

The Role of Perception in Medication Adherence among Elderly Patients with Diabetes Mellitus: A Health Belief Model Approach

Aliyah Nur Alfita¹, Neti Juniarti², Citra Windani Mambang Sari³

¹ Nursing Science Study Program, Faculty of Nursing, Universitas Padjadjaran, Indonesia

^{2,3} Department of Community Health Nursing, Faculty of Nursing, Universitas Padjadjaran, Indonesia

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ABSTRACT

Kepatuhan pengobatan merupakan determinan kunci untuk menjaga kualitas hidup dan mencegah komplikasi serius pada lansia dengan diabetes melitus. Namun, kepatuhan sering kali terhambat oleh berbagai faktor, terutama persepsi individu terhadap penyakit dan terapinya. Persepsi negatif atau pemahaman yang kurang memadai dapat menjadi penghalang utama dalam keberhasilan pengobatan. Penelitian ini bertujuan untuk mengevaluasi asosiasi antara persepsi lansia penderita diabetes, yang diukur menggunakan kerangka Health Belief Model (HBM), dengan tingkat kepatuhan pengobatan mereka. Studi korelasional dengan pendekatan cross-sectional ini dilakukan dari 20 November hingga 17 Desember 2024 di Kelurahan Babakan Sari. Sampel sebanyak 64 responden direkrut menggunakan teknik simple random sampling. Data dikumpulkan melalui kuesioner Health Belief Model dan kuesioner kepatuhan pengobatan, kemudian dianalisis secara univariat dan bivariat dengan uji korelasi Spearman Rank. Hasil analisis menunjukkan adanya hubungan positif yang kuat dan signifikan secara statistik antara persepsi berdasarkan HBM dengan kepatuhan pengobatan ($r = .716, p < .001$). Persepsi terhadap hambatan (perceived barriers) dan manfaat (perceived benefits) teridentifikasi sebagai dua komponen HBM yang paling berpengaruh dalam menentukan kepatuhan pengobatan pada lansia dengan diabetes melitus. Intervensi yang menargetkan kedua persepsi ini berpotensi meningkatkan keberhasilan terapi pada populasi ini.

Medication adherence is a key determinant for maintaining quality of life and preventing serious complications in older adults with diabetes mellitus. However, adherence is often hindered by various factors, particularly individual perceptions of the disease and its therapy. Negative perceptions or inadequate understanding can constitute a major obstacle to successful treatment outcomes. This study aimed to evaluate the association between the perceptions of older adults with diabetes, as measured by the Health Belief Model (HBM) framework, and their level of medication adherence. This cross-sectional, correlational study was conducted from November 20 to December 17, 2024, in the Babakan Sari sub-district. A sample of 64 respondents was recruited using simple random sampling. Data were collected using the Health Belief Model questionnaire and a medication adherence questionnaire, and subsequently analyzed using univariate and bivariate analysis with the Spearman Rank correlation test. The analysis revealed a statistically significant, strong positive relationship between HBM-based perceptions and medication adherence ($r = .716, p < .001$). Perceived barriers and perceived benefits were identified as the two most influential HBM components in determining medication adherence among older adults with diabetes mellitus. Interventions targeting these two perceptions have the potential to improve therapeutic success in this population.

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Corresponding Author:

