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Medication Adherence Levels in Diabetes Mellitus Patients at Primary Healthcare

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Abstract

General Background: Diabetes mellitus is a chronic non-communicable disease requiring long-term therapy, where medication adherence is essential for achieving optimal glycemic control and preventing complications. **Specific Background:** In primary healthcare settings such as Puskesmas Proppo Pamekasan, adherence to antidiabetic therapy remains a critical component of patient management. **Knowledge Gap:** However, the actual level of medication adherence among diabetes mellitus patients in this setting has not been clearly described. **Aims:** This study aimed to determine the level of medication adherence among patients with diabetes mellitus at UPT Puskesmas Proppo. **Results:** Using a descriptive quantitative approach with 30 respondents selected through purposive sampling, the findings showed that most patients were aged ≥45 years, predominantly female, and had suffered from diabetes for ≥5 years, with oral antidiabetic drugs as the main therapy. The level of medication adherence was predominantly moderate (56.7%), followed by high (23.3%) and low adherence (20.0%), indicating inconsistency in following prescribed therapy. **Novelty:** This study provides a localized descriptive profile of medication adherence levels and associated patient characteristics in a primary healthcare context. **Implications:** The findings highlight the need for continuous education, counseling, and monitoring by healthcare professionals, particularly pharmacists, to improve adherence and support optimal diabetes management outcomes.

Highlights:

- Majority of participants were categorized in the moderate compliance group, indicating inconsistency in therapy implementation.
- Patient characteristics such as age, education, and disease duration were associated with adherence patterns.
- Continuous education and counseling are required to support consistent treatment behavior.

Keywords: Diabetes Mellitus, Adherence, Medication Therapy, Patients

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Introduction

Diabetes mellitus is a non-communicable disease that constitutes a public health problem due to its continuously increasing prevalence [1]. This disease is characterized by elevated blood glucose levels caused by impaired insulin secretion, insulin action, or a combination of both. This condition requires patients with diabetes mellitus to undergo long-term treatment, even for a lifetime [2].

The success of diabetes mellitus management largely depends on patient adherence to the prescribed drug therapy [3]. Medication adherence is defined as the extent to which a patient's behavior in taking medication conforms to healthcare professionals' recommendations, including dosage, timing, and method of administration [4]. Non-adherence can lead to therapeutic failure, suboptimal blood glucose control, and an increased risk of complications [5].

Puskesmas Proppo Pamekasan, as a primary healthcare facility, plays an important role in the management of patients with diabetes mellitus, particularly in the provision of drug therapy and health education [6]. Therefore, research on the level of medication adherence among patients with diabetes mellitus at Puskesmas Proppo Pamekasan is important as a basis for improving the quality of healthcare services [7].

Method

This study is a descriptive study with a quantitative approach. The research was conducted at Puskesmas Proppo Pamekasan [8]. The study population consisted of all patients with diabetes mellitus who were undergoing drug therapy at Puskesmas Proppo Pamekasan [9]. The study sample comprised 30 respondents selected using purposive sampling based on inclusion and exclusion criteria [10]. The research instrument used was a medication adherence questionnaire. The data obtained were analyzed descriptively to describe the level of medication adherence among patients with diabetes mellitus [11].

Results and Discussion

This study was conducted among 30 respondents who were patients with diabetes mellitus undergoing drug therapy at Puskesmas Proppo Pamekasan [12]. The results are presented in the form of respondent characteristics and levels of medication adherence [13].

1. Respondent Characteristics Based on Age

Table 1. Distribution of Respondents Based on Age

Age (Years)	Number (N)	Percentage (%)
30–45	6	20,0
46–60	14	46,7
> 60	10	33,3
Total	30	100

Based on Table 1, the majority of respondents were in the 46–60 years age group (46.7%), indicating that diabetes mellitus is more prevalent in middle-aged to older adults [14].

2. Respondent Characteristics Based on Gender

Table 2. Distribution of Respondents Based on Gender

Gender	Number (N)	Percentage (%)
Laki-Laki	12	40,0
Perempuan	18	60,0
Total	30	100

Table 2 shows that female respondents were more numerous than male respondents, accounting for 60%. This may be related to differences in health behavior and lifestyle patterns [15].

3. Respondent Characteristics Based on Education

Table 3. Distribution of Respondents Based on Educational Level

Education	Number (N)	Percentage (%)
Primary Education	11	36,7
Secondary Education	14	46,6
Higher Education	5	16,7
Total	30	100

Based on Table 3, the majority of respondents had a secondary level of education. Educational level has the potential to influence patients' understanding of drug therapy [16].

