Global Academic Journal of Medical Sciences

Available online at www.gajrc.com
DOI: 10.36348/gajms.2023.v05i05.004

OPEN ACCESS

ISSN: 2706-9036 (P)
ISSN: 2707-2533 (O)

Original Research Article

A Study of Dialysis's Impact on the Mental Health of Renal Patients in Bangladesh

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Article History
Received: 24.08.2023
Accepted: 30.09.2023
Published: 05.10.2023

Abstract: The treatment options that have an impact on quality of life include dialysis. This qualitative study aims to shed light on how hemodialysis patients see their experiences with depression and other psychological issues. End-stage renal illness is a global issue that affects many people in various nations and is treated with either transplantation or hemodialysis. The purpose of this study is to evaluate how hemodialysis would affect patients' psychological states and how these individuals will change in response to hemodialysis. A cross-sectional study of 120 people were chosen, 75 of whom were men and 45 of whom were women. Between December 2022 and March 2023, it was carried out at the kidney foundation hospital and research institute in Bangladesh. Information gathering based on patient interviews conducted by our research team and the unit at the kidney foundation hospital. Themes that emerged from the analysis point to hemodialysis, propensity was depression. Additionally, the results show that the majority of them have diabetic nephropathy and are in a terrible to moderate psychological state, as seen by their inability to communicate and their lack of response to family members' and doctors' instructions. Among all the patients 15% patients have got up with hepatitis and rest of time were clear from hepatitis.

Keywords: Dialysis; renal failure; hypertension; patient; Bangladesh.

1. INTRODUCTION

Chronic renal failure is a disease that interferes with patient's regular routines and daily activities. This condition causes several bodily changes as well as variations in laboratory test results [1-5]. It is well knowledge that the kidney plays a key role in controlling body volume, electrolyte imbalances, and the excretion of metabolic, medication, and toxic waste products. It contributed to turning an inactive vitamin D into an active one [6-9]. The literature claims that depression raises the risk of cardiovascular disease, which ultimately increases mortality. When you consider that cardiovascular diseases are the leading cause of death for dialysis patients, this condition becomes more significant [10, 11]. The physiological and psychological impacts of depression may cause a number of difficulties in people with chronic conditions, a decline in the patients' quality of life and self-care motivation, and an increase in their hospitalization rates [12, 13].

A significant long-term disorder affecting the kidneys, chronic renal failure (CRF) results in an accelerated and progressive loss of kidney function that, in its final stage, results in kidney failure. Renal function

Citation: Majedul Hoque, Md Mahabur Rahman, Md Nasir Uddin, Iftear Kazim Rafi, Ahamadunnabi Mondol, Sayef Nawab, Annesha Sanyal Hia (2023). A Study of Dialysis's Impact on the Mental Health of Renal Patients in Bangladesh. *Glob Acad J Med Sci*; Vol-5, Iss-5 pp- 235-240.

falls to under 25% of normal levels in chronic renal failure. In this illness, which develops over years, the kidney gradually loses its capacity to filter waste from the blood and eliminate it in the urine. As a result, toxins and fluids build up in the body, initially causing minimal symptoms [6]. Increases in blood pressure and glucose concentration are two symptoms of diseases that can lead to renal failure, particularly if they are not treated.

Glomerulonephritis, polycystic kidney disease, recurrent cystic spondylitis, recurrent renal vasculitis, various medications taken excessively over a long period of time that might damage kidneys, as well as exposure to mercury and lead, are additional disorders that can result in chronic renal failure. Chronic renal failure can also result from long-term prostatic enlargement-related renal tubule blockage [14-17]. After receiving a diagnosis of the illness, the individual's biopsychosocial status suffers, their interactions with their social surroundings are damaged, and it becomes necessary for them to alter their daily tasks and obligations [18]. According to the findings of the study done by Mutlu (2007), 59% of the patients with chronic renal failure stated that their relationships with their friends and family were impaired, 12.8% of them stated that they had to move, 33.3% of them stated that they were unable to fulfil their roles and responsibilities, 1.7% of them stated that their spouses and children had abandoned them, and 38.5% of them stated that their expectations about other people were not met [19]. Physical exhaustion may linger for several hours or even days as a result of the long-term dependence on the machine required for dialysis treatment [20-22]. Hemodialysis and peritoneal dialysis are two possible forms of dialysis: Instead of the kidneys, the peritoneum (membrane enclosing the abdominal organs) serves as a filter. The fluid changes every 4-6 hours and can be conducted numerous times daily. Typically, waste products and harmful substances like urea, creatinine, and others are removed from blood to purify it [23]. When chronic renal failure advances, the renal function becomes entirely diminished, necessitating kidney transplantation, dialysis, or both [24]. This study aims to shed light on how hemodialysis and peritoneal dialysis patients see physical and mental health issues.

