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Mental Health Impact On Patients of ESRD On Renal Replacement Therapy: A Cross Sectional Survey Using Beck and Deck Inventory

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ABSTRACT

Introduction: Chronic kidney disease (CKD) affects approximately 8 to 16% of population worldwide. With increasing incidence of diabetes mellitus and an aging population, CKD is putting an enormous burden on health care resources. The prevalence of CKD in Pakistan has been estimated to vary between 5%-12.5%. Depression can be found in 25% to 42% of hemodialysis patients. There are no previous studies done in Pakistan to know the mental health impact in End-stage renal disease (ESRD)patients undergoing dialysis.
Aims &Objectives: To assess the mental health impact on patients of ESRD on renal replacement therapy using Beck and Deck inventory in our population.
Place and duration of study: Department of Medicine, Ayub Teaching Hospital, Abbottabad from February 2019 to July 2019.
Material & Methods: 97 patients were enrolled using non-probability, consecutive sampling. Patients having CKD and on dialysis for 3 months from both genders from ages 15 to 60 years were included in the study. Patients were assessed using DSM-IV/BDI criteria for presence of depression. Data was entered and analyzed using SPSS version 20
Results: Of the 97 patients included in the study 57 (58.8%) were male and 40 (41.2%) were females. The mean age of patients was 45.00 ±14.82 years. The mean length of time since the patients were on dialysis was 20.47 ±22.81 months. Hypertension was the commonest cause of CKD (75.3%). The mean BDI score was 15.25 ±7.46. The number of patients who had no or minimal depression was 40 (41.2%). The number of patients having mild, moderate and severe depression was 57 (58.8%) patients. Single patients were more likely to be normal (77.8%) compared to married individuals (37.5%). Of the patients who were on dialysis for more than 48 months, 75% were normal with no element of depression. Of the patients who were on dialysis for less than a year, 59.6% had depression. This was statistically significant.
Conclusion: Depression is more prevalent in ESRD patients on hemodialysis. It is more prevalent than found in other major illnesses and in the general population. It should be recognized earlier so that these patients can be treated, and they can have a better quality of life.

Keywords: Depression, ESRD, Dialysis, Chronic Kidney Failure.

INTRODUCTION

Chronic kidney disease (CKD) is rapidly becoming a global health concern. There has been a steep rise in the number of patients reaching End-stage renal disease (ESRD). CKD affects an approximately 8 to 16% of population worldwide[1]. CKD, as a cause of death, has climbed from 27thto 18th position in two decades[2].This has translated to 82.3% rise in the number of deaths caused by CKD in the last twenty years. This is the third largest increase among the top 25 causes of deaths, paralleled only by AIDS and diabetes[3].CKD is an alarming public health priority also because of the fact that the number of ESRD patients on renal replacement therapy is approximately 1.4 million and this number is increasing by 8% annually[4]. With increasing incidence of diabetes mellitus and an aging population, CKD is putting an enormous burden on health care resources[5].

In Western countries, the prevalence of CKD varies between 5.8% (Poland) to 14.8% (United States) in the adult population[6]. However, prevalence of CKD increases in diabetic people, in whom it varies between 34.7 and 45.4% according to different populations[7]. The prevalence of CKD in Pakistan has been studied very sparsely. It has been estimated to vary between 5% to 12.5% in a review published by Imtiaz S. *et al.*in 2018[8].

Most of the ESRD patients undergo renal replacement therapy (hemodialysis) in a hospital setting. Although this has increased life expectancy in CKD patients, many studies suggest that these patients often suffer from poor quality of life[9,10].

Depression is frequently associated with hemodialysis in CKD patients[11]. According to the American Psychological Association's *Diagnostic and Statistical Manual-V, depression is* characterized by low mood, a decreased interest or pleasure in activity, and at least three of seven other co-occurring symptoms present for a period of more than two weeks[12]. Depression can be found in patients in 25% to 42% of hemodialysis patients[13,14]. Further, depression frequently goes unrecognized in CKD patients on dialysis and it significantly affects the quality of life in such patients[15]. There are no previous studies done in Pakistan to know the mental health impact in ESRD patients undergoing dialysis. Therefore, this study was planned to assess the problem in our population.

MATERIAL AND METHODS

This cross-sectional study was conducted in the Department of Medicine, Ayub Teaching Hospital, Abbottabad from February 2019 to July 2019. IRB Clearance was received vide letter number (884-1) Sample size was calculated to be 97 cases with 95% confidence level, 4% margin of error and taking expected frequency depression in CKD patients on dialysis as 7.8%[16].Non-probability, consecutive sampling was used. All patients having ESRD who were on dialysis for 3 months from both genders from ages 15 to 60 years were included in the study. Patients having previous history of depressive illness or mood disorders, antidepressant or antipsychotic use, history of stroke, bed ridden patients or having any malignancy were excluded from the study. After taking consent, patients were assessed using DSM-IV/Beck and Deck Inventory (BDI) criteria for presence of depression. Demographic data was also collected on a proforma. Data was analysed by using SPSS-20.

