INDOGENIUS

ISSN 2828-1365

Volume 4, Issue 2 : 269 – 276

The Relationship Between Illness Perception and Religiosity on Medication Adherence Among Type 2 Diabetes Mellitus Patients at Puskesmas Lampihong

Helenisa[1*], Onieqie Ayu Dhea Manto[1], Cynthia Eka F. T[1], Rian Tasalim[1]
[1]*Universitas Sari Mulia, Banjarmasin, Kalimantan Selatan, Indonesia*

Article Info

Keywords :
Illness Perception, Medication Adherence, Religiosity, Type 2 Diabetes Mellitus.

Corresponding Author :
Helenisa
E-mail :
helenisarezki@gmail.com
Phone Number : 082150186215

ABSTRACT

Background & Objective: Adherence to medication is a key factor in controlling Diabetes Mellitus; however, challenges in patient compliance are still frequently encountered. Illness perception and religiosity have been shown to have a significant impact on adherence levels. Preliminary data from Lampihong Health Center indicate an increase in DM cases, yet medication adherence remains low, highlighting the need for an in-depth study of the influencing factors. This study aims to analyze the relationship between illness perception and religiosity and their impact on medication adherence among patients with type 2 diabetes mellitus receiving treatment at the Lampihong Health Center. **Methods:** This study employs a cross-sectional design with a descriptive correlational approach. A total of 30 type 2 DM patients were selected using an accidental sampling technique. Data were collected using the Illness Perception Questionnaire, Religious Involvement Questionnaire, and the Morisky Medication Adherence Scale. Pearson correlation tests were used for data analysis. **Results:** A significant relationship was found between illness perception and religiosity with medication adherence ($p < 0.05$). Patients with positive illness perceptions and higher religiosity levels tend to have better medication adherence. **Conclusion:** A positive illness perception and high religiosity can enhance medication adherence in type 2 DM patients. These findings provide a basis for developing interventions that consider psychosocial and spiritual aspects in the management of DM at the local level.

DOI: https://doi.org/10.56359/igj.v4i2.565

Introduction

Diabetes mellitus (DM) is one of the chronic diseases whose prevalence continues to rise worldwide, including in Indonesia. The causes of this disease can be attributed to obesity, genetic factors, age, socioeconomic factors, stress, and unhealthy lifestyles (American Diabetes Association, 2020). According to a report by the World Health Organization (WHO), more than 422 million people worldwide were living with diabetes in 2021, and approximately 1.5 million deaths were directly caused by this disease each year (WHO, 2021). Additionally, based on data from the International Diabetes Federation (IDF) in 2021, the number of diabetes sufferers in Indonesia reached 19.47 million, placing Indonesia fifth among countries with the highest number of diabetes cases in the world (IDF, 2021).

Diabetes in Indonesia is also expected to increase in line with global trends, predicted to reach 643 million sufferers by 2030 and 783 million by 2045 (IDF, 2021). Data from the Indonesian Ministry of Health shows that the prevalence of diabetes among Indonesian adults reached 8.5% in 2018, up from 6.9% in 2013 (Kemenkes RI, 2022). In South Kalimantan, the prevalence of Diabetes Mellitus reached approximately 1.5%, with a significant increase in cases in several districts, including Balangan District (Riskesdas, 2018).

This disease not only burdens the healthcare system but also significantly impacts the quality of life of its sufferers. Diabetes often serves as a major risk factor for serious complications such as cardiovascular disease, kidney failure, and amputations, ultimately increasing morbidity and mortality rates (Kemenkes RI, 2022).

In a local context, the Lampihong Health Center also faces the same challenges. Data recorded at the Lampihong Health Center shows that in 2022, there were 498 DM patients, in 2023 there were 520 patients, and from January to August 2024, there were 198 patients recorded. This data clearly indicates an increase in the number of DM cases each year, compounded by low adherence to treatment. Treatment adherence is a key factor in diabetes management, as consistent and regular treatment can prevent more serious complications (Sari et al., 2020). Various internal factors, such as illness perception and individual spiritual levels, also influence this adherence.

Perception of illness plays a crucial role in how an individual understands, evaluates, and ultimately decides to adhere to treatment. Inaccurate or negative perceptions of DM can lead sufferers to underestimate their condition, neglect treatment, and ultimately experience complications (Leventhal et al., 2016). On the other hand, religiosity, which reflects an individual's religious beliefs and practices, is also known to have a significant influence on health behaviors, including adherence to treatment. In communities with high levels of religiosity, beliefs and religious practices often serve as a foundation for decision-making, including healthcare decisions (Koenig, 2021).

Adherence to DM treatment is essential to prevent serious complications such as nerve damage, heart disease, and kidney failure. Appropriate therapy helps control blood sugar levels, reduces disease risk, and improves patients' quality of life

(American Diabetes Association, 2020). If adherence is not achieved, the risk of complications increases drastically. The impact is not limited to the patients themselves but can also burden families, communities, and the healthcare system. Non-adherence to treatment can lead to serious complications that require more intensive care and higher costs. Additionally, the increase in morbidity and mortality due to diabetes complications also adds emotional and financial burdens for patients' families and society (Halim et al., 2019).