2. METHODS AND STUDY DESIGN

This study of 120 people carried out between December 2022 and March 2023, it was at the kidney foundation hospital and research institute in Bangladesh. Patients who were available for the interview were chosen as candidates. These patients' or their relatives' verbal consent was obtained. A questionnaire was created that asked about general medical history, hereditary illnesses, medication use, and socioeconomic status. Blood glucose and urea levels were tested, and the SPSS program version 23.0 was used to statistically analyze the data. The data were analyzed using Microsoft excel 2016, and in the statistical session.

2.1 Sample Size

Depending on the prevalence of chronic renal failure in Bangladesh, 120 persons were chosen, including (75) men and (45) women.

2.2 Patients Selection

Patient who are selected were diagnosed by the senior as they suffer from end stage renal failure and referred to the hospital for dialysis as they progressed in renal problem from mild, moderate in to end stage renal disease (ESRD) at which the ends with hemodialysis at Kidney foundation hospital. They induce hemodialysis from two to three times a week at average of 2.5-4 hours per session.

2.3 Inclusion & Exclusion Criteria

Patients undergoing hemodialysis through an arterio-venous fistula (AVF) in hemodialysis facilities and ranging in age from 15 to 70 are included in this study. Patients on peritoneal dialysis were not included in this study as there were so few of them, and patients older than 70 and younger than 15 were also not included. The questionnaire was created using WHO scale standards, taking into account socio-demographic factors including age, sex, weight, height, promotion of certain occupations, duration of hemodialysis, previous medical history, and the frequency of each type of hemodialysis.

3. RESULTS

Table 1: Socio demographic properties of study population

Parameters		Number	Percent (%)
Age (years)	15-30	21	17.5
	31-45	45	37.5
	46-70	54	45
Sex	Male	75	62.5
	Female	45	37.5
Occupation	Govt. Job holder	32	26.7
	Retired	27	22.5
	Housewife	20	16.7
	Private job	16	13.3
	Unemployed	25	20.8
Period of hemodialysis	>4 years	9	7.5

Parameters		Number	Percent (%)
	2-4 years	14	11.7
	1-2 years	66	55
	<1 year	31	25.8
Frequency of hemodialysis	3/week	15	12.5
	2/week	48	40
	1/week	57	47.5

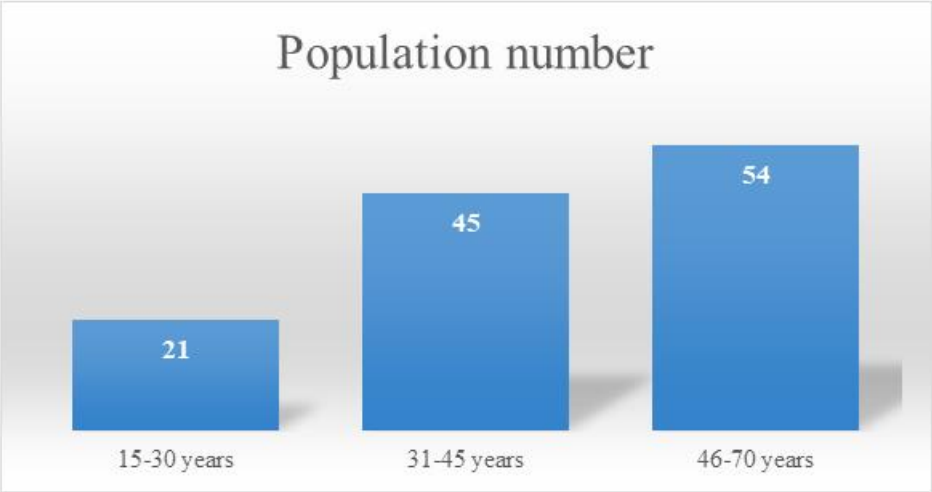

Figure 1: Age group with their population number

Table 2: Different types of renal diseases

Sl. no	Disease	Number	Percentage (%)
1	Hypertension	30	25
2	Diabetic nephropathy	49	40.8
3	Glomerulonephritis	28	23.4
4	Polycystic Kidney disease	6	5
5	Renal stone	7	5.8
In total number & percentage		**120**	**100**

