

Factor Influencing Medication Adherence Among Patients with Chronic Diseases: A Cross Sectional Study

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Abstract:

Objective: This study aimed to investigate the factors influencing medication adherence among patients with chronic diseases using a mixed-methods approach.

Methods: A cross-sectional study was conducted over four months from January to April 2022 with 100 patients from Tertiary hospital. Quantitative data were collected using the Morisky Medication Adherence Scale (MMAS-8), and qualitative data were gathered through in-depth interviews. Quantitative data were analyzed using descriptive statistics, correlation, and regression analyses. Thematic analysis was employed for qualitative data.

Results: The mean MMAS-8 score was 5.8, indicating moderate adherence. Health literacy was positively correlated with medication adherence ($r = 0.42$, $p < 0.001$), while treatment regimen complexity was negatively correlated ($r = -0.36$, $p < 0.01$). Qualitative findings identified four main themes: understanding and managing medications, beliefs and attitudes towards medications, healthcare access, and social support. Patients with higher health literacy, simplified regimens, positive attitudes towards medications, better healthcare access, and strong social support networks reported better adherence.

Conclusion: Medication adherence among patients with chronic diseases is influenced by health literacy, treatment regimen complexity, patient beliefs, healthcare access, and social support. Interventions targeting these factors could enhance adherence and improve patient outcomes.

Keywords: medication adherence, chronic diseases, health literacy, treatment regimen complexity, patient beliefs, healthcare access, social support.

Introduction:

Chronic diseases are a significant public health concern worldwide, contributing to a substantial burden on healthcare systems and quality of life for affected individuals. Effective management of chronic conditions often involves long-term medication regimens to control symptoms, prevent disease progression, and improve overall outcomes. However, medication non-adherence, or lack of compliance, remains a prevalent issue among patients with chronic diseases, leading to suboptimal treatment outcomes and increased healthcare costs.

Understanding the factors that influence medication compliance among patients with chronic diseases is crucial for developing targeted interventions to improve adherence and ultimately enhance patient health outcomes. Previous research has identified various factors that can impact medication adherence, including patient-related factors (e.g., health literacy, beliefs about medications, comorbidities), treatment-related factors (e.g., complexity of regimen, side effects), healthcare system factors (e.g., access to care,

communication with healthcare providers), and socio-economic factors (e.g., financial constraints, social support) (Kvarnström et al., 2021).

For example, a study by Araya et al. (2020) found that low health literacy was significantly associated with medication non-adherence among patients with diabetes. Similarly, a review by Zullig et al. (2015) highlighted the role of patient-provider communication in influencing medication adherence in patients with cardiovascular diseases.

By investigating these factors influencing medication compliance among patients with chronic diseases, this research aims to contribute to the development of tailored interventions that address the specific needs and challenges faced by this patient population. Ultimately, improving medication adherence can lead to better management of chronic conditions, reduced healthcare utilization, and improved quality of life for patients.

Literature Review:

Medication adherence among patients with chronic diseases is a complex issue influenced by various factors. Numerous studies have explored these factors and their impact on medication compliance in different patient populations.

One key factor that has been extensively studied is health literacy. Low health literacy has been consistently associated with medication non-adherence in patients with chronic conditions. For example, a study by Shi et al. (2019) found that patients with lower health literacy levels were more likely to be non-adherent to their medication regimens for hypertension.

Another important aspect affecting medication compliance is the complexity of the treatment regimen. Patients with chronic diseases often have to follow complex medication schedules, which can be challenging to adhere to. Research by Elnaem et al. (2020) demonstrated that simplifying treatment regimens can significantly improve medication adherence in patients with HIV.

Furthermore, patient beliefs and attitudes toward medications play a crucial role in adherence behavior. A study by Araya et al. (2020) showed that patients who had negative perceptions or misconceptions about their medications were more likely to be non-compliant.

Access to healthcare services and social support have also been identified as influencing factors for medication adherence. Patients with limited access to healthcare resources or lack of social support may face barriers to obtaining and adhering to their medications. Viswanathan et al. (2012) highlighted the importance of addressing these social determinants of health in improving medication compliance among patients with chronic diseases.

In summary, the literature suggests that medication adherence in patients with chronic diseases is influenced by a multitude of factors, including health literacy, treatment regimen complexity, patient beliefs, access to care, and social support. Understanding these factors is essential for developing effective interventions to promote medication compliance and improve patient outcomes.

Methodology:

This study aimed to investigate the factors influencing medication compliance among patients with chronic diseases. A mixed-methods approach was employed to gather comprehensive data on medication adherence behavior and the factors affecting it.

Study Design:

A cross-sectional study design was utilized to survey a sample of patients with various chronic diseases, including diabetes, hypertension, and cardiovascular conditions.

Participants:

A total of 100 patients were recruited through purposive sampling, ensuring a mix of demographics, disease types, and medication regimens. Inclusion criteria included being diagnosed with a chronic disease, currently prescribed medication, and aged 18 years or older.

Data Collection:

Data collection spanned four months. Data on medication compliance were collected using self-reported questionnaires, including validated scales such as the Morisky Medication Adherence Scale. In-depth interviews were also conducted with a subset of participants to explore their perceptions, attitudes, and experiences related to medication adherence.

Data Analysis:

Quantitative data were analyzed using descriptive statistics to determine the overall level of medication adherence among participants. Chi-square tests and correlation analyses were performed to examine associations between demographic variables, disease characteristics, and medication compliance. Qualitative data from interviews were transcribed and analyzed thematically to identify common themes and patterns related to factors influencing medication adherence.

Ethical Considerations:

The study protocol was approved by ethics committee, and informed consent was obtained from all participants before their inclusion in the study. Confidentiality of participants' data was strictly maintained throughout the research process.

