

ASSESSMENT OF FACTORS ASSOCIATED WITH THE REFUSAL OF RECOMMENDED THRICE A WEEK DIALYSIS IN CKD PATIENTS: REALITY VERSUS RECOMMENDATIONS

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(Received, 13th April 2022, Revised 8th September 2022, Published 23rd September 2022)



Abstract: *In developing countries like Pakistan, it is observed that the patients who are on dialysis do not follow the prescribed frequency of dialysis which has increased the morbidity, mortality, and burden on nephrology emergencies. To identify the most common factors associated with the refusal of recommended thrice-a-week dialysis. This observational study was carried out between June 1 and August 14, 2022, in the Department of Nephrology and Hemodialysis at the Services Hospital Lahore. The WHO calculator (version 1.1) was used to determine the sample size of 137. The patients in this study comprised those on maintenance twice-weekly hemodialysis who were anuric and advised for thrice-weekly dialysis but declined it. The senior faculty of the nephrology unit created a form with demographic information and a questionnaire to evaluate the likely reasons. The reason was categorized into three categories including socioeconomic psychology and healthcare-related factors. Using the program SPSS, the data was examined (V. 25). Mean and median were used to describe quantitative factors, and frequency or percentage were used to convey qualitative data. Based on the inclusion criteria, a total of 137 people were included in this study. 62% of the sample in our study were men. Our cohort's median age was 49.54 ± 9.50 years. 52% of the participants were in the 36 to 55 age range. 68 % of the patients who declined three times weekly dialysis were married. Only 28% of patients had higher education, while only 46% had a high school diploma and 19% had none at all. 71% of the people in our research were employed, yet the majority made less than twenty thousand PKR per month. Among the healthcare-related factors, the most common factor was the unavailability of dialysis centres (66.2%). From the results of the study, we can conclude that the lack of education and support from the organization they work for, increase responsibilities after married, low socioeconomic status and inadequate healthcare facilities are the major hurdle in compliance for advised thrice a week dialysis. These factors along with the nature of disease cause many psychological problems that further worsen the situation.*

Keywords: Hemodialysis, Chronic Kidney Disease, Refusal, Recommended Regime, Psychological Factors

Introduction

Hemodialysis (HD) patients frequently struggle with poor adherence to complex multimodal therapy, which escalates morbidity and mortality rates (Tang and Shah, 2021). There is strong evidence linking ESRD patients' non-adherence to morbidity and mortality (Gebrie and Ford, 2019). In particular, the literature showed that poor dietary adherence and skipping treatments are closely linked to a higher risk of mortalities among dialysis patients in general and ESRD in particular. Patients with ESRD must commit to their therapies for the rest of their lives, including renal replacement therapy (RRT) and medical care for their underlying illness, and they must overcome numerous obstacles to remain compliant (Lovell et al., 2017). Noncompliance with a patient's treatment regimen, despite severe repercussions, is more common than not among dialysis patients (Al-Khattabi, 2020). Bleyer et al

noted a much higher occurrence of missed treatments among HD patients in 4 US dialysis centres compared with 4 Japanese and 1 Swedish centre (Al Salmi et al., 2018). Subsequently, missed treatments have been described more extensively and shown to be associated with higher mortality and hospitalization costs. Kidney Disease Outcome Quality Initiative (KDOQI) recommends thrice weekly dialysis in patients without residual renal function (Kong et al., 2018). HD patients vary greatly in the extent of being bothered by the burdens of kidney disease and HD therapy that may affect patient adherence to their treatment regimens (Al Salmi et al., 2018). Refusal from a prescribed/needed HD treatment can be considered as one form of nonadherence (Caruso Brown and Slutzky, 2017; Parsons et al., 2021). Numerous factors are related to missed treatments in HD patients. The World Health

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Organization (WHO) lists five categories of factors that can affect how well patients adhere to their treatment plans: (i) socioeconomic factors; (ii) therapy-related factors; (iii) patient-related factors; (iv) condition-related factors; and (v) factors related to the health care system (Al Salmi et al., 2018). Refusal from treatments is potentially modifiable and, if the rate of missed treatments were reduced, it could lead to improved patient outcomes. Despite the significance of this subject, investigations identifying the causes of non-adherence among HD patients in Pakistan are remarkably rare. The current questionnaire-based analysis was designed to reveal the most important factors in our local population leading to the refusal of patients for recommended thrice-a-week dialysis.

