

# **PSYCHOLOGICAL STATUS OF PATIENTS WITH CRONIC KIDNEY DISEASE UNDERGOING HAEMODIALYSIS**

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## **ABSTRACT**

**Aim and objectives:** This study is aimed at assessing the psychological status of patients with CKD undergoing haemodialysis.

**Method:** 52 consenting adult patients with CKD undergoing maintenance Haemodialysis were included to assess their psychological status and compared with 57 physically fit individuals to serve as controls. General health questionnaire (GHQ28 designed by Dr David Goldberg) was administered to the patients and controls. Scores of 1-3 were considered as “no psychological disturbance”; score of four is considered as “indeterminate” while scores of five and above are considered as “positive evidence of psychological disturbance”. Patients’ demographic data were compared with controls. Serum samples were taken from the patients for electrolytes, urea, creatinine, calcium, phosphate, total protein albumin and virology. Ultrasonography was also done on all the patients.

**Results;** 52 patients aged between 14 and 75yrs with a mean±SD of 35.29±14.17 and 57 controls aged 15 to 75 with mean±SD of 32.46±13.82 were studied. There is no significant difference in the ages of the patients and controls ( $p=0.79$ ). They comprise of 41 males and 11 females, and 45 males and 12 females among patients and controls. There is no significant difference in the sex distribution of the study groups ( $p=0.99$ ). Majority of both patients and the control groups are married and have attained degree with no significant difference in the marital status and highest educational status attained ( $p=0.23$  and  $p=1.72$  respectively). Majority of the patients (17) and controls (20) were professionals with no significant difference in the occupation ( $p=0.70$ )

We have found a significant difference in the prevalence of psychological disturbance in the study groups with more among the patients than controls ( $p=0.03$ ).

**Conclusion and recommendation;** Psychological disturbance is common among CKD patients undergoing haemodialysis compared to controls. The reason for this finding needs to be investigated.

## **INTRODUCTION**

Psychosocial issues are an understudied yet important concern in the overall health of hemodialysis (HD) patients. Stress is a concomitant of chronic illness and its treatment, and may have meaningful influences on psychological and medical outcomes<sup>1</sup>.

Patients with end-stage renal disease (ESRD) have to try to adapt to a chronic physical illness and the necessity in many cases of coping with dependence on a dialysis machine to stay alive. Adjustment in cognitive, emotional and behavioral terms is required by patients and their families<sup>2</sup>. The period of adjustment occurs over weeks and months and may be likened to a grief reaction with depressive symptoms sometimes developing as part of this process<sup>3</sup>. Some may exhibit denial habits which might lead to discontinuation of therapy<sup>4</sup>.

Quality of life (QoL) in end-stage renal disease (ESRD) patients is threatened by multiple biological and psychosocial stresses and has therefore become a focus of attention in evaluating dialysis<sup>2,5,6</sup>. ESRD patients experience severe disruptions of lifestyle, such as limitations in physical activity and social life, and many will encounter difficulties in coping with their disease and the uncertainty of their future<sup>2,7</sup>. Several studies have reported limited QoL in both haemodialysis<sup>8</sup> and peritoneal dialysis patients<sup>5,9</sup>. Also, depression is a common psychiatric complication in ESRD patients, with a strong impact on QoL<sup>2</sup>. Moreover, a complex interaction between depression, QoL, compliance and survival is observed in this high-risk population<sup>2,10,11</sup>.

## **MATERIALS AND METHODS**

In this prospective study of incident kidney failure patients who presented for hemodialysis treatment at University of Maiduguri Teaching Hospital we included 52 consenting adult patients to assess their psychological status and compared with 57 physically fit individuals to serve as controls. University Teaching Hospital in Maiduguri is the largest tertiary health center with the biggest dialysis facility capable of dialyzing 20 patients a day in the North East of Nigeria with some patients traveling for up to 500 kilometers to reach the center for treatment. Obviously we saw only a fraction of the number of patients that required dialysis treatment mainly because of financial and

transportation constraints. The members of the study population had clinical assessment in which the demographic data was obtained and compared with controls. All of the patients were Black African Nigerians from the various indigenous tribes of the North east and the rest of Nigeria. General health questionnaire (GHQ28 designed by Dr David Goldberg) was administered to the patients and controls. Scores of 1-3 were considered as “no psychological disturbance”, score of 4 is considered as “indeterminate” while scores of 5 and above are considered as “positive evidence of psychological disturbance”. Serum samples were taken from the patients for electrolytes, urea, creatinine, calcium phosphate, total protein albumin and virology. Ultrasonography was also done on all the patients. We evaluated the patients by biochemical tests including serum sodium, urea and creatinine measurements and by ultrasonographic assessment of the kidneys. We included all the patients who had creatinine clearance results that were less than 15ml/min and had evidence of chronicity such as shrunken kidneys on ultrasonography and the absence of reversible renal impairment.

**Statistical Analysis:** Descriptive analysis was used to present the data of this study as means and percentages. Groups were compared using the Chi square test and p – values less than 0.05 were considered significant.

## RESULTS

Fifty two patients with ESRD undergoing haemodialysis aged between 15 and 74 years with mean±SD of 35.29±14.17 were analyzed in this study. This was compared with 57 controls aged between 15 and 75 years with mean±SD of 32.29±13.82. We found no significant difference in the ages in the study group and controls (P=0.79). This is illustrated in table 1.

