

Factors Affecting Medication Adherence in Hypertension Patients: A Literature Review

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Factors Affecting Medication Adherence in Hypertension Patients: A Literature Review

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Abstract

BACKGROUND OF THE STUDY: Controlling blood pressure carried out by hypertensive patients is still less than 50%. It is related to the consumption of antihypertensive drugs. Adherence to medication is a critical factor in achieving blood pressure for resistant hypertension, but lifestyle modifications may be necessary to treat milder forms of hypertension. There are several factors that affect the anti-hypertensive medication adherence needs to be known.

AIM OF THE STUDY: This study aims to analyze the findings regarding the factors that influence medication adherence in Hypertension sufferers.

METHODOLOGY: A literature review is done by looking for literature related to the theme taken. The databases used in the preparation of literature reviews are obtained from databases such as ProQuest, PubMed, EBSCO, and Google scholar. Search focuses on titles, keywords and articles that are appropriate in journals that have been determined from 2011-2021. Keywords used in the search for factor articles, adherence to taking medication and hypertension. The search results found 6 articles that had been selected based on predetermined inclusion and exclusion criteria.

RESULTS: According to the review results, drug compliance plays an essential role in the long-term treatment of hypertension and can reduce the risk of complications. The finding of 11 factors influences medication adherence to Hypertension sufferers, including the level of knowledge, the role of health workers, motivation, family-friends support, attendance at the clinic, age, employment status, education level, belief, gender, and duration of suffering from Hypertension.

CONCLUSION: Adherence to taking medication was measured by taking antihypertensive drugs in individuals, dietary behaviour, exercise, participation in posbindu/prolanis, and visits to health services for routine control. Compliance with drug use plays a vital role in the long-term treatment of hypertension to reduce the risk of complications. The findings of 11 factors that influence medication adherence in patients with hypertension can be used as benchmarks for nurses to improve health services further to achieve optimal recovery.

Keywords: Factors, level of medication adherence, Hypertension sufferers

Introduction

The world is aging rapidly; the proportion of elderly aged 60 years and over has doubled from 11% in 2011 to 22% in 2050. The world's elderly population, which in 2011 was around 650 million, will reach 2 billion by 2050 [1]. For the first time in human history, there will be more parents than children aged 0-14 years in the population. Developing countries will experience an aging rate that is much faster than developed countries [1].

Indonesia is a country that is entering an era of elderly population structure because it has a

population of around 60 years and around 7,18%. The increase in the number of older people is due, among others, to the increase in the socio-economic level of the community, progress in the field of health services. The increase in the level of public knowledge Indonesia's elderly population in 2011 has reached 19 million with a Life Expectancy Rate of 66,2 years. The number of older people was estimated to reach 28,8 million or 11,34 percent) with a Life Expectancy Rate of 71,1 years of the total population in Indonesia [2]. According to the Central Java health office in 2018, it shows that Hypertension still occupies the most significant proportion of all reported non-communicable

diseases, namely 57,10%. Recapitulation of case reports of Hypertension in the city of Semarang in 2019 found 163680 cases which are diseases that are the top priority for hospitals and health centers [6].

Hypertension is a condition of increased pressure in the blood vessels that occurs continuously. Hypertension is the silent killer because it often causes no symptoms [3]. People often mention that Hypertension is an incurable disease. They have to control Hypertension to prevent complications that can lead to death [4]. Hypertension is a significant public health problem worldwide due to its high prevalence of vascular disease, premature death, stroke, kidney disease, and retinopathy. It is the most critical risk factor for cardiovascular disease, which kills about 12 million each year worldwide, more than any other disease. With the increasing problem of Hypertension worldwide, there is concern that Hypertension in the elderly may also increase and nurses cannot detect cases due to preliminary screening in the elderly group [1].

According to the World Health Organization (WHO), in 2018, it is estimated that 1 billion people worldwide suffer from Hypertension with a prevalence of 26,4%. The 2018 Basic Health Research organized by the Ministry of Health stated that the prevalence of Hypertension in Indonesia was 34,1% higher than in 2013, which was 25,8% [5]. The prevalence of Hypertension for age 18 years and over in Central Java is 37,57%. Meanwhile, Hypertension in the city of Semarang is a disease that is a top priority for hospitals and health centers [6]. In Indonesia, blood pressure control performed by hypertensive patients is <50%. [7] It is related to the consumption of antihypertensive drugs. Medication adherence is a critical factor in achieving blood pressure for resistant Hypertension, but lifestyle modifications may be needed to treat milder forms of Hypertension [8].