Findings**Quantitative Finding**

Factor	Finding	Details	Statistical Significance
Overall Medication Adherence	Average MMAS-8 score: 5.8	High adherence: 45% Medium adherence: 30% Low adherence: 25%	
Health Literacy	Positive correlation with adherence	Correlation coefficient (r): 0.42, Patients with higher health literacy had better adherence	$p < 0.001$
Treatment Regimen Complexity	Negative association with adherence	Patients with more complex regimens had lower adherence	$p < 0.01$
Patient Beliefs and Attitudes	Negative beliefs linked to lower adherence	Patients with negative perceptions had lower MMAS-8 scores	$p < 0.05$
Access to Healthcare Services	Limited access linked to lower adherence	Patients facing difficulties in accessing healthcare services had lower adherence	$p < 0.05$
Social Support	Strong social support linked to higher adherence	Patients with strong social support networks had higher adherence	$p < 0.01$

Qualitative Finding

1. Patient Perceptions and Experiences

- Theme: Positive perceptions and trust in healthcare providers enhance adherence. Participant Quotes: "I trust my doctor and believe the medications are necessary for my health." "Understanding how the medication helps me makes it easier to stick to the schedule."

2. Barriers to Adherence

- Theme: Forgetfulness. Participant Quote: "Sometimes I forget to take my medication, especially when I'm busy."

- Theme: Side effects. Participant Quote: "The side effects make it hard for me to keep taking the pills regularly."

3. Facilitators of Adherence

- Theme: Routine. Participant Quote: "Having a set routine helps me remember to take my pills."

- Theme: Family reminders. Participant Quote: "My family reminds me to take my medicine every day."

- Theme: Educational interventions. Participant Quote: "The education sessions with my nurse helped me understand why adherence is important."

4. Impact of Health Literacy

- Theme: Understanding medication instructions. Participant Quote: "Reading the medication instructions and knowing what each pill does helps me stay on track."

- Theme: Motivation through understanding benefits. Participant Quote: "When I understand the benefits of my medication, I'm more motivated to take it."

Discussion

Health Literacy

The positive correlation between health literacy and medication adherence found in this study aligns with previous research. Shi et al. (2019) highlighted that patients with higher health literacy are more likely to adhere to their medication regimens due to a better understanding of their condition and treatment. Our qualitative findings further support this, as participants with higher health literacy reported understanding medication instructions and recognizing the benefits of adherence. This emphasizes the need for healthcare providers to assess and enhance health literacy among patients to improve adherence (Shi et al., 2017).

Treatment Regimen Complexity

Our findings indicate that complex medication regimens negatively impact adherence, consistent with Kvarnström et al. (2021), who found that simplifying treatment regimens can improve adherence. Qualitative data from our study revealed that patients struggled with managing multiple medications and complex schedules, leading to lower adherence. These findings suggest that simplifying medication regimens and providing clear instructions can help mitigate this barrier (Kvarnström et al., 2019).

Patient Beliefs and Attitudes

The study found that negative beliefs and attitudes towards medications were associated with lower adherence, corroborating Park et al. (2018), who reported that misconceptions about medications contribute to non-compliance. Our qualitative data revealed that trust in healthcare providers and positive perceptions of medications significantly enhanced adherence. This underscores the importance of healthcare providers

addressing patients' concerns and misconceptions to foster a positive attitude towards medication adherence (Park et al., 2018).

Access to Healthcare Services

Limited access to healthcare services was linked to lower medication adherence in our study, which is consistent with the findings of Carter et al. (2021). Participants in our qualitative study reported difficulties in accessing medications and healthcare services as significant barriers to adherence. These findings highlight the need for interventions that improve healthcare access, such as telemedicine and home delivery of medications, to support adherence among patients with limited access (Carter et al., 2021).

Social Support

Strong social support networks were found to be positively associated with higher adherence, echoing the findings of previous research. For instance, Shahin et al. (2018) emphasized the role of social support in improving medication adherence among chronic disease patients. Our qualitative data showed that family reminders and support played a crucial role in helping patients adhere to their medication regimens. These insights suggest that involving family members and caregivers in the treatment process can enhance adherence (Shahin et al., 2018).

Implications for Practice

The findings of this study have several implications for clinical practice:

1. **Enhancing Health Literacy:** Healthcare providers should focus on improving health literacy through educational interventions, ensuring patients understand their medication regimens and the importance of adherence.
2. **Simplifying Treatment Regimens:** Efforts should be made to simplify medication regimens where possible, reducing the complexity and burden on patients.
3. **Addressing Patient Beliefs and Misconceptions:** Providers should engage in open communication with patients, addressing any misconceptions and fostering positive attitudes towards medications.
4. **Improving Access to Healthcare Services:** Interventions such as telemedicine, medication delivery services, and better access to healthcare facilities can help overcome barriers to medication adherence.
5. **Leveraging Social Support:** Involving family members and caregivers in the treatment process can provide the necessary support for patients to adhere to their medication regimens.

Limitations and Future Research

This study has several limitations that should be considered. The cross-sectional design limits the ability to draw causal inferences. Additionally, the use of self-reported measures for medication adherence may be subject to bias. Future research should consider longitudinal designs to establish causality and incorporate objective measures of adherence.

Moreover, the study sample was drawn from one region and setting, which may limit the generalizability of the findings to other settings. Future studies should explore medication adherence in diverse settings and populations to enhance the understanding of this complex issue.

Conclusion

In conclusion, this study highlights the multifaceted nature of medication adherence among patients with chronic diseases. Health literacy, treatment regimen complexity, patient beliefs and attitudes, access to healthcare services, and social support all play significant roles in influencing adherence. Addressing these factors through targeted interventions can improve medication adherence and ultimately enhance health outcomes for patients with chronic diseases.

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