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Anxiety among Patients undergoing Hemodialysis attending at Hemodialysis Unit of Birat Medical College Teaching Hospital

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ABSTRACT

Introduction: Anxiety is a common problem experienced by patients with chronic kidney failure undergoing hemodialysis therapy. Hemodialysis can be a challenging experience for patients, often leading to psychological distress, including anxiety which may vary from mild, moderate, severe to panic.

Objectives: To find out the prevalence of anxiety among hemodialysis patient and its association with selected socio-demographic and clinical variables.

Methodology: The study used a descriptive cross-sectional research design. A total, 108 hemodialysis patients were chosen using a non-probability purposive sampling method. Anxiety symptoms were assessed using Hamilton Anxiety Rating Scale. Data was collected using face-to-face interview method. SPSS version 20 was used for data analysis.

Results: The mean age of the participants was 48.44 years ranging from 20 to 81 years. More than one-third (38.9%) of the participants belonged to the age group 45-59 years. More than half (54.6%) were females. About one-third had mild anxiety symptoms. Hemodialysis duration showed significant ($p < 0.05$) association with anxiety.

Conclusion: The study concluded that nearly one fourth of the respondents had no anxiety symptoms whereas about one-third had mild anxiety symptoms. Likewise, one-fourth of the respondents had severe anxiety symptoms. Hence, psychosocial counselling and collaborative treatment approach is needed to reduce the anxiety symptoms among the hemodialysis patient.

INTRODUCTION

Chronic kidney disease (CKD) is a slow, progressive, irreversible condition in which the kidney's ability to function ultimately deteriorates.¹ The prevalence of CKD inclines among elderly and the incidence of diabetes mellitus and hypertension. Approximately 1 in 10 of the global population suffer from CKD and are at a particular stage. The results of a systematic review and meta-analysis show that the global prevalence of CKD is 13.4%.² Identifying CKD patients at higher risk of depression during treatment, may help healthcare providers provide appropriate

rehabilitation to these patients.³

Anxiety is a common problem experienced by patients with chronic kidney failure undergoing hemodialysis therapy. Patients with chronic kidney disease undergoing hemodialysis had reported anxiety at different levels which varied from mild, moderate, severe to panic. Patients who have just undergone hemodialysis have severe anxiety, fear of death, discomfort, nightmares hampering to perform their daily activities. However, some patients also show different behaviors such as watching television and sleeping while undergoing hemodialysis.⁴

Anxiety and depression also prevailed among Egyptian HD patients, which showed association with the sociodemographic and clinical risk factors, such as female gender, sedentary lifestyle, smoking, and longer HD duration. The cause of anxiety experienced by patients having initial hemodialysis therapy is revelation of chronic kidney disease for the first time and initial pain from dialysis procedures.⁵ A study in Saudi Arabia showed that 19.7% had anxiety symptoms where anxiety was prevalent more among females than males.⁶

A study in China, reported that the prevalence of anxiety was 36.89% where comorbidity, lower educational status, longer dialysis duration and number of oral medications were significantly associated with anxiety and eventually affected the quality of life.⁷ A study in India, reported that the progressive nature of CKD, along with the medical conditions like anemia, uremia etc. and the associated psychological factors like uncertainty about health status, therapeutic treatment options and outcomes, constant worry about economical status, and chances of health crisis during illness and treatment may all predispose to the occurrence of anxiety.⁸

A study in Nepal, reported the prevalence of anxiety among hemodialysis patients was 68.75% with higher among males and those undergoing dialysis for less than a year.⁹ End-stage renal failure (ESRF) requiring dialysis can indeed lead to significant changes and adjustments across various aspects of a person's life. This included personal, professional, and social dimensions. Once under dialysis, restriction of time and diet, unemployment due to illness, change in sexual interest and behavior, increased financial burden and fear of death act as stressors, thus affecting the patient's mental health and quality of life.¹⁰ Issues such as depression and pain during HD procedures can be effectively addressed by improving the quality of service, which may result in increased patients' satisfaction, thereby reducing the depression levels.¹¹

Several research has shown that anxiety among hemodialysis patients is associated with a range of negative outcomes, including poorer treatment adherence, increased risk of complications, reduced quality of life, and higher healthcare utilization. Therefore, this study assess anxiety among hemodialysis patients for identifying those at risk, tailoring treatment plans, improving communication, enhancing treatment adherence, and ultimately, enhancing their quality of life.