RESULTS

A total of 97 patients were included in the study of which 57 (58.8%) were male and 40 (41.2%) were females. The mean age of the patient's was 45.00 ±14.82 years and the age ranged between 11 years and 80 years. The mean length of time since the patients were on dialysis was 20.47 ± 20.0 months. The mean time since the patients were diagnosed as having ESRD was 24.20 ± 24.08 months. Hypertension was the commonest cause of CKD (75.3%). Most of the patients, 93 (96%), were on twice weekly dialysis. The average time the patients travelled to the hospital for dialysis was 2.35 ±1.91 hours. Only 2% of patients were either Hepatitis B or C positive before the initiation of dialysis. 44.3% patients contracted Hepatitis C after being put on dialysis. No patient contracted Hepatitis B after starting dialysis. 85.6% patients did not associate any adverse outcomes with previous dialysis. The mean BDI score was 15.25 ±7.46. The number of patients who had no or minimal depression was 40 (41.2%). The number of patients having mild, moderate and severe depression was 57 (58.8%) patients. (Table-1).

Results show significant association between adverse outcome during previous dialysis and the level of depression. Patients who did not experience any adverse outcome in previous sessions of dialysis were more likely to be normal (30%) compared to those that had an adverse outcome (7%).

Marital status was also associated with a significant difference in the level of depression. Single patients were more likely to be normal (77.8%) compared to married individuals (37.5%). Mean BDI scores were 9.5 in single individuals and 15.8 in married individuals. This association was statistically significant, indicating that married individuals were more likely to be depressed. There was no significant difference in mean BDI scores in educated and uneducated individuals.

Results showed significant association between total duration the patient was on dialysis and the level of depression. Of the patients who were on dialysis for more than 48 months, 75% were normal with no element of depression. Of the patients who were on dialysis for less than a year, 59.6% had depression.

BDI Categories	Number of participants (%)
Minimal Depression (0-13)	40 (41.2)
Mild Depression (14-19)	29 (29.9)
Moderate Depression (20-28)	23 (23.7)
Severe Depression (29-63)	5 (5.2)

Table-1: BDI Categories and Number of Participants

DISCUSSION

The most common psychiatric disorder in ESRD patients is depression[17]. It has been associated with an increased risk of cardiovascular events, hospitalization and death[18]. Psychological stress and disturbing physical symptoms lead to reduced Quality of Life (QoL) which shows the way to depression[19]. Many studies have shown a significant association between depression and mortality in ESRD patients on dialysis[20].

A systemic review and meta-analysis which included 249 populations and 55,982 participants showed that prevalence of depression to be 39.3% in ESRD patients[21]. In a study done by Chi-Ken Chen et al, on 200 patients on hemodialysis, depression was present in 35.0% of patients[22]. However, the estimates of depression in ESRD on hemodialysis patients have varied between 5% to 58%[23].

The prevalence of depression in our study is 58.8%. This rate is higher than that reported in many western populations. However, it corresponds to the levels of depression in Indian sub-continent. A study done in Western Rajasthan, India showed the prevalence of depression in hemodialysis patients to be 61%[24]. Similarly, Kumar et al. showed a prevalence of depression to be 61.3% in CKD patients on hemodialysis[25].

In our study, married people were likely to be depressed that single individuals. This is in contrast to some other studies which found that married people were less likely to be depressed and had better QoL than widowed/divorced individuals[26,27]. However, Amjad Khan *et al*., found that married people were more likely to be depressed than single individuals. They found 85.6% of married people to be depressed[28]. In our study, 62.5% married individuals were depressed. The difference could be explained by the fact that the first two studies compared married to widowed/divorced individuals, whereas Amjad Khan *et al.* and our study compared married to single unmarried individuals. A study done in Pakistan by Anees M *et al*. also showed that married individuals are more likely to be depressed than single individuals[29]. In our social setup, a married individual is usually a guardian of 4-8 dependents. As the disease process affects their employment status, this leads to increased mental stress as there is no social support for the family. This could cause higher levels of depression.

In our study, the duration of dialysis was associated with the level of depression in an individual. Of the patients who were on dialysis for less than a year, 59.6% were found to have depression, whereas patients who were on dialysis for more than 4 years, 75% of them had no element of depression. This corresponds to findings of some other studies which propose that the commencement of dialysis puts a significant emotional and social stress on an individual, and as the duration increases the patient gradually adapts to the burden of the disease[30,31].

Although treatment can be challenging, it is very important to identify depression early in ESRD patients. Pharmacological and Cognitive Behavioral Therapy (CBT) can lead to improved quality of life in these patients[32,33].

CONCLUSION

Depression is more prevalent in ESRD patients on hemodialysis. It is more prevalent than found in other major illnesses and in the general population[29,31]. It should be recognized earlier so that these patients can be treated and they can have a better quality of life.

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