All the cases had ultrasonographic evidence of CKD as shown by bilaterally shrunken kidneys.

There were 41 males and 11 females among the cases and 45 males and 12 among the controls with no significant difference in the sex of the cases and controls studied (P=0.99).

Table 2 showed that 22 cases were married, 29 were single and 1 was divorced as opposed to controls where 32 were married, 25 were single and none divorced. We found no significant difference in the marital status among cases and controls ( $P=0.23$ ).

Majority of the cases and controls in this study had degree as the highest educational status attained (16 versus 20). This is followed by diploma/NCE (14 versus 15), then secondary (9 versus 17), non-formal (9 versus 3), primary (2 each) and finally postgraduate (2 versus 0). We found no significant difference in the highest educational status attained ( $P=1.72$ ) as illustrated in table 3.

It could be seen from the results of this study that majority of the cases (i.e. 17) were professionals while 20 among controls were professionals. 16 among cases and 22 among controls were unemployed. 15 among cases were semiskilled versus 12 among controls, while 4 among cases were artisans while 3 among controls were artisans. There is no significant difference in the occupation of the cases and controls ( $P=0.70$ ). This is illustrated in table 4.

Eighteen among cases had psychological disturbance as opposed to 7 among controls, while 3 among cases were indeterminate as opposed to none among controls. Thirty among cases had no psychological disturbance and 50 among controls had no psychological disturbance (Table 5). There is significant difference in the prevalence of psychological disturbance among cases and controls ( $P=0.03$ ).

We analyzed and found out that 8 out of 52 cases had symptoms suggestive of severe depression while 2 out of 57 controls had severe depression (Table 6). There is statistically significant difference in the prevalence of depression between cases and controls ( $P=0.032$ ).

**Table 1: Age range of study group**

Age range	Numbers of study group		Total
	Cases (n)	Controls (n)	
10-19	5	10	15
20-29	13	17	30
30-39	18	19	37
40-49	6	4	10
50-59	5	4	9
60-69	4	2	6
70-79	1	1	2
<b>Total</b>	52	57	109

P=0.79

**Table 2: Marital status of study group**

Marital status	Number of study group		Total
	Cases (n)	Controls (n)	
Single	22	32	54
Married	29	25	54
Widowed	1	0	1
<b>Total</b>	52	57	109

P=0.23

**Table 3: Highest educational status attained**

Highest educational status	Number of study group		Total
	Cases	Controls	
Primary	2	2	4
Secondary	9	17	26
Diploma/NCE	14	15	29
Degree	16	20	36
Postgraduate	2	0	2
Non-formal	9	3	12
<b>Total</b>	52	57	109

P=1.72

**Table 4: Occupation of study group**

Occupation	Number of study group		Total
	Cases	Controls	
Professionals	17	20	37
Semiskilled	15	12	27
Artisans	4	3	7
Unemployed	16	22	38
<b>Total</b>	52	57	109

P=0.70

**Table 5: Psychiatric assessment of study group**

Psychiatric assessment	Number of study group		Total
	Cases	Controls	
Scores 1-3	30	50	80
Score 4	3	0	3
Scores 5 and above	18	7	25
Rejected	1	0	1
<b>Total</b>	52	57	109

P=0.03

**Table 6: Prevalence of severe depression among study group**

Diagnosis	Number of group study		Total
	Cases	Controls	
Severe depression	8	2	10
No depression	44	55	99
<b>Total</b>	52	57	109

P=0.032

## **DISCUSSION**

In this study we have found out that there is high prevalence of psychological disturbance among patients with ESRD (confirmed by bilaterally shrunken kidneys on ultrasonography) undergoing haemodialysis when compared with controls, having controlled for age, sex, marital status, highest educational qualification attained and occupation. This statistically significant higher prevalence of psychological disturbance as compared to controls ( $P=0.03$ ) and statistically significant higher prevalence of severe depression as compared to controls ( $P=0.032$ ) has been reported by previous studies<sup>1,2,3</sup>. Although multiple reasons had been given to support these facts, a factor that is common to all the studies is chronicity of the illness and its treatment. In our study, we observed no statistically significant difference in the age, sex, marital status, highest educational qualification attained and occupation of cases when compared to controls. This may be a pointer to the fact that social status may not play significant role in the prevalence of psychological disturbance and severe depression in our patients as reported by other authors<sup>2,10</sup>.

## **LIMITATION OF THE STUDY**

GHQ28 was the instrument used to assess features of severe depression in this study, although GHQ28 is only helpful in screening for general emotional distress but should not be used as a sole criterion for diagnosis. More diagnostic depression scales like Beck's depression inventory, Hamilton rating scale for depression, etc may be needed to diagnose severe depression<sup>12,13</sup>.

## **CONCLUSIONS AND RECOMMENDATION**

Psychological disturbance is a common finding in patients with ESRD undergoing haemodialysis with statistically significant number having features of severe depression. Nephrologist should always review the psychological status of ESRD patients on haemodialysis. Additionally nephrologist should educate all patients with a view to counter the psychological disturbance experienced by Patients with ESRD.



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