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Research Article

**A RESEARCH STUDY TO FIND OUT HEMODIALYSIS RISK  
FACTORS ASSOCIATION WITH DEPRESSION IN THE PATIENTS  
EXPERIENCING HEMODIALYSIS****Dr. Afzaal Ashraf, Dr. Muhammad Waqas Muzzammil, Dr. Tabassum Ali**  
House Officer, DHQ Hospital, Faisalabad**Abstract:****Objective:** To evaluate the occurrences of Hemodialysis and to find out the associated Hemodialysis risk factors.**Methodology:** This research was held at DHQ Hospital Faisalabad, Lahore (May 2017 to May 2018) in Hemodialysis Department. The subjects getting dialysis treatment for 3 or more months were recruited for the study. The patients were administered by Beck's Depression Inventory - II (BDI - II) and blood samples were taken for each patient to evaluate the blood profiles and vital blood parameters including Anti HCV and HbsAg. The prevalence of depression was diagnosed through Statistical "Mental Disorders Manual" for association of these findings with hematological profiles of the patients.**Results:** The sample consisted of 89 patients. The sample was composed of 52 males (58.4%) and 77 patients were married (86.5%). In most of the kidney failure cases, leading causes were high blood pressure, diabetes mellitus and chronic glomerulonephritis. The patients were under dialysis treatment from 03 to 49 months. The mean value for the duration of dialysis was  $19.64 \pm 11.7$  months. Intensity of dejection was classified in to severe, moderate and mild classes. BDI score was also considered during the classification of categories.**Conclusions:** Many patients were removed from research because of Hemodialysis practice. Main reasons of the hazard included dejection, lack of education, spousal status, number of kids, sex, high blood pressure, financial variables and hypoalbuminemia. Patients having hyponatremia, frailty and hyperkalemia had self-destructive inclination. HCV and irritated liver capacity patients had solid relationship with mental/psychological parameters.**Keywords:** Dejection, Renal failure, Hemodialysis, Illiteracy and BDI.**\* Corresponding author:****Dr. Afzaal Ashraf,**  
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**INTRODUCTION:**

The role of depression is critical in the development of chronic kidney disease (CKD). The patients suffering from such disease often feel dejected and have no desire to live or survive. Thus, they break the habit of taking medicine in time and seldom care for prevention. Food intake is reduced which creates weakness and the situation becomes worse. Physical efficiency decreases with the increase of chronic kidney disease and diminishes as the disease intensifies. Hemodialysis patients may face psychological and psychiatric problems including dejection, dementia and personality issues [1]. Depression is noted as a common and most prevailing problem in CKD patients undergoing hemodialysis. It often leads to higher mortality rate [2], greater hospital admission for longer periods [3] and dialysis. The quality of life and heart diseases are closely related to the prevalence of depression among patients [2, 5]. Patients suffering from CKD and undergoing dialysis feel desperate and try to end their life by attempting suicide in some cases. The propensities for such attempts are higher in CKD patients as compared to general public [6]. The variations between occurrences of depression in CKD patients owe to different treatment methods used for depression diagnosis [7, 8]. In our country, not enough material is available for evaluation to gauge the presence of depression among renal patients. The current study was aimed to evaluate the occurrences of Hemodialysis and to find out the associated Hemodialysis risk factors.

**METHODOLOGY:**

This research was held at DHQ Hospital Faisalabad (May 2017 to May 2018) in Hemodialysis Department. Patients screening was completed with the help of structured questionnaire and Beck Depression