Aliyah Nur Alfita

Program Studi Keperawatan, Fakultas Keperawatan, Universitas Padjadjaran

Jl. Raya Bandung-Sumedang Km 21, Gedung FKEP Universitas Padjadjaran Jatinangor

Email: aliyah22002@mail.unpad.ac.id

Introduction

Diabetes mellitus is a chronic metabolic disorder characterized by insulin deficiency or the body's inability to respond to insulin effectively, leading to hyperglycemia and subsequent multisystem complications (Smeltzer et al., 2019). As a prominent non-communicable disease (NCD), diabetes can result in severe health consequences if its management, particularly medication, is improper or inconsistent (Estiningsih et al., 2024). Within the geriatric population, diabetes frequently remains undiagnosed in its nascent stages, placing these individuals at a heightened risk for serious complications, including cardiovascular events, stroke, neuropathy, renal dysfunction, and vision impairment (Hossain et al., 2025). Consequently, for older adults, strict adherence to medication is a paramount factor in maintaining health and preserving their quality of life. However, adhering to complex treatment regimens presents considerable challenges, influenced by a variety of factors, chief among them being an individual's perception of their illness and treatment (de Oliveira et al., 2022). Indeed, these perceptions often act as the primary determinant of behavior, where negative beliefs or a lack of understanding can form a substantial barrier to medication adherence (Upamali & Rathnayake, 2023).

The scale of this public health challenge is staggering. According to the International Diabetes Federation (IDF) in 2021, an estimated 537 million people were living with diabetes globally, a figure projected to escalate to 643 million by 2030 and 783 million by 2045 (International Diabetes Federation, 2021). In Indonesia, the situation is similarly critical, with approximately 10.7 million individuals diagnosed with diabetes. A significant majority (73.7%) of this group comprises adults and older adults, ranking Indonesia seventh globally in terms of prevalence. Furthermore, data from the 2018 National Basic Health Survey (Riskesdas) identified diabetes mellitus as one of the top ten most common diseases among the elderly in Indonesia (Kemenkes RI, 2019).

Given this prevalence, medication adherence emerges as a critical factor for evaluation in achieving therapeutic goals for patients with diabetes. Yet, studies in Indonesia indicate that the proportion of patients non-adherent to oral diabetes medication ranges from 50% to 69.7% (Chairunisa et al., 2019). For older adults, consistent medication intake is vital for disease control and the prevention of serious complications (Yulia Rachmawati et al., 2024). This demographic often confronts unique challenges that can undermine adherence, such as cognitive impairments, adverse drug effects, and complex treatment schedules (Jaffer et al., 2023). It has been observed that patients who perceive a higher susceptibility to the disease and its complications tend to be more adherent, recognizing the profound benefits to their health. However, even when the benefits are understood, perceived barriers to treatment often impede consistent behavior (Husna et al., 2022). Furthermore, an individual's confidence in their own ability to manage the disease—their self-efficacy—plays a pivotal role in shaping their adherence behaviors (Wu et al., 2023).

To systematically understand these complex behavioral determinants, theoretical frameworks such as the Health Belief Model (HBM) are invaluable. Originally conceptualized by Janz & Becker in 1984, the HBM explains why individuals choose to engage—or not engage—in health-promoting behaviors (Chusniah Rachmawati, 2019). According to the HBM, an individual's perceptions regarding their disease and its treatment are key drivers of health-related actions, including medication adherence among older adults with diabetes (Yildirim, 2018). It is therefore essential to explore how the specific perceptions of elderly diabetic patients influence their level of adherence (Kim et al., 2021).

A positive association between a patient's perception of their illness and treatment and their medication adherence has been previously established (Maulidah et al., 2023). This academic finding aligns with preliminary observations conducted by the researcher in Kelurahan Babakan Sari. During these initial surveys, several older adults with diabetes exhibited non-adherence, expressing beliefs that they could control their condition without medication. Others felt the prescribed drugs offered no tangible benefits, with some even articulating a fear that frequent medication intake could worsen their overall health.

This identified research gap is further underscored by a review of existing literature. While the HBM has been widely applied in health behavior research, many studies explore only select components of the model rather

than integrating all its constructs-perceived susceptibility, severity, benefits, barriers, cues to action, and self-efficacy-within a single comprehensive analysis. Moreover, research on medication adherence in Type 2 diabetes has predominantly focused on the general adult population, with insufficient specific attention given to the geriatric cohort. This is a significant oversight, as older adults possess unique characteristics, such as potential cognitive decline, differing perceptions of treatment, and limitations in healthcare access, all of which can significantly influence their adherence patterns (Punnapurath et al., 2021).