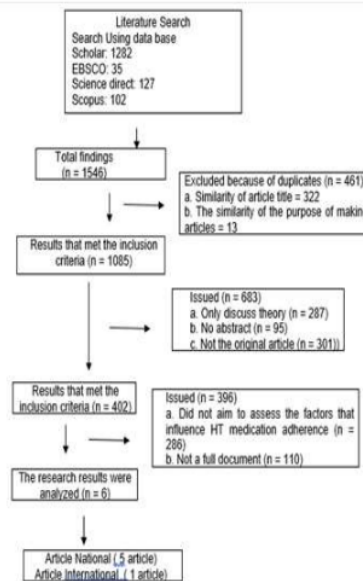
In Indonesia, blood pressure control performed by hypertensive patients is less than 50%. This is related to the consumption of antihypertensive drugs. Medication adherence is a critical factor in achieving blood pressure for resistant Hypertension but lifestyle modifications may be needed to treat milder forms of Hypertension. Various research results explain that many factors influence non-adherence to take antihypertensive drugs, including lack of understanding of treatment, less affordable drug prices, local beliefs and culture, the emergence of adverse effects of drug use, use of complementary drugs, and access to health services and factors such as level of education, length of suffering hypertension, family support, the role of health workers, and motivation. [9], [10], [11], [12], [13].

Various problems related to the factors that affect compliance with taking Hypertension medication, among some of them consuming antihypertensive drugs and some not finishing them, are because they do not have money for treatment and think that the disease is mild does not need to be checked regularly. Based on the above findings, the researcher is interested in conducting a literature review analysis of the factors that influence drinking adherence in patients with Hypertension.

Methods

The method in this study is a literature review. The researcher analyzed the factors that influence drinking compliance in Hypertension sufferers. The databases used to prepare literature reviews are obtained from ProQuest, PubMed, EBSCO, Google scholar. The search focuses on titles, keywords, and articles appropriate in journals determined from 2011-2021.

Keywords used in the search for factor articles consist of adherence to taking medication and Hypertension. The search results found six papers that have been selected based on predetermined inclusion and exclusion criteria.



Picture 1.
Study Selection Flowchart

Results

Characteristics of the Study

A total of 6 studies were included in this review. All of them used a cross sectional design. Six studies mentioned that the sampling methods used were as follows: two studies used the simple random sampling [14], [17]; one study used a consecutive sampling technique [15]; one study used an accidental sampling technique [16]; two studies used a total sampling [7], [18]. Five studies were conducted in Indonesia [14], [7], [18], [16], [17]. One study was conducted in Nigeria [15].

Description of medication adherence to Hypertension

The results of research conducted by [14] show that respondents who are in the variety of not adhering to treatment are 61% (61 respondents) and respondents who are in the category of adhering to treatment are 39% (39 respondents). The results of research conducted by [16] show that it appears that out of 38 hypertensive patients, there are 11 people (28, 9%) with low adherence, 13 people (34,2%) with moderate adherence and 14 people (36,8%) with high adherence. The results of research conducted by [7] show that most of the respondents have a high level of adherence to taking antihypertensive drugs (51,4%). In addition, the research results conducted by [17] that as many as 40 respondents were less obedient (44,4%), while as many as 50 respondents were obedient (55,6%). In contrast, the description of the research results conducted [18] found treatment compliance the most high adherence, namely 21 people (65,6%). Poor adherence or incomplete therapy are factors that contribute to individual resistance [18].

Factors that influence medication adherence with Hypertension

Knowledge Level

The results of knowledge level that research conducted by [14] shows that the factors that influence medication adherence with Hypertension, namely, of the 63 respondents who had a low level of knowledge, 96,8% (61 respondents) did not comply with Hypertension treatment and 3,2% (2 respondents) complied with Hypertension treatment. Meanwhile, of the 37 respondents who had a high level of knowledge, all of them were obedient in undergoing Hypertension treatment. Chi-Square test results obtained P-value 0,000 ($P < 0,05$). It shows that relationship between the level of knowledge about Hypertension with patient adherence in undergoing treatment. This knowledge is the result of knowing a person about an object through his senses.

