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ORIGINAL ARTICLE

Prevalence of depression and anxiety in chronic kidney disease patients

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ABSTRACT

Background: Previous research on the prevalence of depression and anxiety disorders in patients with chronic kidney disease (CKD) has shown a high prevalence of both types of disorders. The aims of this study was to assess the prevalence of depression in anxiety disorders in CKD patients admitted at a tertiary care facility in Lahore, Pakistan.

Materials and methods: All admitted patients at one of the medical wards at Jinnah hospital Lahore from December 2018 to December 2019 with a diagnosis of CKD were invited to participate in this study. Aga khan university anxiety and depression scale was used to assess the prevalence of anxiety and depressive disorders.

Results: All patients scored above the cut-off points of 19 on the AKUADS. The mean score of study participants on AKUADS was 46 (range of possible scores from 0 to 75). There was no statistically significant difference between male and female study participants on AKUADS scores.

Conclusions: The prevalence of depressive and anxiety disorders in patients with CKD is extremely high in the Pakistani population. The possible reasons for this high prevalence could be physical morbidities, lack of appropriate treatment facilities, financial burden, loss of bread winning roles as well as reduced quality of life associated with CKD.

Keywords: Depression, Anxiety, Chronic kidney disease

INTRODUCTION

Depression and anxiety are highly prevalent in patients suffering from chronic kidney disease (CKD). Only a minority of patients receive adequate treatment for their depressive disorder [1]. Patients who are depressed are 3 times more likely to be non-compliant with their treatment recommendations as compared to non-depressed medical patients [2]. Suicidal thoughts have been reported in 10% of the patients suffering from CKD [3]. The depressive symptoms and suicidal thoughts are prevalent even in the early stage of CKD and worsen progressively as the disease stage advances [4]. In one study 65% of CKD patients had loss of sexual interest [3]. Sexual functioning in patients suffering from CKD is related negatively to depression as well as state and trait anxiety [5].

Significant depressive symptoms in CKD patients are independent predictors of many adverse outcomes including faster eGFR decrease, dialysis therapy initialization, hospitalization or death [6]. In a study that used a prospective study design and assessed patients at the early stages of their illness, the authors found a significant association between having higher depression scores at early stages of CKD and increased mortality [7]. In children suffering from CKD, the disease impacts the quality of life adversely [8]. Psychosocial interventions reduce depressive symptoms and improve quality of life in patients suffering from CKD and their carers [9].

A meta-analysis of studies assessing prevalence of depression in patients found that, when assessed by clinical interview, approximately one quarter of patients suffering from CKD are depressed. When self or clinician administered tools are used, the prevalence of depression remains roughly the same for patients of CKD stage 1-5, but rises to 39.3% in patients suffering from stage 5D CKD [10]. Patients being treated with haemodialysis are more likely to show depressive and anxiety symptoms as compared to CKD patients not on haemodialysis [11]. Elderly patients who suffer from CKD are at significantly increased risk of suffering from cognitive impairment. The risk is greater in those who suffer from more severe forms of CKD, but is also present in those who suffer from milder form of disease [12].

There are only a handful of studies assessing prevalence of anxiety and depression in patients with CRF in Pakistan. The purpose of the current study was to assess prevalence of depression/anxiety in patients diagnosed with chronic kidney disease admitted in one of the tertiary care hospitals of Lahore, Pakistan.

MATERIALS AND METHODS

This study was conducted at a tertiary care hospital in Lahore (Jinnah hospital, Lahore). Data were collected from December 2018 to December 2019. The study was conducted among patients admitted to medical wards at Jinnah hospital, Lahore. All patients who were admitted to the medical wards with the diagnosis of chronic kidney disease were eligible to be enrolled in the study. Over the course of the year in which data were collected 120 patients were enrolled in the study.

Aga khan anxiety and depression scale (AKUADS) [13] was used to assess anxiety and depression scores among the study participants. The decision to employ AKUADS for this study was based on the fact that this was an indigenously developed and validated depression and anxiety scale and was in Urdu language. Previous studies have reported good reliability, validity and internal consistency of the AKUADS [14, 15]. AKUADS has a total of 25 items: 13 items assess for the psychological symptoms while 12 items assess for the somatic symptoms of depression and anxiety.

Ethical approval for the study was granted by the institution review board at Azra Naheed Medical College, Lahore. Written informed consent was received from all study participants and confidentiality of the data was ensured throughout.

SPSS version 22 was used to analyze the data. Descriptive data were reported as frequencies, Mean and Median. Independent samples T-test was used to report gender difference on the total scores of study participants.

Sample size was calculated using GPower software version 3.1 using the following parameters; an effect size (d) of 0.5, α error probability of 0.05, power of 0.85 and an allocation ration of 1:1. Thus a sample size of 118 was calculated employing these parameters.

RESULTS

A total of 120 patients diagnosed with chronic kidney disease completed the AKUADS questionnaire. Of them, 75(62.0 %) patients were male and 46 (38.0 %) were female. All the study participants (100%) scored above the cut-off score of 19 on the AKUADS. The highest score on the AKUADS was 73 and the lowest score was 24 (Figure 1). The mean score of the participants was 46.37 and the median score was 46.0. There was no significant difference between the total scores on AKUADS of male and female patients (p= 0.855; 95 % Confidence interval [-3.44-4.14] (Table 1).