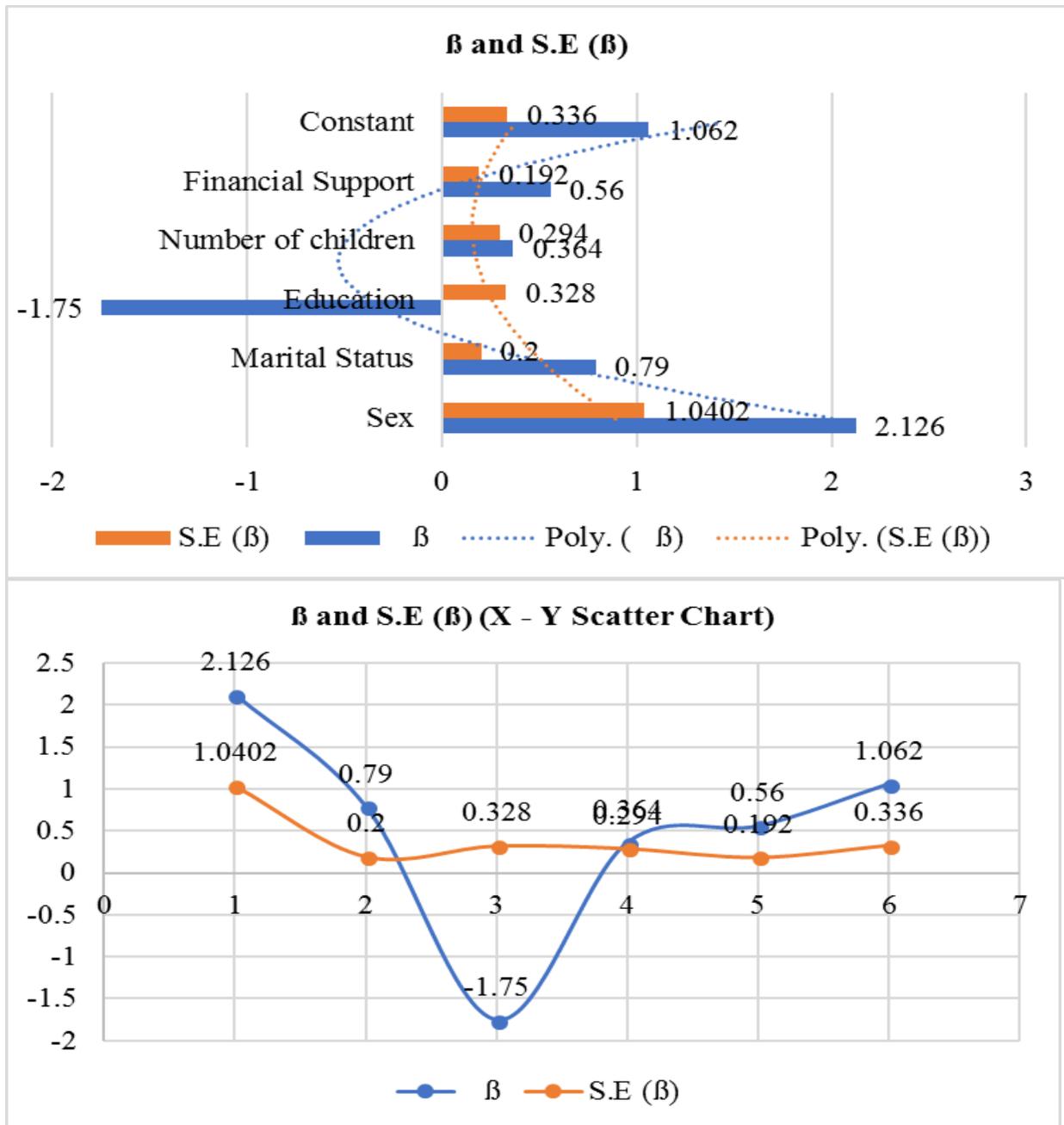
Inventory BDI (Urdu). Subjects were dropped from the study if they fulfil any exclusion criteria. Another proforma containing multiple socioeconomic factors was also filled for each patient. Depression was graduated as per the intensity levels of depression: (< 9 as mild), (10 – 15 as mild), (16 – 24 as moderate) and (above 25 as severe) [9]. Every patients' vitals were checked and noted and blood sample was obtained from each patient for hematology. Statistical Analysis: T-test was used for statistical findings of different variable factors. Regression model, Chi-square test were enforced for better and brief results. SPSS was used for data analysis during this research.

**RESULTS:**

The sample's mean was forty-nine years and most cases were male (52, 58.4%). The subjects were not seen with any smoking (77.5%) and addiction (97.7%) history. Ninety percent of the sample was educated up to the matric level. The contributing causes for severe renal disease (ESRD) were diabetes (46.1%) and blood pressure (22.5%) trailed by glomerulonephritis. The family size ranged from 1 – 30 members and the mean were 7 members for each family. The mean value calculated for depression was 9.64. Patients were divided into 3 depression categories; 15 (27%) were mild, 23 (25.8%) belonged to moderate category and 27 (30.3%) were feeling extremely disheartened. Table-I shows the relationship of different demographic variables (sex, spousal status, qualification, economic status and family size) with depression. The Chi - square reading obtained after processing of data was 21.0563 (p value = 0.04). The results showed great significance at 95% confidence level. Logit model for overall analysis was also conducted for the overall analysis of the research.