METHODOLOGY

A descriptive cross-sectional study with quantitative and prospective approach was used in the study. The study was conducted among hemodialysis patients at the Hemodialysis Unit of Birat Medical College Teaching Hospital. Data collection was started on 24th March, 2024 and ended up on 18th June, 2024 for the period of 12 weeks. Patients diagnosed with CKD and undergoing maintenance hemodialysis and eligible for consent i.e. 18 years and above and willing to give consent were included in the study whereas patients diagnosed with psychiatric disorder and under psychotropic medication as well as patients on temporary hemodialysis as in case of AKI were excluded from the study. The study sample was 108 and subjects were selected using Non-probability purposive sampling technique. Anxiety symptoms were assessed using standard tool i.e. Hamilton Anxiety Rating Scale (HAM-A/HARS). The objectives of the research were explained to the participants and Informed consent was taken. Data was collected by researcher herself through Face to face interview method for approx. 20 minutes for each participant. Confidentiality of data was maintained by substituting codes for participant identifiers and data was stored in locked cabinets. The budget required for the study was taken care of by the investigator.

Statistical analysis: Collected data was entered in MS Excel and converted into SPSS 20 for statistical analysis. Frequency, percentage, mean, standard deviation and range were used to present descriptive statistics whereas Likelihood Chi-Square was used to determine associations. A p-value of 0.05 or less was deemed significant in the 95% confidence interval.

RESULTS

The mean age of the participants was 48.44 years with ranging from 20 to 81 years. More than one-third (38.9%) of the participants belonged to the age group 45-59 years. More than half (54.6%) were females. Hindu religion occupied nearly two-third (65.8%) of the total participants. Half (50.9%) of the participants were Janajati. More than two-third (75%) of the participants had currently married status. One-third (33.3%) had primary education level and more than two-third (75%) were unemployed. Two-third (66.7%) of the participants reported that their annual family income was insufficient to run the family round a year. Nearly two-third (60.2%) of the participants had history of substance use (alcohol, smoking, tobacco and others). More than two-third (74.1%) of the participants had been prescribed more than five oral drugs (Mean: 6.88). Similarly, more than two-third (71.3%) of the participants reported that their vascular access had not failed since the start of dialysis. More than half (54.6%) of the participants were under hemodialysis for less than equal to one year (Mean hemodialysis duration: 1.71 years).

Table 1: Anxiety level among hemodialysis patient using HARS

Anxiety levels (score)	Frequency	Percentage
No anxiety(<18)	24	22.2
Mild(18-24)	38	35.2
Moderate (25-30)	19	17.6
Severe (> 30)	27	25.0
Total	108	100
Mean score \pm SD= 24.94 \pm 9.001 ; Maximum score= 54 ; Minimum score= 9		

Table 2: Association between anxiety level of the participants and socio-demographic variables (N= 108)

Variables	HAMS-A		p- value
	No anxiety-mild anxiety	Moderate-severe anxiety	
Age in years	N(%)	N(%)	
<45 years	23 (57.5)	17 (42.5)	0.629*
45-59	26 (61.9)	16 (38.1)	
≥ 60 years	13 (50)	13 (50)	
Gender			0.221*
N(%)			
N(%)			
Male	37 (62.7)	22 (37.3)	0.498*
Female	25 (51)	24 (49)	
Marital status	N(%)	N(%)	0.421*
Currently married	45 (55.6)	36 (44.4)	
Unmarried and single (divorced and widow)	17 (63)	10 (37.0)	
Educational level	N(%)	N(%)	0.822*
Primary level	23 (63.9)	13 (36.1)	
Secondary level and university	23 (59)	16 (41)	
Illiterate	16 (48.5)	17 (51.5)	0.063*
Employment Status	N(%)	N(%)	
Unemployed	46 (56.8)	35 (43.2)	
Employed and retired (in pension scheme)	16 (59.3)	11 (40.7)	0.063*
History of substance use	N(%)	N(%)	
Yes	42 (64.6)	23 (35.4)	
No	20 (46.5)	23 (53.5)	

*Likelihood Chi-Square

Religion, ethnicity and annual income sufficiency to run the family of the participants had no significant ($p>0.05$) association with anxiety level.