The better the respondent's knowledge of Hypertension, the better the awareness to seek treatment at health services. The results of research conducted by [7] that the level of knowledge about

taking antihypertensive drugs consisted of a poor category (37,2%) and a suitable category (62,8%). Research conducted by [17] revealed a relationship between respondents' knowledge and adherence to Hypertension therapy ($p = 0.005$). Respondents with good knowledge, there were 70,2% who were in the obedient category. While respondents with imperfect knowledge, 39,5% were in the obedient category. Research conducted by [18] found that the results of the chi-square statistical test between knowledge and adherence to treatment of hypertensive patients at the Ranotana Weru Community Health Center. The most knowledgeable result was sufficient with high adherence, namely 12 respondents (37,5%), and the least knowledgeable was good with low adherence, namely 0 respondents (0,0 %). In the Chi-square statistical test, the value of p is smaller than α ($p = 0,008 < \alpha = 0,05$), so H_0 is rejected, and H_a is accepted, or there is a significant relationship between knowledge and treatment compliance in hypertensive patients at Ranotana Weru Health Center [18]. It is in line with research showing a relationship between knowledge and adherence to diet ($p = 0,026$) [22].

The role of health workers

Factors that influence

medication adherence with Hypertension are 41 respondents who stated that all health workers played a low role as non-compliant in undergoing Hypertension treatment. Meanwhile, of the 59 respondents who stated that the role of health workers was high, 33,9% (20 respondents) did not comply with Hypertension treatment, and 66,1% (39 respondents) obeyed in undergoing Hypertension treatment. Chi-Square test results obtained P-value 0,000 ($P < 0,05$). It shows a relationship between the role of health workers and patient compliance is undergoing treatment. Research conducted by [7] that the role of health workers in the low category was 48,6%, and the high category was 51,4%. The role of officers in adherence to taking antihypertensive drugs in patients is powerful. The role of officers is implemented in providing information that is easily accepted to patients about their illness, providing support to patients to recover, and interpersonal communication to produce good service behavior. The results showed that 41,2% of patients received information about their health for more than one month. In health communication, it is not sufficient to define recommended behaviors as healthy behaviors that save lives. However, evidence is needed to produce permanent behavior [23].

Patient motivation

The research results conducted by [17] show a relationship between respondents' motivation and adherence to Hypertension therapy ($p = 0,04$). Respondents with good motivation,

there were 66,7% who were in the obedient category. While respondents with poor motivation, there were 42,9% were in the obedient category. It is in line with research showing that motivation is related to patient treatment adherence ($p = 0,000$) [27]. Research conducted by [18] found that the results of the Chi-square statistical test between motivation and compliance with Hypertension patients at the Ranotana Weru Community Health Center. The best motivation with high adherence was 12 respondents (37,5%) and the least motivation was lacking with high adherence, namely 0 respondents (0,0%). In the chi-square statistical test, the value of p is smaller than α ($p = 0,011 < \alpha = 0,05$), so H_0 is rejected, and H_a is accepted, or there is a significant relationship between motivation and treatment compliance in hypertensive patients at Ranotana Weru Health Center. [18].

Support of family members and friends

Factors related to adherence to taking Hypertension medication, namely the existence of social support from family members or friends related to treatment in patients with Hypertension by helping to remind families who suffer from Hypertension to be obedient in taking the drug. Treatment adherence with antihypertensive drugs remains suboptimal in the Nigerian community [15]. Research conducted by [17] shows a relationship between the respondent's family support and adherence to Hypertension therapy ($p = 0,006$). Respondents with good family support, there were 66,7% who were in the obedient category. While respondents with low-income family support, there were 33,3% who were in the obedient category. It is in line with research showing that family support is associated with patient treatment adherence ($p = 0,000$) [29]. Following the research results from [18] found the results of the chi-square statistical test between family support and adherence to treatment of hypertensive patients at Ranotana Weru Health Center. The result found that the highest support with high adherence was 19 respondents (59,4%) and the least support was low with high adherence, namely two respondents (6,3%). In the Chi-square statistical test, the value of p is smaller than α ($p = 0,001 < \alpha = 0,05$), so H_0 is rejected, and H_a is accepted, or there is a significant relationship between family support and treatment compliance in hypertensive patients at the Ranotana Weru Health Center. [18].