**Table – I:** Logistic regression output

Variable	$\beta$	S.E ( $\beta$ )	d.f	P-Value	Odds Ratio (OR)
Sex	2.126	1.0402	1	0.069	0.8925
Marital Status	0.79	0.2	1	0	2.204
Education	-1.75	0.328	1	0	0.2536
Number of children	0.364	0.294	1	0.015	0.695
Financial Support	0.56	0.192	1	0.004	0.2536
Constant	1.062	0.336	1	0.002	2.892



### DISCUSSION:

Patients suffering from ESRD are generally found with symptoms of depression [2]. The dejection can be caused due to mental and physical attributes of the patients. The physical association is due to weight loss, sleep disorders, exhaustion, stomach disorders and ache similar to symptoms in uremia [10]. The similarity of symptoms often misleads the patients and the doctors to neglect the prevalence of depression and treatment. The dialysis patients are seen with variable percentages of depression ranging from 25% - 60% in

different localities [12, 13]. This is due to the different methods applied during the treatment of depression and the social norms prevailing in the vicinity of the patients. The mild – severe group consisted of 65 patients (72%) which was comparable with the findings of another study worked out in Turkey [11]. The prevalence of depression in general public (6% – 30%) is much lower as compared to the depression in dialysis patients (72%), cancer patients (17.8%), CAD (37%) and dialysis victims of developed countries (27%)

[14 – 18].

Depression increases due to a number of demographic factors namely illiteracy or low education, financial issues, spousal status, family size, gender, high blood pressure, reduced albumin in blood composition and hepatitis C with liver malfunctions. The study in hand noticed a deep relationship ( $p < 0.05$ ) between educational status and depression. The symptoms included sleep disorders (insomnia), exhaustion and lack of interest. The findings are also supported by other domestic studies on this topic [19]. In our country the per capita income is low and 35 % people are living below the poverty line. The treatment for dialysis required 250 US \$ per month which is difficult to manage for the general population of the country which is unemployed or belongs to low income families. Though the statistical significance could not be established as far as the financial issues are concerned but the patients who were financially supported by NGO and other organizations were better off than the others (not receiving any financial aid). The studies conducted by Kojma [20] and Bokhari *et al* [17] yielded almost the same results for income of the depression patients. Marital status and family size has a significant relation with depression ( $p < 0.05$ ) especially in cases where the patient is the only person to feed the whole family. The patients are to spend on their treatment while managing all the needs of the families. The situation becomes worse in presence of the children who solely depend on their parents before marriage. All this adds up to make the patients' more depressed during dialysis.

The studies delivered that depression prevalence is doubled in females than males [21]. Current research did not see such incidences in kidney patients undergoing dialysis. The potential reason for the conflicting results is the man dominant society where men are responsible for the needs of whole family. If the head of the family (earning) falls ill he will be more depressed than any other member of the family. The BDI-II scores for male dialysis patients were higher than females [22]. The kidney patients produce less testosterone due to uremic toxins reducing the libido. The lower the testosterone secretion, the higher will be the depression [23]. Dialysis patients are also significantly affected by hypertension ( $p < 0.05$ ). The study is supported by another research at Taiwan by Fan *PI* [24]. The kidney patients avoid the BP medicine on the day of dialysis, the BP reading may be affected by this routine. To discover the

exact BP reading, BP charts can be maintained at home before dialysis. Tachycardia increases with depression, drugs for control of tachycardia would not only reduce it but would also keep the BP under control. The study stated that increased albumin is having strong relationship with different parameters of depression. Betul Kalender, in his research [25], discovered the same results for the association of hypoalbuminemia with depression. Depression and Uremia symptoms are identical and often mislead the doctors in diagnosis. With the use of anti-depression drugs the effect of depression on malnutrition among dialysis patients can be checked.

In Hemodialysis, sodium concentrations shift quickly causing hyponatremia or hypernatremia. The study showed statistically significant relationship between hyponatremia (Mean + SD)  $136.54 \pm 6.0$  and suicide. Hyponatremia is identified by vomiting, discomfort, fatigue and headache. When these symptoms combine, they trigger the patients' negative ideas to get rid of miserable life. Lack of blood in dialysis patients is another major factor causing anxiety. Many studies argue that irritation and anxiety cause depression which is a major contributor for the patients' suicidal thoughts [27]. The HCV ranges from 24 to 50 percent in depression patients [29]. Hepatitis C Virus (HCV) is also strongly related to the depression. Our study found the prevalence of HCV (47.2%) in dialysis patients. The study suggests the improvement of overall condition of depression related dialysis patients by utilizing effective treatment options which are equally helpful in controlling depression. The awareness programs and nutritional advice can be helpful for the illiterate patients in the management of depression and reducing the associated risk factors.

#### CONCLUSIONS:

Many patients were removed from research because of Hemodialysis practice. Main reasons of the hazard included dejection, lack of education, spousal status, number of kids, sex, high blood pressure, financial variables and hypoalbuminemia. Patients having hyponatremia, frailty and hyperkalemia had self-destructive inclination. HCV and irritated liver capacity patients had solid relationship with mental/psychological parameters.

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