Table 3: Association between anxiety level of the participants and clinical variables

Variables	Hams-A		p- value
	No anxiety-mild anxiety	Moderate-severe anxiety	
Number of prescribed oral drugs	N(%)	N(%)	0.108*
> 5	47 (58.8)	33 (41.2)	
≤ 5	15 (53.6)	12 (46.4)	
Vascular access status	N(%)	N(%)	0.231*
Not failed till date	47 (61)	30 (39)	
Had Failed once or many	15 (48.4)	16 (51.6)	
Hemodialysis duration	N(%)	N(%)	0.048*
≤ 1 year	38 (65.5)	20 (34.5)	
>1 year	24 (50)	24 (50)	

*Likelihood Chi-Square

DISCUSSION

The result showed more than one-third (38.9%) of the participants belonged to pre-elderly (45-59 years), 54.6% were male, 75% were currently married and 54.6% had hemodialysis duration less than equal one year which are consistent with findings by Fauzan where 37.7% were pre-elderly, 50.6% were male, 75.3% were married and 50.6% had hemodialysis duration less than equal one year. Likewise, the present study showed that one-third (33.3%) had education level up to primary which is inconsistent with the findings by Fauzan, that revealed 18.2% had low education whereas 81.8% had higher education degree.⁴ The present study showed that 17.6% were Brahmin and Chettri whereas majority (82.4%) belonged to Janajati and other (Madhesi, Dalit and Muslim). However, Rachana's finding was incongruent with the present finding where 40.53% were Bramin and Chettri and more than half (59.47%) belonged to Janajati and others. The present study showed that more than two-third (75%) were unemployed which was also inconsistent with the findings by Rachana, which reported majority (90.9%) were unemployed. More than half (60.2%) had substance use history and this was similar with the findings by Rachana, where more than half had a history of smoking (51.35%).⁹

The present study showed that more than one-third of the participants (74.1%) were prescribed more than five oral medicines and which was near to similar with the report by Wei Yi that showed 66.02% had currently prescribed with five or more oral medicines. Likewise, the study showed, 71.3% had no vascular access failure since the start of dialysis which was incongruent with the findings by Wei Yi that reported 91.26% had no vascular access failure since one year.⁷ The present study showed 22.2% had no anxiety symptoms, 35.2% had mild symptoms and 42.6% had moderate to severe anxiety symptoms which was inconsistent with the findings by Mosleh, which reported more than half (58.2%) had not experienced anxiety symptoms, 22.1% were in borderline and 19.7% showed

symptoms of anxiety.⁶ similar inconsistent finding was seen in the findings by Wei Yi.⁷

The present study showed that age, gender, religion, ethnicity, marital status, educational level, employment status, history of substance use, income sufficiency to run the family, number of prescribed oral drugs and vascular access failure since the start of dialysis had no significant ($p>0.05$) association with the anxiety among hemodialysis patients however significant ($p<0.05$) association was seen between hemodialysis duration and anxiety levels. The study by Mosleh showed that age, educational level and employment status had no significant association with anxiety and this was consistent with the findings of the present study. However, study by Nagy and Mosleh reported significant association between gender and anxiety and this was incongruent with the present study.^{5,6} The study by Pankaj reported that religion had no significant association with anxiety which was consistent with the present study whereas educational level and income had significant association with anxiety which was inconsistent with the present findings.⁸ The study by Wei Yi contradicts the present findings as it reported number of prescribed oral medicines had significant association with anxiety however, dialysis duration had significant association with anxiety levels which was congruent with present finding.⁷ The study by Fauzan also reported significant association between hemodialysis duration and anxiety.⁴ The study by Nagy contradicted the present finding for it showed, substance use (smoking) had significant association with anxiety.⁵ The study by Ibrahim reported that hemodialysis patient experienced anxiety during arteriovenous fistula cannulation and it might be due to failure chances, pain and several other factors and this contradicts the present findings.¹¹

CONCLUSION

The study concluded that nearly one fourth of the respondents had no anxiety symptoms whereas about one-third had mild anxiety symptoms. Likewise, one-fourth of the respondents had severe anxiety symptoms. This study revealed that almost all socio-demographic and clinical variables with different categories of the respondents showed higher occupancy for either no anxiety symptoms or mild anxiety symptoms. These variables included age, gender, religion, ethnicity, marital status, educational and employment status, income, history of substance use, number of oral drugs prescribed, vascular access status and hemodialysis duration. The significant association was not noted between anxiety level of the respondents and proposed variables except for the hemodialysis duration which showed significance association ($p<0.05$). Hence, psychosocial counselling and collaborative treatment approach is needed to assess and reduce anxiety symptoms among hemodialysis patient.

RECOMMENDATIONS

The study can be used as the foundational information demonstrating the importance of conducting anxiety assessments among hemodialysis patients. This is crucial for identifying individuals at risk, customizing treatment plans,

improving communication, promoting treatment adherence, and ultimately, enhancing their overall quality of life.

LIMITATIONS OF THE STUDY

Single-centered study may limit the generalization of the findings.

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