PATIENT COMPLIANCE WITH MEDICAL THERAPY IN DIABETES MELLITUS A COMPARATIVE STUDY BETWEEN PUBLIC HEALTH CENTERS AND PRIVATE CLINICS

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Abstract

Diabetes Mellitus (DM) is a chronic, progressive metabolic disorder requiring long-term pharmacological management. Patient adherence to prescribed therapy is a critical determinant of glycemic control and the prevention of complications. In Indonesia, DM care is delivered through both public health centers (Puskesmas) and private clinics, which differ in infrastructure, patient load, and service quality. This study aims to evaluate and compare the medication adherence of patients diagnosed with Type 2 Diabetes Mellitus (T2DM) who receive care at Puskesmas versus those attending private clinics in a suburban district of A comparative cross-sectional study was conducted from October to December 2024, involving 200 patients with T2DM. Of these, 100 patients were recruited from Puskesmas and 100 from private clinics. The Morisky Medication Adherence Scale (MMAS-8) was utilized to assess adherence levels, and data were analyzed using descriptive and inferential The study found that 68% of patients attending private clinics exhibited high adherence to medical therapy, compared to only 52% in the Puskesmas group. Factors such as patient education, doctor-patient rapport, accessibility of medications, and socioeconomic status significantly influenced adherence rates. Private clinic patients were found to have better access to healthcare resources, leading to improved treatment outcomes. Medication adherence in DM patients is significantly higher in private clinics compared to public health centers. This highlights the need for strengthening healthcare systems in public facilities, including improving the quality of doctor-patient interactions, ensuring the availability of medications, and enhancing patient education.

Keyword: Improve Health Outcomes.

Introduction

Diabetes Mellitus (DM) is a chronic disease that affects millions of individuals globally, with an increasing prevalence in both developed and developing countries. According to the International Diabetes Federation (IDF), approximately 463 million people were living with diabetes in 2019, with this number expected to rise significantly in the coming decades. The management of diabetes involves lifestyle modifications and lifelong adherence to medication regimens. However, non-adherence to medical therapy remains a global challenge, contributing to poor disease outcomes and increased healthcare costs.

In Indonesia, diabetes care is provided through both public health centers (Puskesmas) and private clinics. These healthcare settings differ in terms of resource availability, accessibility, patient care models, and socioeconomic factors. The Puskesmas, funded by the government, aim to provide affordable healthcare services, especially in rural and underserved areas. On the other hand, private clinics offer more personalized care but tend to be less affordable for the general population. This study seeks to explore how these different settings impact medication adherence among DM patients.

Medication adherence in chronic disease management is a critical determinant of treatment success. Research indicates that patients who adhere to prescribed therapies are more likely to experience better disease control and lower rates of complications. However, studies show that adherence rates among diabetes patients vary significantly across different settings.

A study by Ho et al. (2016) found that factors influencing adherence include socioeconomic status, health literacy, doctor-patient communication, medication complexity, and availability of healthcare resources. In low-resource settings such as Indonesia, patients often face barriers to adherence, including long waiting times, insufficient medication supply, and inadequate health education.

A previous study by Dilla et al. (2018) showed that patients who receive care in private clinics tend to exhibit higher adherence due to more frequent consultations, better access to medication, and greater patient education. In contrast, Puskesmas patients often report challenges such as limited time with healthcare providers and a lack of continuity in care.utilizing real-time air quality monitoring data in conjunction with epidemiological records.

Research methods

Study Design and Participants

This study utilized a comparative cross-sectional design to examine medication adherence among T2DM patients attending Puskesmas and private clinics. A total of 200 patients were recruited, with 100 patients from each healthcare setting. Inclusion criteria included individuals aged 18 and above, diagnosed with T2DM for at least one year, and currently on medication for diabetes management.

Instruments

The primary instrument used to assess medication adherence was the Morisky Medication Adherence Scale (MMAS-8), a validated self-report tool consisting of eight questions that measure the frequency of missed doses and the patient's attitude towards medication. Additionally, a demographic questionnaire was administered to collect information about age, gender, education level, income, and healthcare access.

Data Analysis

Descriptive statistics were employed to summarize patient characteristics and adherence levels. Chi-square tests were used to examine the relationship between categorical variables, while independent t-tests were applied to compare continuous variables between the two groups. Statistical significance was set at $p < 0.05$.

Results and Discussion

Demographic Characteristics

Variable	Puskesmas (n=100)	Private Clinic (n=100)	*p*-value
Mean Age (years)	56.2 ± 8.7	57.1 ± 7.9	0.42
Female (%)	64	60	0.57
Education ≥ High School (%)	45	72	0.001
Monthly Income > IDR 3M (%)	28	63	0.000

Adherence to Therapy

MMAS-8 Score Category	Puskesmas (%)	Private Clinic (%)
High adherence (8)	24	38
Medium (6–7)	28	30
Low (≤5)	48	32

Significant differences were observed between the two groups ($p = 0.011$), with higher adherence observed among patients at private clinics.

Factors Influencing Adherence

Factor	Puskesmas (%)	Private Clinic (%)	*p*-value
Received health education	40	75	<0.001
Good doctor-patient rapport	55	80	0.002
Medication availability	60	85	0.000

Discussion

Overview of Adherence Levels

The findings from this study revealed a significant difference in medication adherence between patients treated at Puskesmas and those attending private clinics. The higher adherence rate observed in private clinic patients (68%) compared to Puskesmas patients (52%) underscores the impact that healthcare setting quality can have on patient behavior. These findings align with previous studies suggesting that the quality of care, along with the availability of resources, plays a key role in determining patient compliance.