Furthermore, from a psychosocial perspective, DM patients who do not adhere to treatment often experience a decline in quality of life. The inability to manage the disease effectively can lead to stress, depression, and social isolation, ultimately worsening overall health conditions. This situation emphasizes the importance of considering psychological and spiritual factors that influence adherence to treatment (Fisher et al., 2020).

Although many studies have shown a relationship between illness perception and treatment adherence in DM patients, there remains a significant gap between theory and practice. For example, illness perception theory suggests that individuals with a better understanding of their disease are more likely to adhere to treatment. In practice, many DM patients still have misconceptions or a lack of understanding about their condition, leading to low adherence (Broadbent et al., 2020). This highlights the need for more effective approaches in patient education to enhance their understanding of DM and the importance of treatment adherence.

Previous studies have shown a significant relationship between illness perception and treatment adherence in DM patients. For instance, research by Broadbent et al. (2020) indicated that DM patients with a positive perception of their disease, such as viewing DM as a manageable condition, were more likely to adhere to prescribed treatment. This underscores the importance of improving illness perception through effective health education to enhance treatment adherence among DM patients.

Additionally, research by Park et al. (2018) found that religiosity also plays an important role in treatment adherence. Patients with high levels of religiosity tend to be more adherent to treatment due to the belief that maintaining health is part of their religious responsibility. This study highlights the importance of incorporating aspects of religiosity into health approaches to improve treatment adherence among DM patients.

Preliminary studies conducted at the Lampihong Health Center showed that out of 10 DM patients surveyed, only 4 demonstrated high adherence to treatment. Further analysis revealed that 6 non-adherent DM patients had negative perceptions of their disease, while 5 of them had low levels of religiosity. These findings indicate that illness perception and religiosity are important factors influencing treatment adherence among DM patients in the region.

Based on the background above, it is clear that illness perception and religiosity are two important factors influencing treatment adherence among DM patients. This

study aims to further examine the relationship between illness perception and religiosity on treatment adherence among DM patients at the Lampihong Health Center. The results of this study are expected to serve as a basis for developing more effective interventions to improve treatment adherence and, ultimately, the quality of life for DM patients.

Objective

This study aims to analyze the relationship between illness perception and religiosity and their impact on medication adherence among patients with type 2 diabetes mellitus receiving treatment at the Lampihong Health Center. It is hoped that the results of this study will provide a deeper understanding of the management of type 2 diabetes mellitus in the region.

Method

This study employs a quantitative method with a cross-sectional design to examine the relationship between illness perception, religiosity, and medication adherence among patients with type 2 diabetes mellitus at Puskesmas Lampihong. The study population consists of all registered diabetes patients receiving treatment at the health center. A purposive sampling technique was utilized, with inclusion criteria being patients aged ≥18 years who consented to participate, while exclusion criteria included patients with severe comorbidities or those who were uncooperative.

The sample size was determined using Slovin's formula, resulting in 30 respondents. Data were collected from both primary and secondary sources. Primary data included demographic information, illness perception, religiosity, and medication adherence, which were gathered through structured questionnaires. The questionnaires were adapted from validated instruments, including the Illness Perception Questionnaire (IPQ), Religious Involvement Questionnaire, and Morisky Medication Adherence Scale (MMAS).

The research instruments included identity forms and the aforementioned questionnaires. Validity was assessed using Pearson Product Moment, while reliability was evaluated through test-retest reliability using Cronbach's Alpha (>0.70). Data analysis involved univariate analysis for frequency distribution and bivariate analysis using Pearson correlation to explore the relationships between the variables. If assumptions for Pearson correlation were not met, non-parametric tests were applied.

The study was conducted over a six-month period, from preparation to reporting, with approval from Puskesmas Lampihong (Approval No.: 800/369/PKM-LPH/2024) and ethical clearance from the institution (Ethical Approval No.: 020/KEP-UNISM/XII-2024). The results will be presented in tables, graphs, and descriptive narratives to provide a comprehensive overview of the findings.

Results

TABLE 1. Relationship Between Illness Perception and Patient Medication Adherence

Illnesss Perception	Patient Adherence to Treatment			Total	*p-value*
	Low	Moderate	High		
Moderate	1	3	2	6	0.024
High	4	11	9	24	
Total	5	14	11	30	

Based on Table 1, it can be concluded that, overall, a high illness perception is associated with a higher tendency for medication adherence compared to a moderate perception. Statistical analysis yields a p-value of 0.024, indicating that the relationship between illness perception and medication adherence is statistically significant.

TABLE 2. Relationship Between Levels of Religiosity and Patient Medication Adherence

Tingkat Relegiusitas	Patient Adherence to Treatment			Total	*p-value*
	Low	Moderate	High		
Moderate	1	3	1	5	0.127
High	4	11	10	25	
Total	5	14	11	30	

Based on Table 2, it can be concluded that, overall, respondents with high levels of religiosity demonstrate a higher tendency for medication adherence compared to respondents with moderate levels of religiosity. However, statistical analysis yields a p-value of 0.127, indicating that the relationship between religiosity levels and medication adherence is not statistically significant.

