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Medication Adherence of Patients with Renal Failure at Al-Diwaniyah Hospital

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Abstract

General Background Chronic kidney disease presents a profound global public health challenge, imposing severe therapeutic burdens on healthcare systems and affected individuals. **Specific Background** In clinical settings like the Fatima Al-Zahraa Dialysis Center at Al-Diwaniyah Teaching Hospital, managing renal failure requires complex lifelong pharmacological regimens to control comorbidities and slow down disease progression. **Knowledge Gap** Although clinical regimens are strictly prescribed, the specific socio-demographic drivers and patient-side behavioral factors influencing medication compliance in this particular regional cohort remain under-examined. **Aims** This study evaluates the overall medication adherence levels among patients experiencing renal failure and examines how their socio-demographic characteristics correlate with treatment compliance. **Results** Empirical analysis of 70 participants revealed that 58.6% exhibited low medication adherence, 31.4% showed moderate adherence, and only 10.0% maintained good adherence, with low awareness found in 72.9% of the sample. Statistical testing confirmed that while age, gender, occupation, and monthly income showed no significant correlation with compliance, a patient's level of education had a statistically significant association with their adherence behavior. **Novelty** This evidence identifies a direct correlation between formal literacy and compliance rates, shifting the analytical focus from generalized socio-economic barriers to targeted health literacy needs within the local hemodialysis population. **Implications** These findings demonstrate that standard clinical prescriptions are insufficient without proactive hospital education programs, highlighting the urgent need for structured nursing interventions and simplified drug regimens to minimize clinical relapses and reduce institutional mortality rates.

Keywords: Medication Adherence, Renal Failure, Patient Compliance, Health Literacy, Hemodialysis

Key Findings Highlights

Low medication adherence was identified in more than half of the surveyed renal failure patients.

Formal educational attainment has a significant statistical correlation with patient treatment compliance.

Insufficient understanding of renal conditions directly drives non-adherence patterns in hemodialysis units.

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Introduction

With an effect on millions of people around the world, chronic kidney disease (CKD) is a major and growing concern in public health. Patients, healthcare systems, and society are all burdened by the high prevalence of sickness and mortality that is associated with it. A growing number of people around the world are suffering from chronic kidney disease (CKD). Patients are burdened with a heavy pharmaceutical load since multiple medications are needed to slow down the disease's progression, manage comorbidities, and deal with its repercussions. The complex medication schedule affects the outcomes that are focused on the patient and their care (1,2).

Renal failure and heart problems are among the consequences that might arise from not taking medication as prescribed. Kidney disease, which disproportionately affects people aged 20 and up, has reached epidemic proportions in several parts of the world. Worldwide, 850 million people will have renal failure by 2025, according to the World Health Organization. The prevalence of renal failure, according to recent study, is approximately 10% worldwide. Renal failure was more common among females (9.5% vs.7.3%) than males and boys worldwide. The two largest countries in terms of kidney failure incidence were China and India, with 132.3 and 115.1 million cases, respectively. Ten countries reported more than 10 million cases, while seventy-nine reported more than 1 million.[3,4,5,6].

The progression of chronic kidney disease (CKD) can be slowed down significantly with drug adherence. There is a lack of effective medicines, and medication adherence is a major problem in healthcare. Current approaches to improving medication compliance in chronic health problems are mainly complex and unsuccessful, even though there are many controlled trials on therapies that try to improve adherence. When it comes to treatment adherence, previous studies and meta-analyses have compiled all the relevant data. However, it seems like the complexities of medication adherence from the patient's perspective are still not fully understood. [7].

Negative health outcomes have been associated with prescription non-adherence. People and society bear a greater share of the rising cost of healthcare when patients do not adhere to their prescribed medication schedule and do not attain the desired health benefits. Things that improve medication adherence could also make it worse. Problems with the patient's medication regimen can reduce the likelihood that they will take their prescription as prescribed.