Attendance at the Clinic

Based on the research results conducted by [15], there is a relationship between adherence to taking Hypertension medication between patients with the level of attendance at the clinic with a p -value of 0,001. Based on the research results on the

effect of attendance on group educational activities blood pressure control for the variable age, the value of $p = 0,428$ ($p \geq 0,05$). Whereas in the presence variable where the value of $p = 0,001$ ($p \leq 0,05$), the presence of participants at the clinic during group education by following eight complete modules affects blood pressure control. Prolanis participants at group education and following eight complete modules for eight consecutive months make the Hypertension prolanis participants get information about diseases and pharmacological and non-pharmacological management. Participants' knowledge about controlling blood pressure will increase [15].

Age

The research results conducted by [7] indicate that the age of the respondents consisted of > 60 years of 59,5% and ≤ 60 years of 40,6%.

Job Status

Based on the results of research conducted by showing [16] that there are 17 people (44,7%) working and 21 people (55,3%) not working.

Level of education

The research results conducted by [17] show a relationship between the respondent's education level and adherence to Hypertension therapy ($p = 0,005$). Of the respondents with a low level of education, 38,5% were in the obedient category.

Patient Confidence

The research results conducted by [17] show a relationship between respondents' beliefs and adherence to Hypertension therapy ($p = 0,017$). Respondents with a reasonable belief, there were 66,7% who were in the obedient category.

Gender

The results showed that between sex and adherence to Hypertension sufferers who underwent treatment, out of 14 men, there were eight people with low adherence, two people with moderate adherence, and four people with high adherence. Of the 24 women, there were three people with low adherence, 11 people with moderate adherence and ten people with high adherence. The results of the Chi-Square (Pearson Chi-Square) statistical test showed that the value of $\chi^2 = 9,072$ with $p = 0,011 < \alpha$ (0,05) means that it is significant, so H_0 is rejected, H_a is accepted. So, there is a significant relationship between gender and compliance with Hypertension sufferers undergoing treatment at Karang Dapo, Muratara

Regency Public Health Center. The results of the Contingency Coefficient (C) test obtained the value of $C = 0,439$ with $p = 0,011$ [16].

Long time suffering from Hypertension

Based on the results of research conducted by showing [16], There were 15 people (39,5%) who had Hypertension > 5 years old, and 23 people (60,5%) had Hypertension ≤ 5 years old. Based on the cross-tabulation between long-suffering from Hypertension and compliance with Hypertension sufferers undergoing treatment, it appears that of 15 people suffering from Hypertension > 5 years, there are eight people with low adherence and four people with moderate adherence.

Discussion

Adherence to taking medication was measured by taking antihypertensive drugs in individuals, diet behavior, exercise, participation in posbindu / prolanis, and visits to health services for routine control. According to doctor's recommendations, consumption of antihypertensive drugs, which depends on the level of Hypertension so that the dose, type of drug, and the frequency of having to take medication in a day will be different [7]. The regularity of patients taking medication every day shows that there are still patients who regularly take medicines following doctor's recommendations even though they do not understand the condition of the disease. Still, they trust medical personnel [19]. Patient non-compliance can be seen from the behavior of respondents who prefer pharmacies as a place to buy medicines because it is more practical to see the reasons for forgetting to take medicine, one of which is because they are busy working so they do not have time to take medicines and routine control [20]. Non-compliance behavior can also be assessed through the diet and exercise behavior of the respondents. It is known that most respondents do not limit oily foods. In addition, some of them do not regularly exercise every day. Disobedient behavior is formed because no one has been reminded of the importance of maintaining a diet and exercise [8]. The decision to comply and not comply completely rests with the patient. The surrounding environment, such as health workers, families, and access to positive health services, only encourages behavior. The changing condition in this patient reflects the patient's lack of personal awareness to carry out medical advice. There are times when sufferers feel pain symptoms, so they feel vulnerable, but at certain times sufferers do not feel vulnerable [21]. In other conditions, for example, the patient feels susceptible. Still, he does not think that the state of the disease must be taken seriously when his daily activities hinder it. When you feel dizzy, and your blood pressure rises through the

measurement, the patient will take antihypertensive drugs [20].