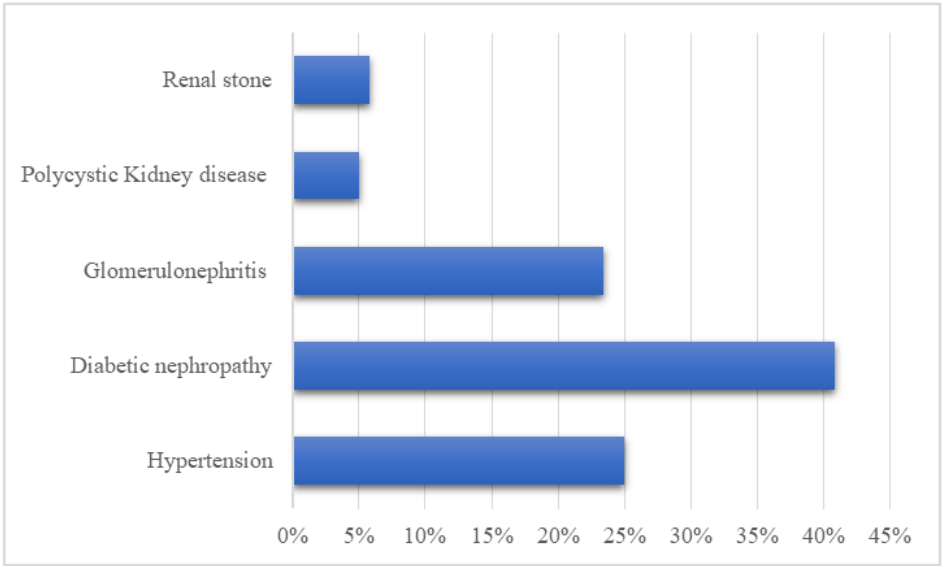

Figure 2: Percentage of prevalent renal disease among patients

Table 3: Psychological condition over patients

Sl. no	Psychological state	Number	Percentage (%)
1	Mild depression (not talking)	42	35
2	Moderate depression (not talk, not respond to relative and doctor instruction)	39	32.5
3	Severe depression (aggressive behavior)	16	13.3
4	Good psychological state (sleep, rest, talk and others)	23	19.2
In total number & percentage		**120**	**100**

Table 4: Hemodialysis patients' hepatitis status distribution

Hepatitis infection	Number	Percentage (%)
Positive hepatitis	18	15
Negative hepatitis	102	85
Total	**120**	**100**

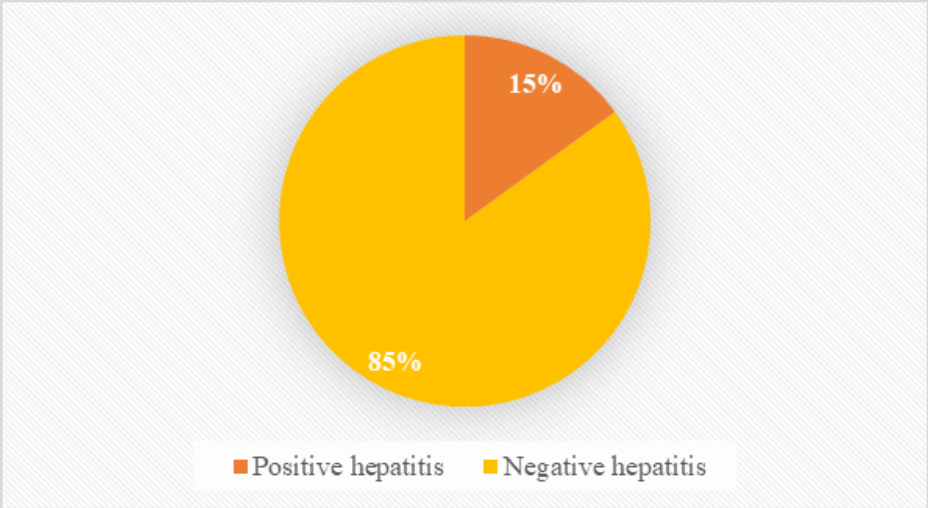

Figure 3: Hepatitis prevalence among patients

Table 1 shows that men made up more than 62% of the population and that those who are older than 45 years comprise 45% of the population. In terms of occupation, more than 20% of people were unemployed, more 26% were government job holder and more than 13% were private job holder. More than 30 patients underwent dialysis in less than a year, 9 patients receiving dialysis by four year time period and the majority of the sample underwent the procedure just once a week.