In light of this background, this study was conceived to analyze the relationship between the perceptions of older adults with diabetes and their medication adherence. Specifically, it aims to investigate the association between *all* components of the Health Belief Model and adherence within the unique context of Kelurahan Babakan Sari, Kiaracondong, Bandung. By achieving a deeper understanding of these perceptions, this research seeks to generate valuable insights for designing more effective interventions to enhance treatment adherence among elderly patients with diabetes mellitus.

Methods

Study Design and Setting

This study employed a quantitative correlational design utilizing a cross-sectional approach to investigate the relationship between perceptions and medication adherence. The research was conducted in the sub-district of Kelurahan Babakan Sari, Bandung, Indonesia, over a period from November 20 to December 17, 2024.

Population and Sample

The target population for this study consisted of all older adults diagnosed with diabetes mellitus in Kelurahan Babakan Sari, totaling 177 individuals. From this population, a sample of 64 respondents was selected using a simple random sampling technique. The sample size of 64 was calculated using Slovin's formula with a 10% margin of error, which was considered appropriate for this exploratory correlational study. The sampling frame was a list of 177 eligible older adults with diabetes, which was provided by the Babakan Sari Community Health Center (Puskesmas) based on their routine monthly control visit records. The selection of respondents was also based on inclusion and exclusion criteria:

Inclusion criteria: (1) Aged 60 years or older; (2) Formal diagnosis of Type 2 Diabetes Mellitus for at least one year; (3) Registered at the Babakan Sari Community Health Center; (4) Able and willing to provide informed consent.

Exclusion criteria: (1) Diagnosed with cognitive impairment (e.g., dementia) that would prevent understanding of the questionnaire; (2) Severely ill or hospitalized during the data collection period; (3) Elderly individuals with other chronic diseases that could affect daily activities, such as stroke.

Instruments

Data were collected using two primary questionnaires:

- **Health Belief Model (HBM) Questionnaire:** This instrument was adapted from a previous study by Indana Firdausi Nuzula (2020) and was used to measure perceptions across the six core constructs of the Health Belief Model (HBM): perceived susceptibility, severity, benefits, barriers, self-efficacy, and cues to action. The questionnaire was re-evaluated through validity and reliability testing by the researcher. From an initial pool of 35 items, 11 were found to be invalid, resulting in a final instrument consisting of 24 valid items. The validity coefficients for the retained items ranged from 0.238 to 0.800. The instrument demonstrated strong internal consistency, with a Cronbach's Alpha coefficient of 0.867. For analytical purposes, respondents' overall perception was categorized as either positive (score $\geq$

mean) or negative (score < mean). All items in this questionnaire were rated using a 4-point Likert scale, ranging from 1 (strongly disagree) to 4 (strongly agree) for favorable statements, and scored in reverse for unfavorable statements.

- **Medication Adherence Questionnaire:** This questionnaire, comprising 34 items, was adapted from a previous study by Rr. Ovaria Trisnawati (2014) and was used to assess the level of medication adherence. The instrument was re-evaluated through validity and reliability testing by the researcher. An initial 35-item version was tested, with one item subsequently removed for being invalid. The validity coefficients for the final 34 items ranged from 0.359 to 0.838. The questionnaire exhibited excellent reliability, with a Cronbach's Alpha of 0.961. Adherence was categorized into two levels: adherent (score range: 52.6 - 140) and non-adherent (score range: 35 - 52.5). All items in this questionnaire were rated using a 4-point Likert scale, ranging from 1 (strongly disagree) to 4 (strongly agree) for favorable statements, and scored in reverse for unfavorable statements.

Data Collection Procedure

The data collection process commenced with providing a detailed explanation of the study to potential participants. Informed consent was obtained from each respondent, and from a family caregiver if present, to formalize their voluntary participation. Subsequently, the questionnaires were distributed. To accommodate respondents who had difficulty or were unable to read, assistance was provided. The items were read aloud either by a family member under the researcher's supervision or directly by the researcher, who then recorded the respondent's direct verbal answers.