Methodology

This was the observational study conducted at the Department of Nephrology and Hemodialysis Center, Services Hospital, Lahore, from June 1, 2022, to 14 August 2022. The sample of 137 was calculated by using the WHO calculator 1.1 with a confidence interval of 95% and absolute precession of 8%. For sample size calculation 34.7% anticipated population proportion not guided by the medical professional to not miss the dialysis was used from the study of Al-Khattabi et al. 7 This study included the patients on maintenance twice weekly hemodialysis who were anuric and recommended for thrice a week dialysis but refused for thrice weekly dialysis. Both males and females, ages ranging from 18 to 75 years having AV fistula were recruited. Patients who were taking drugs for anxiety control, patients with serious chronic diseases (Chronic hepatitis B or C with or without cirrhosis, AIDS, Parkinson's disease, severe autoimmune disease, blindness and hearing loss), with a terminal illness and mental disorders (delirium, dementia, amnesia, depression) were excluded from the study. This study was approved by the ethical committee of services hospital Lahore and the data was collected after the informed consent of the patients. Data was collected on specially designed Forms. Forms having demographic data and questionnaire designed by the senior faculty of the nephrology unit to assess the probable causes of refusal for thrice a week dialysis. The team divided the reason into three categories. The first category included socioeconomic factors followed by psychological and health care-related problems. The data was analysed by using the software SPSS (V. 25). Quantitative variables were described as mean,

and median whereas Qualitative data as frequency or percentage.

Results

This study included a total of one hundred and thirty-seven participants based on the inclusion criteria. The male was 62% in our study. The mean age of our cohort was 49.54 ± 9.50 years. 52% of the participants belonged to the age group 36 to 55 years. Most of the patients who refused thrice a week dialysis were married (68%). 46% of patients got school-level education and 19% have no basic education and only 28% of patients had higher education. 71% of our study population were doing jobs but most of them earned less than twenty thousand as monthly income (Table-1). The co-morbid conditions are shown in figure 1. Hypertension (68%) was the major co-morbid condition we found in the cohort followed by diabetes and ischemic heart disease.

Table 2 shows the factors associated with the refusal of recommended thrice-a-week dialysis. Most of the patients report multiple reasons for the refusal. Low income (69.5%) and transport problems (68.5%) were found to be the most commonly reported socioeconomic factors. Almost half of the population reported depression and stress of dialysis as a factor for refusal. Similarly, irritational thought, perception of poor quality of life after thrice a week of dialysis and fear of complications were contributory factors in refusal (47.5%, 46.4% and 51.2% respectively). Among the healthcare-related factors, the most common factor was the unavailability of dialysis centres (66.2%) and the unpleasant behavior of the staff (61.5%).

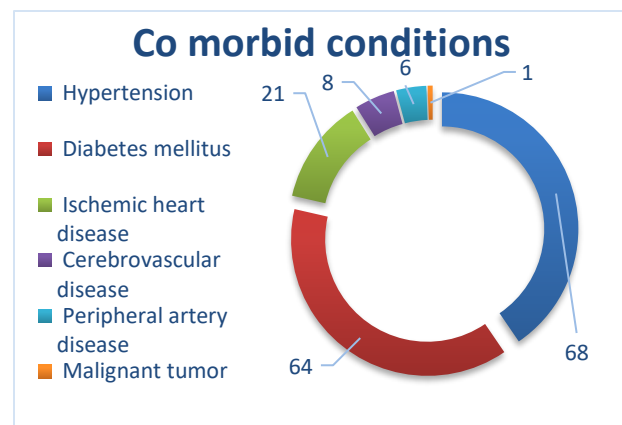


Figure 1 shows the morbid condition of our selected cohort.

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Table-1 Demographic variables

Variables	Constructs	Number	%
Gender	Female	52	38
	Male	85	62
Age	18-35	30	22
	36-55	71	52
	56-75	36	26
Marital Status	Single	30	22
	Married	93	68
	Divorced	3	2
	Windowed	11	8
Education Status	None	26	19
	School	63	46
	Higher Education	38	28
Job Status	Yes	97	71
	No	40	29
Monthly Income	None	40	29
	< 20k	59	43
	20-30k	19	14
	30-40k	12	9
	>40k	7	5

Table 2: Factors associated with the refusal of recommended thrice a week dialysis

Factors	N	%
1-Socioeconomic factors:		
low Income	95	69.5
Employment Issue	14	10.2
Social support of families	67	48.9
Peer support	84	61.4
Transportation problems	94	68.5
2-Psychological factors:		
Depression	62	45.5
Stress	66	48.4
Irrational thoughts	65	47.5
Perception of poor quality of life on hemodialysis	64	46.4
Fear of complications on hemodialysis	70	51.2
3-Health care related factors:		
Un availability of dialysis centers	91	66.2
Unpleasant behavior of staff	24	17.5
High-cost treatment in private healthcare centres	57	41.3

Discussion

It is a matter of concern when a patient does not undergo prescribed dialysis because it can have life-threatening consequences. Non-adherence in dialysis patients can be caused by several variables, including socio-economic, psychological and healthcare-related issues.