In terms of kidney disease, it was discovered that diabetic nephropathy (40.8%) was a major contributing factor in the disease's advanced stages, with hypertension (25%) accounting for nearly one-fourth of cases. Renal stones affected 5.8% of the sample, and polycystic kidney disease affected around 5% (Table 2).

The psychological health and overall quality of life of these people had been significantly impacted. In this group, depression (mild, moderate, and severe) was more common than 80% of the total. More than 13% of patients had severe depression, 35% have mild depression (42 patients), while 32.5% of all patients had moderate depression (39 patients); these individuals refused to take their prescriptions, talk to their doctors or other medical personnel, or follow other doctor's orders (Table 3).

Among all the patients 15% patients have got up with hepatitis and rest of time were clear from hepatitis (Table 4).

4. DISCUSSION

This study shows that these people's psychological well-being and general quality of life had been considerably damaged. Mild, moderate, and severe depression affected more than 80% of the participants in this group. More than 13% of patients experienced severe depression, 35% had mild depression (42 patients), and 32.5% had moderate depression (39 patients). These patients disobeyed medication instructions, refused to communicate with their doctors or other medical staff, and disobeyed other doctors' directions.

In adults worldwide, chronic kidney disease affects more than 12% of people. End stage renal disease (ESRD) is the typical result of chronic kidney disease (CKD), which often worsened over time [25]. The annual

prevalence of CKD is rising in Bangladesh, a densely populated developing nation in the Southeast. In a global analysis of six regions, Bangladesh was included, and the prevalence of CKD was estimated to be 14% [26].

Effects of heightened psychological instability or exposure to lifelong medical treatment are thought to be other potential causes. Patients who experience depression begin to lose their sexual functions, roles in work, family, and social life, as well as their physical and mental talents and behaviours. Dialysis patients endure stress because they lose their place in the family, have a lower socioeconomic status, and have financial issues. The problems brought on by the chronic illness also generate depression. Depression is thought to be reactive and associated with duties and obligations in the family, one's self-image, and success in the workplace among individuals who require dialysis owing to chronic renal failure.

According to studies, people with chronic renal failure have significant depression rates of 5-22% and sub-syndromal depression rates of 25%. Because of the apparent overlap between uremic and depressive symptoms, the prevalence of depression may be larger than previously thought. Numerous studies have revealed a high prevalence of depression and/or anxiety among dialysis patients. According to Noble *et al*., (2010), some specific situations related to dialysis (such as being informed that one would not be a good candidate for dialysis or overhearing a doctor say "the possibility is that he/she will die") and an inability to perform tasks that patients had previously been able to do with ease can cause depression[27]. More than 57 people had been receiving hemodialysis for shorter time than a year. According to AL-Jumaih *et al*., (2011), patients could only be on dialysis for a maximum of five years [28]. Patients with renal issues in Iraq commonly manifest depression, which makes them less willing to cooperate with therapy and commit to regular doctor visits [29]. According to Morton et al. (2010), dialysis patients have less developed friendships and communication abilities than individuals in general health [30]. Numerous studies reveal that anxiety, depression, and despair are the most typical emotional difficulties faced by dialysis patients. According to Ylmaz *et al*., (2011), some patients who learned they would be receiving dialysis treatment experienced despair after having dreams in which they saw dialysis tools and equipment in their abdomen and thought they would no longer be as attractive as they once were [31].

Limitations of Study

Due to scheduling restrictions, this study was undertaken at a single tertiary care facility with non-random sampling and a small sample size. Further study should be conducted to evaluate the outcome of dialysis and it effect on human life.

5. CONCLUSION

In our analysis, diabetic nephropathy and hypertension were the two most common causes of end-stage renal disease. It was required to address the patients' emotional, economical, and social support needs. Relative and family support will help sufferers restore their social freedom and self-confidence. Due to physical limitations, patients may feel insufficient, lose confidence, and feel insignificant if these prerequisites are not met. It is believed that more studies are necessary on anxiety and burn out experienced by patients. New studies will produce more accurate information on the subject. Public health policymakers and the government need to pay more attention to the considerable risk of impairment associated with renal disorders in order to control and reduce it.

Compliance with Ethical Standards

Disclosure of Conflict of Interest: There is no conflict of interest regarding this paper.

Author Contribution: All author contributed significantly to design and development of this work

Ethical Consideration

This study was carried out in accordance with the required research ethics. Prior to the start of the participants' involvement in the study, the participants' agreement for participation was also sought (Helsinki declaration).

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