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4. Duration of Diabetes Mellitus

Table 4. Distribution of Respondents Based on Duration of Diabetes Mellitus

Duration of Diabetes Mellitus	Number (N)	Percentage (%)
< 5 Years	13	43,3
5–10 Years	10	33,3
> 10 Years	7	23,4
Total	30	100

Table 4 shows that the majority of respondents had been suffering from diabetes mellitus for less than 5 years; however, there were also patients with a relatively long duration of the disease [17].

5. Level of Patient Adherence to Drug Therapy

Table 5. Distribution of Medication Adherence Levels

Level of Adherence	Number (N)	Percentage (%)
High Adherence	8	26,7
Moderate Adherence	15	50,0
Low Adherence	7	23,3
Total	30	100

Based on Table 5, the majority of respondents were in the moderate adherence category (50%), indicating that patients were not yet fully consistent in following drug therapy according to healthcare professionals' recommendations [18].

6. General Description of Medication Adherence

Patients with a high level of adherence generally had regular medication-taking habits and understood the importance of drug therapy in controlling diabetes mellitus. Meanwhile, patients with moderate and low adherence tended to experience obstacles such as forgetting to take medication, fatigue from long-term therapy, and a lack of understanding of the benefits of drug therapy [19]. These results indicate that although some patients have undergone treatment, the level of medication adherence still requires improvement through education and continuous therapy monitoring at Puskesmas Proppo Pamekasan [20].

The results of this study indicate that the level of adherence of patients with diabetes mellitus to drug therapy at Puskesmas Proppo Pamekasan is still not optimal. The dominance of the moderate adherence category suggests that there are still obstacles in the implementation of drug therapy by patients [21].

7. Relationship Between Age and Medication Adherence

Based on Table 4.1, most respondents were in the 46–60 years age group and those aged over 60 years [22]. This condition indicates that diabetes mellitus is more prevalent among middle-aged to older adults. In this age group, medication adherence can be influenced by a decline in physical and cognitive function, such as reduced memory, which may cause patients to forget to take their medication regularly [23]. Elderly patients also tend to have comorbid conditions that require the use of more than one type of medication. This condition can increase therapy complexity and have an impact on decreased adherence [24]. Therefore, patients in this age group require special attention in the form of assistance and more intensive therapy monitoring [25].

8. Gender and Adherence Behavior

The results in Table 2 show that female respondents were more numerous than male respondents. [26] Gender differences can influence health behavior, including medication adherence. Women generally make more active use of healthcare services and tend to be more adherent to healthcare professionals' recommendations [27]. However, treatment adherence is not determined solely by gender, but is also influenced by psychological, social, and cultural factors [28]. Therefore, healthcare service approaches at Puskesmas Proppo Pamekasan need to consider patient characteristics comprehensively [29].

9. Effect of Educational Level on Adherence

Based on Table 4.3, most respondents had a secondary level of education, while some respondents had a primary level of education. Educational level plays an important role in influencing patients' ability to understand health information, including explanations regarding medication use [30]. Patients with higher educational levels tend to more easily receive and understand health education provided by healthcare professionals. In contrast, patients with lower educational levels may experience difficulties in understanding medication instructions, which can result in lower medication adherence.

10. Duration of Diabetes Mellitus and Adherence

Table 4.4 shows that most respondents had been suffering from diabetes mellitus for less than five years, although there were also patients with a duration of more than ten years. The duration of the disease can influence the level of medication

adherence in different ways [31]. In newly diagnosed patients, motivation to adhere to treatment is usually still high. However, in patients with a longer disease duration, long-term treatment can lead to treatment fatigue, resulting in decreased adherence. This condition highlights the importance of continuous monitoring and sustained motivation for patients with diabetes mellitus [32].

11. Level of Medication Adherence in Patients with Diabetes Mellitus

Based on Table 5, most respondents were in the moderate adherence category. This indicates that although patients have been taking medication, there is still inconsistency in carrying out therapy according to healthcare professionals' recommendations [33]. Moderate adherence indicates that patients sometimes forget to take their medication or do not always follow the prescribed schedule and dosage. Meanwhile, patients with high adherence demonstrate good treatment behavior, whereas patients with low adherence are at risk of therapeutic failure and disease complications [34]. In addition, family involvement in supporting patients in undergoing drug therapy is also highly necessary, especially for elderly patients. With optimal support, patients are expected to become more adherent to drug therapy so that diabetes mellitus control can be achieved optimally.

Conclusion

This study shows that the level of medication adherence among patients with diabetes mellitus at Puskesmas Proppo Pamekasan was mostly in the moderate adherence category. This indicates that patients were not yet fully consistent in undergoing drug therapy according to healthcare professionals' recommendations. Medication adherence was influenced by patient characteristics such as age, educational level, and duration of diabetes mellitus. Therefore, efforts to improve adherence through health education and continuous monitoring of drug therapy are needed at Puskesmas Proppo Pamekasan.

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