The level of knowledge is one of the factors that can affect a person's adherence to treatment. By having sufficient knowledge about the disease, a person will be motivated to comply with their treatment. A solid intention to take medication adherence behavior in patients requires knowledge followed by skills [23]. Patient knowledge about the disease, management, and drug therapy is essential for forming an adherence measure. The knowledge that hypertensive patients must possess includes the meaning of Hypertension, the causes of Hypertension and the importance of taking regular medication and knowing the dangers posed by not taking medication. Adherence in consumption is essential to control blood pressure and prevent complications [24]. Knowledge from all aspects together will affect the level of treatment adherence. If the respondent's knowledge about the disease control is improved together with the antihypertensive drugs knowledge, the adherence to taking the antihypertensive drug will increase [25]. However, based on the results of univariate analysis, it shows that the respondent's knowledge is not good; one of them is because the respondent does not know the definition of Hypertension. The definition of Hypertension will be related to complications of the disease if it is not treated immediately. With inadequate knowledge about Hypertension, finally, the respondents do not feel vulnerable; they do not know if death is a severe threat if the patient feels complications of the disease [23]. Hypertension is the silent killer because it is a deadly one without the victim's first symptoms [25]. Patient knowledge will enable the expected adherence behavior also to be increased [19]. There is a lack of knowledge regarding Hypertension control in patients due to a lack of understanding of lifestyle modifications to stabilize blood pressure and a lack of understanding of good frequency in measuring blood pressure for Hypertension sufferers [23].

The lack of respondents understanding the explanations from health workers illustrates that the information presented is less attractive. Information can be presented in writing or visually [26]. The large number of elderly respondents who do not receive assistance from their families during counseling allows health workers to provide written information that family members can later read. The family is the smallest unit of society. So that to achieve healthy behavior in society, it must be started in each family structure. The family should provide both material and moral support in the health effort of their family members. Support provided is a construction that describes the structure of a person's social environment and the tangible, instrumental, and emotional resources that the social environment provides [26].

The high motivation of clients with Hypertension to get healing; means that there is a desire from within the patient to undergo treatment. The results of this study are in line with research on factors related to medication adherence in hypertensive patients in the Kedungmundu Public Health Center Semarang City. It found that based on the results of the Chi-Square statistical test, there was a relationship between motivation to seek treatment and medication adherence [28].

Family social support is essential in increasing and encouraging patients if Hypertension becomes severe. Social support from families in the form of emotional support is expected to help reduce anxiety caused by complications of Hypertension. It is necessary to increase positive family social support, be it emotional, instrumental, informational, or rewarding support. The results of this study are in line with research that examines the factors associated with Hypertension sufferers' adherence to treatment; the results show a relationship between family support and adherence to Hypertension treatment [12].

Prolanis participants at group education and following eight complete modules for eight consecutive months make the Hypertension Prolanis participants get information about diseases and pharmacological and non-pharmacological management, so that participants' knowledge about controlling blood pressure will increase [15]. It follows the research with the results that there is an effect of group education on blood pressure control among the members of the Primary Clinic Prolanis Club as indicated by the p-value of 0,001. Based on data analysis and discussion of research results regarding the effect of group education on blood pressure control among members of the Prolanis Primary Clinic Vita Medika Banjar club with 211 respondents, it can be concluded that the presence of participants in group education activities has an effect on blood pressure control based on $p \leq 0,05$. ; Characteristics of age, gender, education <SMP did not affect blood pressure control based on p value $\geq 0,05$ [30].

Increasing age affects the elasticity of the blood vessel walls; there is a thickening of the blood vessel walls and eventually narrows and becomes stiff. Blood pressure will increase when the flexibility of the blood vessels decreases [31]. While the facts in the field when researching patients less than 45 years of age already have Hypertension. Researchers assume that age is a strong unmodifiable risk factor and that older people have a higher risk of developing Hypertension due to decreased physiological function. Not only age factors can affect the occurrence of Hypertension, unhealthy lifestyles such as smoking, drinking coffee, eating foods that are too salty and contain high fat, and rarely exercise are also triggers for Hypertension. So that a healthy lifestyle also really needs to be considered to prevent Hypertension

[32]. Researchers suggest to the public that they can have their blood pressure checked as early as possible even though they are still young so that those who are still pre-hypertensive do not become hypertensive, or those who are already hypertensive do not immediately lead to complications by taking drugs regularly and in a controlled manner. [33].