Data Analysis

The collected data were analyzed using both univariate and bivariate statistical methods. Univariate analysis was conducted using frequency distributions to describe the demographic and key characteristics of the sample. To test the hypothesis regarding the relationship between variables, bivariate analysis was performed using the Spearman Rank correlation test. Statistical significance was set at an alpha level of $p < 0.05$. All statistical analyses were performed using SPSS for Windows, Version 27.0 (IBM Corp., Armonk, NY, USA).

Ethical Considerations

This research was conducted in strict adherence to ethical principles. Formal ethical approval was secured from the Ethics Committee of Universitas Padjadjaran, under approval number 1064/UN6.KEP/EC/2024.

Results

This section presents the findings, beginning with the demographic characteristics of the 64 respondents, as detailed in Table 1.

Table 1. Frequency distribution of the characteristics of elderly DM respondents in Kelurahan Babakan Sari (n=64).

Characteristic	f	%
Gender		
Female	46	71.9
Male	18	28.1
Age		
60-69 Years	48	75
70-90 Years	16	25
Education Level		
Elementary School	29	45.3
Junior High School	15	23.4
Senior High School	17	26.6
Higher Education	3	4.7
Diabetes Duration		
≤ 5 Years	37	57.8
> 5 Years	27	42.2

In this study, the majority of elderly respondents in Kelurahan Babakan Sari were female (71.9%), and most were aged 60-69 years (75%). Based on their educational level, most respondents had only completed elementary school (45.3%), and the duration of DM for the majority of the elderly was ≤ 5 years (57.8%).

Table 2. Frequency distribution of respondents based on the Health Belief Model Perception of elderly DM patients in Kelurahan Babakan Sari (n=64).

Health Belief Model Perception	Frequency (f)	Percentage (%)
Negative	24	37.5
Positive	40	62.5

In this study, it was found that the majority of elderly respondents had a positive perception, with as many as 40 people (62.5%).

Table 3. Descriptive statistics of Health Belief Model Perception and Medication Adherence in elderly DM patients in Kelurahan Babakan Sari (n=64).

Variabel	Mean	SD	Min	Max	Range
Health Belief Model Perception	66.80	6.402	45	77	32
Medication Adherence	103.86	12.758	66	136	70

Based on the descriptive analysis, the average score for the respondents' Health Belief Model perception was 66.80 (SD = 6.402; range 45-77), while the average score for medication adherence was 103.86 (SD = 12.758; range 66-136).

Table 4. The relationship between Health Belief Model Perception and Medication Adherence in elderly DM patients in Kelurahan Babakan Sari (n=64).

Variabel	r	p-value
Health Belief Model Perception vs Medication Adherence	0.716	<.001

This study used the Spearman Rank correlation test, and a p-value $< \alpha$, which is $<.001$, was obtained, indicating that the null hypothesis (H_0) was rejected. This means that there is a significant relationship between an individual's perception within the Health Belief Model framework and their level of medication adherence. The correlation coefficient of 0.716 reflects a strong and positive relationship; the higher a person's perception of the HBM aspects, the greater the likelihood that they will adhere to the recommended treatment.

Table 5. The relationship between the components of the Health Belief Model and Medication Adherence in elderly DM patients in Kelurahan Babakan Sari (n=64).

Perception	Medication Adherence	
	R	P
Perceived Vulnerability	0.343	0.005
Perceived Severity	0.379	0.002
Perceived Benefits	0.559	<.001
Perceived Barriers	0.723	<.001
Cues To Action	0.223	0.077
Self-Efficacy	0.551	<.001

As shown in Table 5, perceived barriers demonstrated the strongest correlation with medication adherence, while five of the six Health Belief Model (HBM) components showed statistically significant relationships. The analysis revealed significant positive correlations between medication adherence and perceived vulnerability ($r_s = 0.343$, $p = 0.005$), perceived severity ($r_s = 0.379$, $p = 0.002$), perceived benefits ($r_s = 0.559$, $p <.001$), perceived barriers ($r_s = 0.723$, $p <.001$), and self-efficacy ($r_s = 0.551$, $p <.001$). In contrast, cues to action ($r_s = 0.223$, $p = 0.077$) did not show a statistically significant association with medication adherence.