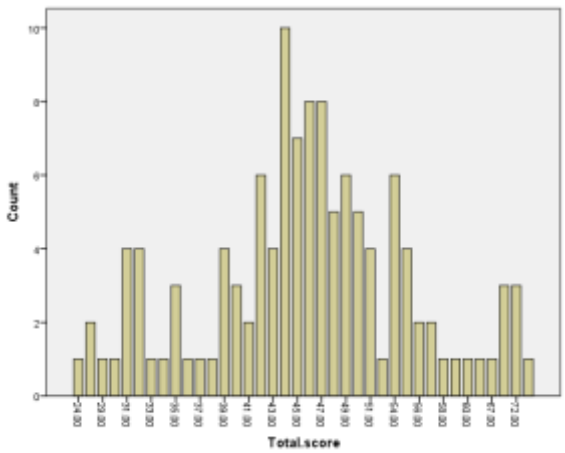

Fig 1: A bar graph of the total scores of study participants on AKUADS

Table 1: Independent samples T-test of the gender difference on the total score on AKUADS.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2 tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Total. score	Equal variances assumed	.537	.465	.183	118	.855	.35111	1.91500	-3.44112	4.14334
	Equal variances not assumed			.177	82.236	.860	.35111	1.98773	-3.60295	4.30517

DISCUSSION

Our study has reported a very high prevalence of anxiety and depression in patients suffering from CRF. However other studies have also previously documented moderate to high prevalence of anxiety and depression in this population. A study from the Indian state of Haryana found that 71%, 69% and 86.5% of the patients of chronic kidney disease stage 3 -5 were suffering from depression, anxiety and insomnia respectively. Also, the prevalence and severity of these parameters increased as the CKD stage advanced [16]. A study from West Bank, Palestine reported that 73% of patients receiving haemodialysis were found to suffer from depression [2]. A study from Saudi Arabia assessed 180 patients and their carers for depressive disorder; 75% of the patients and 33.4% of the carers were found to be suffering from moderate to severe depression when assessed using the Back Depression Inventory [17]. In a study conducted at Shalamar Hospital, Lahore 72% of the patients who were undergoing dialysis suffered from mild to severe depression. There was no significant gender difference noted in the study [18]. A study from Islamabad evaluated outpatient and emergency department patients suffering from CKD for depressive symptoms. 83.8% of the patients receiving dialysis and 61.3% of the pre-dialysis patients were found to suffer from depression [19].

In a study conducted at 3 different dialysis centers in Lahore, patients undergoing haemodialysis were compared to their carers. Patients had poorer quality of life as compared to their carers. It was also noted that the duration of haemodialysis had a reverse correlation with quality of life [20]. In one study conducted at Sharif medical city Lahore, pre-dialysis chronic kidney disease patients were compared with patients of CKD undergoing dialysis. Moderate to severe anxiety and depression was present in 34.6% and 38.5% of the patients respectively. Patients undergoing dialysis were significantly more likely to suffer from anxiety and depression as compared to pre-dialysis CKD patients [21].

Studies conducted globally report lower prevalence rates of anxiety and depression as compared to the local studies. A study which assessed patients at the start of dialysis therapy found that 44% scored above the cutoff score using the BDI instrument [1]. A prevalence rate of 21% was reported in patients suffering from stage 2, 3, 4 and 5 stage CKD in patients from United States [22]. Brazilian researchers found an overall prevalence of 46.2% for psychiatric disorders (excluding psychotic disorders); 23.2% of the patients were depressed while 11.2% if the patients were found to be at significant suicidal risk [23].

Our study did not find a significant gender difference in the prevalence of anxiety and depression in patients with CKD. This is line with an earlier study conducted at two dialysis centers in Lahore [18]. Females are significantly more likely to suffer from depression and anxiety symptoms in the general population [24, 25]. It is possible that the disease burden, financial difficulties associated with the illness, and the loss of bread winner role increases the prevalence of depression and anxiety in male patients with CKD when compared to the general population.

Our study has reported a significantly higher prevalence rate of anxiety and depression among patients suffering from CKD as compared to other studies previously conducted in this patient population. Two possible reasons can be offered to explain this fact. Firstly previous studies have generally assessed the prevalence of either depression or anxiety in patients suffering from CKD. AKUADS assesses both anxiety and depression prevalence and therefore it is likely that the scores reported would be higher when compared to questionnaires that asses the prevalence of either depression or anxiety. The second more compelling explanation is the fact that AKUADS has 13 items that asses psychological symptoms of depression and anxiety and 12 items that assess the somatic symptoms of depression and anxiety. Many of these items like loss of appetite, nausea, constipation, difficulty in breathing and increased frequency of urine are also symptoms of CKD. Hence presence of these somatic symptoms of depression may have resulted in higher reported depression and anxiety scores when compared to other questionnaires. In a country like Pakistan depression and anxiety are known to present with somatic symptoms rather than psychological symptoms. Hence it is also likely that the inclusion of these somatic symptoms of depression and anxiety offers a more precise estimate of the prevalence of depression and anxiety.

CONCLUSIONS

The prevalence of depressive and anxiety disorders is very high in patients suffering from CKD. If these patients can be identified at

an early stage, many adverse outcomes can be avoided. All the medical and nursing staff should be trained to assess for depressive and anxiety disorders and a strong emphasis should be made towards early treatment of these disorders, either by their primary physician or by the psychiatrist.

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