On the flip side, a patient's lack of compliance could be seen as a problem with their behavior. The overall topic of medication adherence has received less attention from researchers than specific cases of drug non-adherence. There may have been an imbalance in the research, with healthcare experts' viewpoints taking precedence over patient feedback. It can be difficult for patients to manage their everyday lives while also dealing with comorbid diseases, and they may not fully understand the intricacies of their medications. To provide care that is truly patient-centered, healthcare providers must have a thorough understanding of the decision’s patients face on a daily basis as they manage their complicated medication regimen. [8].

Improving medication adherence calls for more thorough understanding of the illness and its treatment as well as better communication. Our results confirm that there are many facets to the process of drug adherence, which researchers have barely scratched the surface of. Numerous factors seem to have an effect that is positive, negative, or neutral. All of our results held true regardless of the study's methodology. It seems like patients don't have enough knowledge to make educated judgements about self-managing their care, despite their frequent expressions of worry about their illness. Unfortunately, patients often feel rushed during their appointments and are unable to fully express their worries and concerns to their healthcare providers.[12].

Material/Methods

Descriptive research was conducted among 70 patients from January to June 2025. at Al-Diwaniyah Teaching Hospital (Fatima Al-Zahraa Dialysis Center) located in the Al-Diwaniyah governorate. A nonprobability convenience sample of patients who consented to participate. A specifically crafted questionnaire consisting of two sections was employed to gather the data: Section one: The socio-demographic characteristics of the patients comprised seven items: age, sex, occupation, educational attainment, marital status, monthly income, and place of residence. Section two evaluates patient medication adherence utilizing an adherence scale comprising 12 questions scored as 1 for always, 2 for sometimes, and 3 for never [9].

In this study, the internal consistency of the medication adherence questionnaire was considered good, as indicated by a Cronbach's alpha coefficient of 0.828. The questionnaire was distributed to five faculty members to solicit their thoughts on the content. Data for this inquiry was collected through interviews. The study's findings were examined and assessed utilizing the statistical software SPSS.[13].

Table (1): Distribution of the study sample according to their Socio-demographic Characteristics.

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Demographic characteristics		Frequency	Percent
Age	20 – 30	3	4.3
	31 – 40	21	30.0
	41 – 50	8	11.4
	51 – 60	33	47.1
	61 -70	5	7.1
Sex	Male	40	57.1
	Female	30	42.9
Occupation	Housewife	6	8.6
	Employee	4	5.7
	Student	7	10.0
	Free work	6	8.6
	Retired	4	5.7
	Don't work	43	61.4
Level of Education	Read and write	26	37.1
	Primary	5	7.1
	Secondary	13	18.6
	Diploma	10	14.3
	Graduate	7	10.0
	High study	9	12.9
Marital status	Single	19	27.1
	Married	47	67.1
	Divorce	4	5.7
Monthly income	Sufficient	11	15.7
	Fairly sufficient	25	35.7
	Not sufficient	34	48.6
Residence	Urban	58	82.9
	Rural	12	17.1

Figure 1.

Table (1) shows the sociodemographic statistics, indicating that the age group 51–60 comprises 47.1% of the total. In the study, males constituted a significant proportion, with 57.1% and 61.4% of them being unemployed. 37.1% of patients were literate. A significant proportion of study participants were married (67.1%), 82.9% resided in metropolitan regions, and 48.6% lacked adequate financial resources for living expenses.[14].

Table (2) Distribution Overall Medication Adherence of Patients with Renal Failure

Items		Frequency	Percent	Mean	S.D
Medication Adherence	Low	41	58.6	1.52	0.67
	Moderate	22	31.4		
	Good	7	10.0		

Table 1.

MS: Mean of Scores L=Low (1-1.66) M = Moderate:(1.67-2.33) ,H= High (2.34-3)

Table (2) shows the overall medication adherence among patients with renal failure, recorded as 58.6% low, 31.4% moderate, and 10% high. Patients with renal failure have low understanding and adherence to their medication.[15].

Table (3) Association between the Overall Medication Adherence of Patients with Renal Failure and Demographic Data

Demographic variables	Chi-square test value	df	P-value	Sig.
Age	6.672	8	.572	N.S.
Gender	1.029	2	.598	N.S.
Level of Education	20.583	10	.024	Sig.
Occupation	8.509	10	.579	N.S.
Marital status	2.493	4	.646	N.S.
Residence	.051	2	.975	N.S.

