was No significant correlation between anxiety level and socio-demographic characteristics and medical history data (n= 100, p > 0.05).

Table (6): Correlation between Socio-demographic Characteristics, Medical History of the Studied Patients and Total Level of Depression (n=100).

Variables	Total Scores of Depression		
	No	*r*	Sig (2-tailed)
Age	100	0.141	0.162
Sex	100	-0.038	0.706
Marital status	100	0.317	0.001*
Job	100	-0.065	0.521
Level of Education	100	-0.105	0.296
Residence	100	-0.040	0.696
frequency of hemodialysis per weak	100	-0.136	0.178
Years of hemodialysis	100	-0.041	0.685
History of others chronic disease	100	-0.106	0.295

*p value is considered highly significant < 0.01   *r*=Pearson correlation

In table (6) by analyzing the correlation between socio-demographic characteristics and total level of depression showed that there was a high positive significant correlation between Marital status and depression (r= 0.317, n= 100, p < 0.01).There was No significant correlation between depression and others socio-demographic characteristics and medical history (n= 100, p > 0.05).

Discussion

Chronic renal failure has negative psychological impact on patients, which contributes to the poor prognosis. It is well-known that depression, anxiety and other psychological problems are common among patients with CRF, The present study was carried out on 100 patients, which revealed that the majority of them aged older than 40 years old this result may be due to aging is a risk factor for developing end stage renal failure. this finding consistent with *Nazme, (2011)* who assessed major risk factors that lead to onset

of end-stage renal disease in northern west bank. Who reported that end stage renal failure dramatically increases with aging particularly after the age of 50 years.

Regarding marital status, more than three quarters of them were married. This finding consistent with **Dziubek *et al.*, (2016)** who assessed the level of anxiety and depression in dialysis patients undertaking regular physical exercise training. Showed that more than three quarters of studied patients were married.

Regarding working status more than two thirds of studied patients reported that they did not work, this could be attributed to fatigue and exhaustion related to end stage renal failure and majority of patient were elderly. This finding agreed with ***Rabiee et al., (2015)*** who assessed Prevalence of end stage renal disease in Menoufia Governorate. They found that majority of the studied patient did not work.

Regarding residence, more than half of studied patients were from rural area; this is due to the fact that rural area had large section of total Beni-suef population. this finding consistent with *Nazme, (2011)* who assessed major risk factors that lead to onset end-stage renal disease in northern west bank. Who reported that ESRD was more common among rural residents than urban residents.

Concerning frequency of hemodialysis per week, all studied patients undergoing hemodialysis treatment three times weekly, this finding congruent with ***Gemeay et al., (2012)*** who assessed the impact of hemodialysis on the psychosocial state of patients with end stage renal disease. They found that all studied patients undergoing hemodialysis three times weekly.

Concerning history of others chronic disease, less than half of studied patients were having hypertension and less than one third of studied patients were having diabetes. This finding agreed with ***Dziubeka et al., (2016)*** who assessed the level of anxiety and depression in dialysis patients undertaking regular physical exercise training – a preliminary study. Found that half of studied patients were having hypertension and more than one third of studied patients were diabetic.

Regarding self-esteem, the results of the present study shows that less than one quarter of the studied patients was having low self-esteem. Patients undergoing hemodialysis are often confronted with limitations in food and fluid intake; with physical symptoms such as itching and lack of energy; with psychological stressors that leading to low self-esteem. This result is consistent with **Mohamed et al., (2010)** who assess Self esteem and optimism among chronic renal failure and leukemic adult patients at Assiut University Hospitals. They found that, chronic renal failure patients were having low level of self-esteem.

Concerning body image, results of the current study demonstrated that, the majority of the studied patients had positive body image. This may be due to the studied patients accepted their body and their appearance and did not want to be different. Also artrio-venous graft, fistula, neck line, or catheter of haemodialysis is the means of life for them. These results agreed with **Frazao et al., (2016)** who assessed Body changes experienced by patients with chronic kidney disease undergoing hemodialysis. Found that most patients were comfortable with the appearance and did not want to be different.

Concerning the anxiety level, more than two thirds of the studied patients were

having mild level of anxiety, less than one quarter of them were having moderate anxiety. Anxiety disorders occur as a result of chronic stress of the economic burden of disease, diet restrictions, performance restrictions, chronic related diseases, drugs undesired complications, change in self-understanding and fear of death (**Smeltzer et al., 2014 : Joshwa & Khakha, 2012).** This finding is supported with **Dziubeka et al., (2016)** who assessed the level of anxiety and depression in dialysis patients undertaking regular physical exercise training – a preliminary study. Found that half of studied patients had symptoms of anxiety.

Regarding depression, slightly less than half of studied patients were having mild depression and slightly less than one quarter of them were having moderate to severe depression. Depression occurs as a result of feelings of hopelessness, perceptions of loss and lack of control, job loss, and altered family and social relationships. The intrusiveness of these thoughts is related to depression, and also reaction to the diagnosis of a potentially irreversible disease and the long-term losses experienced in terms of health, life style, and financial status **Wang & Chen, (2012).** This finding is consistent with **Makara & Koślak, (2012)** who assessed depression symptoms among patients with end stage renal disease and among primary health care patients. They found that slightly more than half of studied patients were having mild depression and slightly less than one quarter of them having moderate depression.

The present study results showed that there was negative significant correlation between age and self esteem, as increasing age leading to low of self-esteem. This result congruent with study conducted by **Mohamed et al., (2010)** who assess self esteem and optimism among

chronic renal failure and leukemic adult patients at Assiut University Hospitals. They found that, young age patients were having high self-esteem more than older age patients. **Ellis, (2001)** disagree with the study results that adolescence is a critical period in the development of self-esteem because of great physical and emotional changes that an adolescent is faced with a chronic illness during this period, and the maintenance and enhancement of positive self-esteem is more difficult.

Regarding marital status, the present study results showed that there was negative significant correlation between marital status and self esteem, as self-esteem higher in married patients than single and widowed patients. This may be due to lack of social and emotional support for single and widowed patients. This result consistent with **Hlai et al., (2009)** who stated that married patients with cancer of all major primary sites had significantly better survival than single, separated, divorced, or widowed patients, although single and widowed patients had the poorest prognosis in general.

Regarding correlation between marital status and depression, the present study showed that there was positive significant correlation between marital status and depression as level of depression increased in divorced/widowed patients, compared to singles and married. This may be due to lack of emotional, social and financial support for divorced/ widowed patients. This result agreed with **Theofilou, (2011)** who assessed depression and anxiety in patients with chronic renal failure: the effect of socio demographic characteristics. Found that depressive symptoms more in divorced/widowed patients compared to singles and married.

Conclusion

Patients undergoing hemodialysis treatment experienced some level of low self-esteem and body-image alteration. Also, the studied Patients have symptoms of depression and anxiety. In addition, there is a negative significant correlation between self esteem, age and marital status and there is a positive significant correlation between marital status and depression.

Recommendation

1)   Psychological counseling should be provided for hemodialysis patients in facilities serving hemodialysis patients and should be delivered by psychiatric professionals.

2)   It is crucial to involve the patients actively in the treatment program in order to efficiently control the disease complications and improve their self-esteem.

3)   Develop health promotion program for renal failure patients and their family members regarding treatment and psychological problems.

4)   Develop continued training and educational program for nurses regarding the needs of dialysis patients, psychological changes and treatment.

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