Healthcare Access and Resource Availability

A major factor influencing adherence in this study was the accessibility of healthcare resources, which was notably better in private clinics. Patients at private clinics generally have more direct access to medications, with fewer instances of stockouts, which is a frequent issue at Puskesmas, especially in rural or less developed areas. The availability of prescribed drugs is crucial for continuous adherence, as interruptions in medication can lead to suboptimal disease control and increased risk of complications.

At Puskesmas, while medication is provided at a lower cost, the irregular availability of drugs and long waiting times for consultations can contribute to decreased adherence. Previous studies have found that inconsistent drug availability at public health centers is a common challenge, leading to frustration and poor adherence (Chowdhury et al., 2017). Moreover, patients often have to wait for long periods to receive care, which can lead to dissatisfaction and ultimately, lower commitment to treatment.

Doctor-Patient Relationship

Another significant factor contributing to adherence is the quality of the doctor-patient relationship. Patients who feel that their healthcare providers are genuinely interested in their well-being are more likely to follow treatment regimens. In private clinics, longer consultation times, more personalized care, and higher patient satisfaction contribute to better relationships between doctors and patients. This is reflected in the higher level of patient compliance observed in the private clinic group.

Conversely, in Puskesmas, the limited consultation time, due to higher patient volumes and constrained resources, often prevents healthcare providers from offering the same level of personalized attention. A study by King et al. (2020) found that patients who have more frequent and in-depth interactions with their healthcare providers are more likely to adhere to treatment regimens. At Puskesmas, the lack of continuity in care due to rotating staff or high turnover also hinders the establishment of strong, trusting relationships, which may negatively impact adherence.

Health Education and Patient Knowledge

Health education plays a crucial role in medication adherence, and this study found a significant difference in the levels of health education provided at Puskesmas versus private clinics. In private clinics, a larger proportion of patients reported receiving structured health education, including information on the importance of consistent medication adherence, lifestyle changes, and self-monitoring of blood glucose levels. Education, particularly on diabetes self-management, has been consistently linked to improved adherence in diabetes patients (Morisky et al., 2008).

At Puskesmas, health education tends to be less systematic. While patients are often given general advice, the resources and time available to educate patients comprehensively about their disease and its management are limited. Health education at Puskesmas often lacks personalization, and the emphasis is generally on providing medical treatment rather than fostering patient empowerment through knowledge.

The lack of structured diabetes education at Puskesmas may be one of the key reasons why adherence is lower compared to private clinics. Research by Rhee et al. (2015) highlights that patients who are well-informed about the consequences of non-adherence and the benefits of treatment are more likely to stick to their prescribed regimens.

Socioeconomic Factors

Socioeconomic status is another critical determinant of medication adherence. The patients in the private clinic group generally had higher income levels and more formal education compared to those in the Puskesmas group. Higher income allows patients to afford better healthcare services, including private consultations, medications, and additional resources such as glucose meters. Furthermore, higher educational attainment is often associated with better health literacy, enabling individuals to understand the importance of adhering to treatment.

Patients at Puskesmas, who generally come from lower-income backgrounds, face greater challenges in managing diabetes. The financial burden of regular medical appointments, transportation costs, and medications often leads to non-adherence. Moreover, lower education levels can hinder the understanding of treatment regimens and the long-term benefits of adherence.

This socioeconomic gap has been well-documented in previous literature, where studies have found that patients with lower socioeconomic status are less likely to adhere to diabetes treatment due to financial constraints, lack of access to resources, and insufficient understanding of the disease (Gonzalez et al., 2017).

Impact of Health System on Compliance

A crucial factor influencing adherence is the structure and operation of the healthcare system itself. In Puskesmas, while services are subsidized by the government and thus more affordable, the system faces significant challenges in terms of infrastructure, staffing, and resources. The average number of patients seen daily in Puskesmas is high, leading to rushed consultations and limited opportunities for in-depth patient education and follow-up care. This systemic issue makes it difficult for healthcare providers to adequately address the specific needs of each patient, particularly in managing chronic diseases like diabetes.

Private clinics, on the other hand, benefit from a more flexible and patient-centered approach. Although the cost of services is higher, the benefit is often reflected in improved care quality, better monitoring of patient progress, and more individualized attention. This system allows for more effective follow-up visits, allowing healthcare providers to assess medication adherence, make necessary adjustments to the treatment plan, and reinforce patient education on a regular basis.

Behavioral and Psychological Factors

Psychological factors such as depression and anxiety are also linked to poor medication adherence. Patients with diabetes often face psychological challenges, including fear of long-term complications, which can affect their motivation to adhere to treatment. In private clinics, where personalized care and continuous interaction are more common, healthcare providers may be more likely to recognize and address these psychological barriers to adherence. In contrast, at Puskesmas, the limited time available for each patient may prevent healthcare providers from adequately addressing these psychological concerns, further contributing to lower adherence rates.

Closing

This study provides critical insights into the factors influencing medication adherence among Type 2 Diabetes Mellitus (T2DM) patients in two different healthcare settings—public health centers (Puskesmas) and private clinics. The findings suggest that medication adherence is significantly higher among patients attending private clinics, a trend that can be attributed to several key factors: better healthcare access, more personalized care, enhanced doctor-patient relationships, and superior health education. These factors, in turn, lead to more consistent medication use and improved disease management. Future studies should focus on understanding the long-term effects of healthcare setting-related factors on medication adherence. Longitudinal research can help determine whether the differences observed in adherence are sustained over time and whether interventions such as improved doctor-patient relationships or more robust health education programs lead to lasting improvements in adherence. Additionally, exploring the role of digital health tools, such as mobile applications or telemedicine, in improving adherence could offer valuable insights into how technology can support diabetes care, particularly in resource-limited settings.

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