Discussion

Based on Table 1 of this study, it shows the relationship between illness perception and the level of medication adherence among patients, using primary data collected in 2024. The table categorizes illness perception into two groups: moderate and high. Data processing indicates a statistically significant relationship between these two variables, with a p-value of 0.024, suggesting that this relationship is significant at the 0.05 level.

The frequency distribution in the table reveals that out of 30 respondents, 24 had a high illness perception. Among those with high perception, 4 respondents had low adherence, 11 had moderate adherence, and 9 had high adherence to treatment. Meanwhile, of the 6 respondents with moderate illness perception, 1 had low adherence, 3 had moderate adherence, and 2 had high adherence. This indicates that a higher illness perception is generally associated with better medication adherence.

Illness perception describes how an individual understands and responds to the symptoms of their illness, including beliefs about the causes, consequences, duration, and control they have over the disease (Petrie & Weinman, 2019). According to Leventhal's Self-Regulatory Model, individuals with higher illness perception tend to have greater motivation to follow treatment recommendations in an effort to control or manage their illness (Leventhal et al., 2016). Previous studies in Indonesia and abroad have also shown similar results, where higher illness perception is associated with better therapy adherence among patients with chronic conditions (Suharsono,

2021; Johnson et al., 2022). This can be explained by the involvement of patients in managing their illness, as those with a better understanding of their condition are more likely to be proactive in following the prescribed treatment plan. Given the importance of illness perception in medication adherence, interventions aimed at enhancing patients' understanding of their illness may be an effective strategy for improving health outcomes. Health education tailored to patients' informational needs and utilizing methods that can enhance illness perception, such as counseling and educational materials, could be beneficial approaches (Rahmawati & Bajorek, 2019).

In the context of this research, the findings can be used to develop intervention programs targeting the improvement of illness perception as an effort to enhance medication adherence. Particularly in clinical settings in Indonesia, where variations in access to health information and health literacy levels may influence illness perception, culturally and contextually adjusted educational approaches may be essential (Hartono, 2022). Overall, these results support existing literature and indicate that improving patients' understanding of their illness through effective and empathetic health education can strengthen therapy adherence, which in turn may improve health outcomes.

Based on Table 2 from the study conducted in 2024, the relationship between religiosity levels and medication adherence among patients is explored, focusing on two categories of religiosity: moderate and high. The results from the table indicate no significant relationship between religiosity levels and medication adherence, as evidenced by a p-value of 0.127, which exceeds the common significance threshold (0.05). In the study, 5 respondents were categorized as having moderate religiosity, with 1 respondent having low adherence, 3 moderate, and 1 high. Meanwhile, among the 25 respondents with high religiosity, 4 had low adherence, 11 had moderate adherence, and 10 had high adherence to treatment. This distribution suggests that although a majority of highly religious respondents tend to have better adherence levels compared to those with moderate religiosity, this relationship does not reach statistical significance.

Religiosity is often considered a factor influencing health behavior, as religious beliefs and practices can provide social and psychological support that may affect treatment decisions and adherence (Koenig, 2019). Previous studies have found that more religious individuals tend to exhibit better health behaviors, including adherence to treatment (Alam & Hamzah, 2020). However, the results from this table indicate that the relationship between religiosity and medication adherence is not always linear and can be influenced by various other factors, such as the type of illness, education level, social support, and personal beliefs about the effectiveness of treatment (Ahmed et al., 2021). Therefore, it is important to consider other factors that may mediate or moderate this relationship in clinical practice and health interventions.

A study in Indonesia conducted by Hartono and colleagues (2022) found that cultural and social factors play a more significant role in medication adherence among

patients with high religiosity. This suggests that in a strong cultural and religious context, such as in Indonesia, the relationship between religiosity and health may be more complex and influenced by deep-rooted social norms and values. To address this complexity, further research is needed to understand how the interaction between religiosity, socio-economic factors, and psychological factors affects medication adherence. Interventions designed to improve medication adherence may need to be tailored to consider the dimensions of religiosity and patients' religious beliefs as part of a comprehensive approach to disease management (Smith et al., 2022). Overall, the findings from this study provide important initial insights into the dynamics between religiosity and medication adherence and highlight the need for a more holistic and contextual approach to addressing patient health in culturally and religiously diverse settings.

Conclusion

This study concludes that higher illness perception significantly improves medication adherence, highlighting the importance of patient education. Although religiosity showed a positive trend, it was not statistically significant, suggesting adherence is influenced by multiple factors. A holistic, culturally sensitive approach is essential for effective patient care.

Acknowledgement

The researchers express their deepest gratitude to Puskesmas Lampihong for granting permission and providing support in collecting the necessary data for this study. Appreciation is also extended to the healthcare professionals and staff who assisted in the data collection process, ensuring the smooth completion of this research.

The researchers are sincerely grateful to all respondents who willingly participated in this study, contributing valuable information that made this research possible. Additionally, special thanks are given to colleagues for their constructive feedback and continuous support throughout the research process. It is hoped that the findings of this study will contribute to scientific advancement and the improvement of healthcare services.

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