Job status shows that respondents who work have lower compliance, this is because respondents who work have less time to pay attention to their health conditions because they are busy working. However, even though the respondent does not work and has more free time, it may be less adherent to undergo treatment if the respondent does not have a companion or family who reminds the respondent to comply with the treatment [16]. It is in line with the study results, which showed that of the total respondents, 38,1% of people did not work and had high medication adherence. This is because respondents who do not work have more time at home than those who work to adjust the time to take medicine [34]. The Chi-Square (Pearson Chi-Square) statistical test results showed a significant relationship between job status and compliance with Hypertension sufferers undergoing treatment at Karang Dapo, Puratara Regency Public Health Center. The results showed that respondents who did not work tended to be more obedient to treatment than those who worked. People who work are busier, so they do not have much time to go to the Public Health Center. Respondents who work also take medication that is not according to doctor's recommendations due to the density of activities carried out every day to forget to take medication [16].

The level of education of respondents with a higher education level was in the obedient category. This is in line with research that shows a relationship between education level and medication adherence ($p = 0,000$)[35].

The patient confidence of respondents with good belief, there were 66,7% who were in the obedient category. Meanwhile, there were 38,9% of respondents with flawed beliefs were in the obedient category. This is in line with research that shows treatment adherence is influenced by belief [36].

Gender in this research shows that most of the respondents who experience Hypertension are women. It is because the majority of hypertensive patients are > 50 years old. Most women have experienced menopause which causes hormonal changes and triggers an increase in blood pressure [37], following the research, which states that the number of Hypertension sufferers in women is greater than that of men. It is because women experience menopause. There are hormonal changes, namely a decrease in the ratio of estrogen

and androgens, which causes an increase in the release of renin, which can lead to an increase in blood pressure [38].

Based on the cross-tabulation between long-suffering from Hypertension and compliance with Hypertension sufferers undergoing treatment, it appears that of 15 people suffering from Hypertension > 5 years, there are eight people with low adherence and four people with moderate adherence. This condition indicates that respondents who have Hypertension > 5 years have experienced saturation to make respondents lazy and neglectful of taking medication. Of the 15 people suffering from Hypertension > 5 years there are 3 people with high adherence. In patients with Hypertension > 5 years, it is possible to remain adherent to treatment because the respondent has a good motivation and is accompanied by family support who constantly reminds him to take medicine. There is good knowing that the respondent has. The high motivation of clients with Hypertension to get healing; means that there is a desire from within the patient to undergo treatment. Of the 23 people suffering from Hypertension ≤ 5 years there were three people with low adherence, nine people with moderate adherence. This condition shows that even though hypertensive patients suffer from Hypertension ≤ 5 years, it can be possible not to comply with treatment, this is due to the influence of insufficient knowledge factors that affect behavior in taking medication, such as only taking medication when blood pressure is high, thus causing respondents to be less obedient in undergoing treatment. Of the 23 people suffering from Hypertension ≤ 5 years, there were 11 people with high adherence. Respondents who suffer from Hypertension ≤ 5 years old still have high motivation to recover and have not experienced saturation, so that it will affect respondent compliance in undergoing treatment [13].

This review indicated that the factors affecting medication adherence in Hypertension patients still showed mixed results. The limitation of this review was that it could not control various confounding variables that were not assessed and not included in the analyses in several studies.

Conclusion

Adherence to taking medication was measured by taking antihypertensive drugs in individuals, diet behavior, exercise, and participation in Posbindu/Prolanis, and visits to health services for routine control. Non-compliance in treating hypertensive patients is due to not feeling any complaints; the patient forgets to remember the control time, has other activities, and is afraid of the dangers of drug side effects.

Adherence to drug use plays a vital role in the long-term treatment of Hypertension to reduce the risk of complications. Eleven factors influence medication adherence to Hypertension sufferers, including the level of knowledge, the role of health workers, motivation, support from family-friends, attendance at the clinic, age, employment status, education level, belief, gender, and length of suffering from Hypertension.

Further research to conduct more in-depth research related to factors related to medication adherence in hypertensive patients. It can carry out in another place and time, so that this research can be developed. In addition, further research is also needed regarding various deviations in patient knowledge, attitudes and practices about Hypertension that have a negative impact on medication adherence.

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