Discussion

The data obtained indicate that the majority of elderly respondents were female, accounting for 71.9% of the sample. Gender is a significant factor influencing the incidence of diabetes mellitus, with women generally having a higher risk than men. This aligns with research conducted by Samapati (2023), which found that female gender is associated with a higher risk of developing DM in the elderly (Samapati et al., 2023). One of the factors contributing to the difference in diabetes risk between men and women is lifestyle, which affects cholesterol levels and body fat percentage. Women typically have a body fat percentage of about 20–25% of their body weight, higher than men, who have around 15–20%. Due to this greater proportion of body fat, women's risk of developing diabetes can be three to seven times higher, whereas for men, it is approximately two to three times higher (Imelda, 2019).

In terms of age, the majority of respondents in this study were between 60 and 69 years old (75%). The elderly are more susceptible to diabetes mellitus because aging leads to a decline in the capacity and function of bodily organs. Body cells become less receptive to insulin, resulting in a decreased ability to metabolize blood glucose as age increases. Consequently, the blood glucose control system does not function properly, leading to an elevation of blood glucose above normal limits (Bellary et al., 2021). This is consistent with research by Ningsih

(2022), which identified the 60–69 age group as the dominant cohort of DM sufferers among the elderly (Ningsih et al., 2022).

The educational level of the respondents was predominantly primary school (SD), with 29 individuals (45.3%) having completed this level. This reflects the situation in the field, where the majority of elderly DM patients in Kelurahan Babakan Sari have a primary school education. Many DM patients in the area did not complete junior high school (SMP). Previous research by Raghupathi concluded that individuals with higher levels of education tend to have better health conditions and life expectancy compared to those with lower education. Higher education contributes to reducing the risk of premature death and improving quality of life by increasing awareness of the importance of health and facilitating access to healthcare services (Raghupathi & Raghupathi, 2020). The duration of DM for the majority of respondents was ≤ 5 years (57.8%). Individuals who have had DM for a long time often have a better understanding of their health condition and are aware of the risks associated with the disease. A person who has had DM for a long time has better experience in managing the problems that arise with the disease (Efriliana et al., 2018).

The Health Belief Model perception among elderly DM respondents in Kelurahan Babakan Sari was predominantly positive, with 40 individuals (62.5%) holding this view. The overall mean score for HBM perception was 66.80, which means that the majority of respondents had a perception score ≥ 66.80 , indicating a positive HBM perception. The overall mean score for medication adherence was 103.86, which falls within the score range of 52.6–140, indicating an adherent level of medication adherence. All 64 respondents, including those with negative perceptions, were found to be adherent. This is in line with research by Andraini (2022), which suggests that even if a person has a negative perception, it does not significantly affect adherence. Thus, a person can remain adherent despite having a negative perception. Although all were adherent, there was a difference in the level of medication adherence between the elderly with positive and negative perceptions. Those with positive perceptions tended to have a higher number of adherent respondents than those with negative perceptions.

Based on findings during the research process in Kelurahan Babakan Sari, there is a monthly *Posbindu* program that includes routine blood pressure and blood sugar checks, as well as health consultations with healthcare professionals from the *Puskesmas*. During these activities, patients are always reminded by healthcare professionals to take their medication regularly. For patients who are absent, the *Puskesmas* can identify them through the data of DM patients who participate in the *Posbindu* program each month. Healthcare professionals then request the help of local cadres to conduct home visits to monitor the absent patients, including reminding them to take their medication regularly. This rigorous follow-up system resulted in all respondents in this study demonstrating a high level of medication adherence, even those with negative perceptions of the treatment. This means that social support from healthcare professionals and cadres, which is an external factor, can compensate for or even override internal factors such as negative perceptions, which in this case also play an important role in increasing patient adherence. This is consistent with research by Yüce (2025), which states that social support from family, friends, healthcare professionals, and the surrounding environment plays an important role in increasing medication adherence in patients with type 2 diabetes mellitus (Erdoğan Yüce & Yıldırım, 2025).

