

# THE RELATIONSHIP BETWEEN KNOWLEDGE AND MEDICATION ADHERENCE ON THE QUALITY OF LIFE AMONG PATIENTS WITH HYPERTENSION

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## ABSTRACT

**Background:** Quality of life (QoL) is one way to determine individual benefits that can be observed from a health perspective. Someone with a history of hypertension will have a worse quality of life. Knowledge and adherence to therapy are factors that influence the quality of life in people with hypertension. The study aimed to determine the relationship between the knowledge and adherence to taking medication on the quality of life of among patients with hypertension.

**Subjects and Method:** This was a cross sectional study conducted at Jati Padang, South Jakarta, from February to July 2021. A total of 125 patients with hypertension were selected for this study. The dependent variable was quality of life. The independent variables were knowledge and compliance with hypertension medication. The data were collected by questionnaire and analyzed by correlation.

**Results:** Quality of life was correlated with knowledge ( $r= 0.56$ ;  $p= 0.004$ ), and medication adherence ( $r= 0.62$ ;  $p= 0.016$ ).

**Conclusion:** Quality of life is correlated with knowledge and medication adherence in patients with hypertension.

**Keywords:** hypertension, knowledge, medication adherence, quality of life, hypertensive patients.

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## BACKGROUND

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Hypertension is a chronic disease characterized by increased blood pressure, which causes the heart to pump blood harder to circulate it throughout the body (Yanita, 2017) One sign of having a history of hypertension is an increase in systolic blood pressure of 140 mmHg or diastolic blood pressure of 90 mmHg (Ministry of Health of the Republic of Indonesia, 2018). Generally, hypertension sufferers do not

feel the typical symptoms of increased high blood pressure, so if it is not treated quickly, it will increase the risk of death (Trybahari et al., 2019).

According to (Basic Health Research, 2018) the prevalence of hypertension in Indonesia is 34.1 percent, with a prevalence of 34.4 percent in DKI Jakarta. The South Jakarta area is the area with the highest access to hypertension services, with 67,738 cases found, but the South Jakarta area also

has a low presentation of hypertension services, with a rate of 0.3%, and the Jati Padang sub-district is one of the areas in South Jakarta that has easy access to services. If hypertension is not handled properly, it can cause complications in the form of heart attacks and strokes in people with cardiovascular disease. In the long term, this condition can lead to a worse quality of life. Quality of life can be defined as an aspect that describes an individual's advantages that can be assessed based on their lives (Marnis et al., 2018). The average hypertensive patient has a much lower quality of life than normotensive patients (Supratman et al., 2018); according to their findings, 70% of hypertension sufferers have a poor quality of life (Nurmalita et al., 2019a).

According to the theory (Wilson and Cleary, 1995), there are several factors that influence a person's quality of life, the most important of which is a person's characteristics in terms of knowledge and adherence to treatment. Individuals with a higher level of understanding tend to be more able to handle adherence when taking medication, which in turn will improve their quality of life. According to (Montiel-Luque et al., 2017), the lack of patient knowledge of the disease and the use of drugs for therapy results in the patient's lack of understanding of the therapy being undertaken, causing patient non-compliance in taking the drug, which in the future will affect quality of life.

Compliance with treatment has a significant effect on quality of life, where the level of adherence to treatment increases the patient's utility

value (Pratama et al., 2019). Patients who have a low educational background will experience an impact on their lives (Situmorang, 2019). This is supported by research (Yuwindry, 2016), which found that patients who did not attend school had a quality of life rate of 43.5%, while patients who received higher education had a quality of life rate of 92.5%.

Based on the description above, researchers are interested in conducting research with the aim of knowing the level of knowledge and adherence to taking antihypertensive medication and their impact on the quality of life of hypertensive patients in Jati Padang village.

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## **SUBJECTS AND METHOD**

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### **1. Study Design**

This research is a type of observational analytic research with a cross sectional research design. Jati Padang Village was chosen as the location for data collection in this study, and data collection was carried out from September 2020 to July 2021.