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Monthly income	2.742	4	.602	N.S.

Table 2.

Table (3) shows that there was no significant correlation between the overall medication adherence of patients with renal failure and variables such as age, sex, marital status, occupation, domicile, and monthly income at $P > 0.05$. A correlation exists between the overall medication adherence of patients with renal failure and their education level, with a $P \geq 0.05$.[16].

Discussion

The principal objective of conducting a study to evaluate patient adherence to pharmaceutical regimens is to comprehend the disparity between prescriptions and actual medication utilization. These investigations facilitate the determination of the proportion of patients who faithfully comply with their treatment regimen and reveal the variables and barriers that hinder others from achieving adherence, such as adverse effects, financial constraints, or missing visits. This comprehension allows healthcare providers to formulate customized awareness strategies and enhance the quality of medical care, ultimately resulting in optimal treatment benefits, diminished rates of medical relapses or recurrent hospital admissions, and consequently, reduced expenses for both the healthcare system and patients.

Concerning sociodemographic attributes, the findings of the present investigation indicated that the proportion for the age group 51–60 is 47.1%. In the study, males constituted a significant proportion, with 57.1% and 61.4% being unemployed. 37.1% of patients were read and write. A significant proportion of study participants were married (67.1%), 82.9% resided in metropolitan regions, and 48.6% lacked adequate financial resources for living expenses.

Our findings align with the results of a prospective observational study undertaken by Anoohya J. et al. (2023), which utilized a questionnaire over a duration of six months. The obtained data encompasses demographic information of renal patients, their medical history, complaints, and prescriptions, along with interviews conducted about their medication adherence utilizing the Morisky scale. Medication Compliance Questionnaire. The predominant percentage of participants consisted of guys and individuals residing in urban locales. The predominant demographic of participants was men and urban inhabitants, with a significant number lacking awareness of their health status and medication usage [10].

The findings of the present investigation indicated that patient adherence to treatment was low, at 58.6%. This aligns with cross-sectional descriptive research undertaken by Pant P. et al. (2026) in specific wards of Chandragiri Municipality. The difficulty of the medication regimen was evaluated utilizing the established Medication Regimen Difficulty Index (MRDI). Most individuals had significant drug regimen complexity, adversely affecting adherence levels. These findings highlight the necessity for healthcare providers to adopt techniques that simplify prescription regimens and enhance adherence, especially in elderly individuals with multimorbidity [11].

The findings of the present study align with those of Tesfaye et al. (2024) in their work titled "Medication Adherence Among Patients With Kidney Disease: An Umbrella Review," which showed This study provides extensive evidence regarding medication adherence in people with chronic kidney disease, utilizing systematic reviews and meta-analyses as sources. Approximately fifty percent of the evaluations concentrated on the impact of treatments on enhancing medication adherence, while others documented the prevalence of nonadherence at various stages of chronic kidney disease [2].

Older patients at comprehensive speciality hospitals in Ethiopia's Amhara Region were the subjects of a multicenter, cross-sectional study that aimed to determine treatment burden and medication adherence (Dagnew, SB, et al., 2025). Research found that almost two-thirds of the elderly patients enrolled in the trial showed poor adherence, and that three-quarters of those patients had a substantial treatment burden. Factors that contributed to non-adherence were self-management, residency, CCI, medication usage, MRCI, and treatment burden; factors that contributed to a substantial treatment burden included age, medication usage, and MRCI. [12].

Conclusions

Approximately two-thirds of the elderly participants in this study exhibited non-adherence to their prescription regimens, and three-quarters encountered a substantial treatment burden.

Recommendations: The findings of this study emphasize that healthcare personnel must acknowledge and mitigate patients' treatment costs and medication non-adherence to enhance health outcomes. Initiatives that reform treatment methods, provide comprehensive patient education, and establish supportive care environments are essential to alleviate these obstacles and enhance drug adherence in this vulnerable group.

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