The research results show that perceived susceptibility, as an initial part of the Health Belief Model, is significantly related to medication adherence, with a correlation value (r) of 0.343 and a p -value of 0.005. This finding is in line with research by Fitriyani (2023), which stated a relationship between perceived susceptibility to disease and adherence to medication. A person who feels vulnerable to a disease will be more vigilant and fearful, which will help them find solutions to overcome and survive the situation. A person must believe they are susceptible to a disease to take action to treat and avoid it (Stangier et al., 2021). Because they are aware of the potential major consequences if they do not follow their treatment regimen, the elderly who consider themselves more susceptible to diabetes mellitus are more likely to be adherent to their medication.

The respondents' perception of the severity of the disease in this study showed a significant relationship with medication adherence, with a correlation value (r) of 0.379 and a p -value $< \alpha$ of 0.002. Based on the results of

the questionnaire, the majority of respondents who had an understanding and belief that negligence in treatment would have a negative impact on their health condition showed a positive perception and tended to be adherent in taking their medication. This finding is in line with research by Fitriyani (2023), who also found a significant relationship between perceived severity of the disease and treatment adherence. The perception that DM is a serious disease with the possibility of severe complications, as suggested by Pezeshki (2022), can increase patients' motivation to adhere to treatment in order to avoid more severe health impacts.

The perceived benefits felt by the respondents in this study have a significant relationship with the level of medication adherence, with a correlation coefficient (r) of 0.559 and a p -value $< \alpha$ of $< .001$. Based on the results of the questionnaire, the majority of respondents who had an understanding and belief that by adhering to the treatment as prescribed, they could help stabilize their blood sugar levels, and with this understanding and belief, the respondents became adherent in taking their medication because they felt the real benefits of the treatment. This finding is in line with research by Suhat (2022), who also found a significant relationship between perceived benefits and treatment adherence, with a p -value $< \alpha$ of < 0.001 (Suhat et al., 2022). Patients who believe they will benefit from treatment tend to be more adherent in taking their medication (Jiang et al., 2024). Conversely, individuals who are not sure that the treatment will bring benefits are more likely to be non-adherent.

The perceived barriers experienced by the respondents in this study were found to have a significant relationship with medication adherence, with a correlation coefficient of 0.723 and a p -value $< \alpha$ of $< .001$. This finding is supported by the results of research by Apsari (2024), which showed a relationship between perceived barriers and treatment adherence in patients with diabetes mellitus. The research also revealed that individuals with negative perceptions of barriers showed lower adherence compared to those with positive perceptions of barriers (Apsari & Ratu Ayu Dewi Sartika, 2024). The perceived barriers component has become the strongest predictor influencing medication adherence, as seen from its highest correlation coefficient compared to other HBM components. Based on the results of the questionnaire, the most prominent specific barrier experienced by the respondents was a lack of family support in monitoring treatment. This condition occurred because the respondents lived alone or had family who were less concerned about their treatment process. This is in line with research by Wikan (2021), who stated that perceived barriers that can occur in the elderly include several factors, such as drug side effects, complexity of the treatment regimen, physical and cognitive conditions, as well as social factors and family support. The elderly who feel that there are many barriers to adhering to their medication schedule are more likely to be non-adherent (Wikan et al., 2021).