In terms of sociodemographic information, the majority of the study subjects had ages between 36 and 55 years(García-Martínez et al., 2020; Lamping et al., 2000). These results are supported by another study that found non-adherence is related to age in CRF patients, with a mean age of 50.90 ± 10.12 years old(Mohammed Mousa et al., 2020). Many of the patients in the study were of the male gender. This outcome was consistent with Griva *et al.* reported that more than half of the patients in their research were male(Griva et al., 2014). A study by Chironda& Bhengu (2016) found that slightly more than two-thirds of patients were male and that being a man is consistently associated with non-adherence(Islahudin et al., 2021). Their findings are similar to our own where the mean age of the participant was 49.54 ± 9.50 years and 62% of the population was male.

The current study's findings regarding marital status showed that 68% of patients were married. The majority of the patients in the study had low levels of education (65%), particularly at the school level education. The results of this investigation were consistent with a study by Smith et al. (2010), which found that the majority of the patients were married and uneducated(Moustafa and Ahmed). The results can be justified by the married patients that they have more duties than single patients, which prevents them from attending their dialysis appointments. Chirondaet *al.* corroborated this conclusion by reporting that low education and illiteracy have been proven to produce poorer adherence because of a poor link with the understanding of disease and therapy(Athbi, 2015).

The current study found that 71% of the analyzed patients were employed. The possible answer to the miss dialyzed was difficult to get leave frequently on regular basis from the job. Contrary to our study the Chironda& Bhengu (2016) found that the majority of the patients were unemployed and missed their dialysis(Chironda and Bhengu, 2016b). But if we analyzed the study, we found the majority of the unemployed patients who were the subject of this investigation.

According to Smith et al. (2010), psychological problems, most frequently involving a lack of desire, are the most common obstacles to hemodialysis sessions (Smith et al., 2010). In the study of the

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effects of psychosocial factors on behavioural compliance and survival in urban hemodialysis patients, Kimmel *et al.* found that depression was associated with lower adherence to treatment regimens and hemodialysis sessions (Kimmel *et al.*, 1998). This finding is consistent with the results of the current study, which found that psychological factors have an impact on adherence to hemodialysis sessions. Our findings showed that more than half of the patients under study experienced unreasonable ideas. Another study found that irrational ideas among CRF patients contribute to non-adherence, which is consistent with our findings (Chironda and Bhengu, 2016a).

Regarding factors relating to health care, our findings showed that the majority of the patients in the study were impacted by financial resources, which caused them to miss their hemodialysis appointments. The same findings were confirmed by Lew *et al.* who looked into the fact that most patients live far from existing dialysis centers and must travel great distances to receive dialysis, and that these patients lack financial resources, resulting in inadequate dialysis and frequent disruptions of work that cause job losses and, as a result, non-adherence and non-engagement with the treatment regimen (Lew and Sikka, 2019). Now Government of Pakistan has taken an initiative to deal with the financial problems of the Pakistani private healthcare centres by issuing the Sehat Insaf Card under a Sehat Sahulat Program. The Federal Government of Pakistan, in collaboration with the provincial Governments, has launched the Sehat Sahulat Program, a health insurance scheme. The Sehat Sahulat Program aims to enhance the health of the populace, particularly the poor, and to eradicate poverty by lowering out-of-pocket (OOP) medical expenses. Following this scheme, everyone possessing a Sehat Insaf Card is qualified to receive free medical care should they be admitted to a hospital. Each province's government has its management systems in place to oversee its Sehat Sahulat program (Khan, 2016). Telemedicine is another way to facilitate these people who have no family support and find it difficult for them to travel all the way to dialysis center. After covid-19 pandemic the concept of telemedicine is now in implementation phase (Himmelfarb *et al.*, 2020; Lew and Sikka, 2019). Our study had some limitations as well. It's a single-centered study which represents only a local community. Although the patients came from different provinces, our data did not represent the whole population. This was an observational study with a small sample size. For true

representation of Pakistan multi-centered study needed.

Conclusion

The study's findings lead us to the conclusion that low socioeconomic status, a lack of education, an insufficient organizational support, increased responsibilities after marriage, and inadequate healthcare facilities are the main barriers to patients' compliance with the recommended three times a week dialysis schedule. These elements, together with the nature of the illness, lead to several psychological issues that make the situation much worse.

Conflict of interest

The authors declare no conflict of interest

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