A person can be motivated to adopt healthy behaviors due to internal influences or influences from their surrounding environment (external). This motivation is known as a cue to act, which triggers a person to take treatment action. These factors include family support, the provision of health services by healthcare professionals, and mass media that can help provide information about the disease (Pratama & Savira, 2022). However, the results of this study indicate that the cues to action component had no significant relationship with medication adherence, with a correlation value (r) of 0.223 and a p -value of 0.077 ($p > 0.05$). This finding is consistent with the study conducted by Andraini (2022), which also reported that the cues to action component was not significantly associated with the level of medication adherence. This suggests that although patients may receive external encouragement such as family support, healthcare provider assistance, or information from the media, these external factors alone are not strong enough to influence their adherence behavior (Andraini et al., 2022).

The self-efficacy component in this treatment showed a significant correlation with medication adherence, with a coefficient (r) of 0.551 and a p -value $< \alpha$ of $< .001$. This is in line with research by Adira (2024), who also found a statistically significant relationship between an individual's self-efficacy and medication adherence, with a p -value $< \alpha$ of 0.027. This means that when a person has high confidence in their ability to carry out the treatment, their level of medication adherence also increases (Fahamsya et al., 2022).

Statistical analysis shows that there is a strong positive correlation between an individual's perception based on the Health Belief Model (HBM) and adherence to medication, indicated by a p-value of $<.001$ and a correlation coefficient (r) of 0.716. This finding supports the results of research by Maulidah (2023) conducted in Probolinggo, which also revealed a very significant relationship with a p-value of 0.000 and a correlation coefficient (r) of 0.939 between HBM perception and treatment adherence in patients with type II diabetes. The conclusion from this result is that a higher perception of the disease is closely related to an increase in treatment adherence, especially in the elderly with diabetes. This research makes a significant contribution to the development of health behavior science by revealing that the elderly's perception of the disease and treatment, analyzed through the Health Belief Model approach, has a major influence on their medication adherence. The findings of this study can be implemented in healthcare practice through the development of more personalized educational programs, as well as by encouraging the active involvement of healthcare professionals and family members in shaping a positive view of the elderly towards the treatment of diabetes mellitus.

Research Limitations

The researchers acknowledge several limitations in this study. First, due to the constraints of time and resources, the sample size of 64 respondents, despite being selected through Simple Random Sampling with a 10% margin of error, may not be sufficient to fully capture all aspects of the target population. Furthermore, the measurement of adherence relied on a self-report methodology, which is susceptible to both recall bias, where participants may not accurately remember their past behavior, and social desirability bias, reflecting a tendency to provide answers perceived as more favorable. Additionally, the cross-sectional nature of the research design can only establish an association or correlation between variables; it cannot be used to infer a cause-and-effect relationship. A longitudinal study would be required to determine the influence of perception on adherence over time. Finally, this research was conducted within a single urban sub-district, and consequently, the findings may have limited generalizability to populations in other urban or rural settings across Indonesia.

Conclusion

This study on older adults with diabetes mellitus demonstrates that medication adherence has a significant association with perceptions based on the Health Belief Model. The two most influential and critical components in assessing treatment adherence in this population are perceived barriers and perceived benefits. However, one of the HBM components cues to action showed no significant relationship with medication adherence. Based on the findings of this research, it is recommended that future studies employ a qualitative methodology to further investigate the additional factors influencing the negative perceptions of older adults, particularly concerning the component of perceived barriers. Furthermore, future research should also explore why the cues to action component did not significantly affect medication adherence and examine whether other factors beyond external influences may contribute to individuals' adherence levels. In addition, to enhance statistical power and enable a more comprehensive data analysis, subsequent research should be conducted with a larger sample size.

Conflict of Interest

The author declares no conflict of interest in this research.

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Author Contributions

Aliyah Nur Alfita: Conceptualization, Methodology, Formal Analysis, Investigation, Validation, Data Curation, Writing-Original Draft, and writing-Review & Editing. **Neti Juniarti:** Supervision, Funding Acquisition, Resources, and Validation. **Citra Windani Mambang Sari:** Supervision and Resources.

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