### **2. Population and Sample**

The population in this study were 173 residents who had a history of hypertension, which would later be adjusted based on inclusion and exclusion criteria, so that 125 respondents were included in this study. Sampling used the cluster sampling method, and the calculation of the sample size used the different proportion test formula.

### **3. Study Variables**

The dependent variable was quality of life. The independent variable were the level of knowledge and adherence to taking medication for hypertension sufferers.

#### **4. Definition Operational of Variables**

**Knowledge** is the respondent's ability to answer the questionnaire questions correctly regarding knowledge of hypertension, the measuring instrument used is the questionnaire.

**Compliance** with taking medication is the respondents' compliance with taking antihypertensive drugs in accordance with the provisions given by the doctor, the measuring tool used is a questionnaire.

**Quality of life** is a subjective assessment of how respondents feel about their quality of life. Based on research in 8 domains, including physical function, physical role, pain, general health, vitality, social function, emotional role, and mental health, the measuring tool used is a questionnaire.

#### **5. Study Instrument**

Data is in the form of primary data from questionnaire using the Knowledge questionnaire, which had previously been tested for validity and reliability, each correct response was given a score of 1, and an incorrect response was given a score of 0. Other instruments used include the Medication Adherence Scale (MMAS) to measure the level of adherence to treatment and the SF-36 to measure the quality of life of hypertensive patients.

#### **6. Data Analysis**

A univariate analysis was performed to

determine the frequency and percentage distribution of each variable; these variables were level of knowledge, level of medication adherence, and quality of life of hypertension patients. The Chi-Square test is used in bivariate analysis to compare the frequency of an event with the frequency of warnings with the interpretation of the main results.

#### **7. Research Ethics**

This research was reviewed in advance and was declared to have passed ethics by the UPN "Veteran" Jakarta Health Research Ethics Commission with number 395/VII/2021/KEPK.

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## **RESULTS**

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### **1. Univariate Analysis**

Based on table 1, it was found that out of 125 respondents, 68% were female, the average respondent was in the range of 57–69 years old with a percentage of 59 people (47.2%), and as many as 52% of respondents had jobs as housewives. According to research, 85 respondents (68%) had incomes below the UMP, and the majority of hypertension patients received monotherapy or single treatment, as many as 98 respondents (78.4%).

Based on table 2, it was found that 99 respondents (79.2%) had a good level of knowledge, 40% of the 125 respondents had a moderate level of medication adherence, and 118 respondents (94.4%) had a good quality of life.

**Table 1. Frequency Distribution of Respondents Based on Gender, Age, Last Education, Occupation, Monthly Income, and Hypertension Patients in Jati Padang Village, South Jakarta, in 2021.**

Characteristics	Categories	Frequency (n)	Percentage (%)
<b>Gender</b>	Female	85	68.0
	Male	40	32.0
<b>Age (years)</b>	<30	1	0.8
	31-43	15	12
	44-56	36	28.8
	57-69	59	47.2
	70-84	14	11.2
<b>Education</b>	Elementary School	41	32.8
	Junior High School	23	18.4
	Senior High School	35	28.0
	Diploma-3	5	4.0
<b>Profession</b>	S1/S2/S3	21	16.8
	Self-employed	7	5.6
	Private employees	9	7.2
	PNS/POLICE/TNI	4	3.2
	Housewife	65	52.0
	Trader	15	12.0
	Pension	13	10.4
<b>Income</b>	Etc	12	9.6
	Under UMP	85	68
	Above UMP	40	32
<b>Medication Type</b>	Monotherapy	98	78.4
	2 Drugs combination	26	20.8
	3 Drugs combination	1	0.8

**Table 2. Description of the Level of Knowledge, Compliance with Taking Medication, and the Quality of Life of Patients with Hypertension in the Jati Padang Village Area, South Jakarta, in 2021**

Variables	Categories	Frequency (n)	Percentage (%)
<b>Knowledge</b>	Moderate	26	20.8
	Good	99	79.2
<b>Medication Compliance</b>	Low	50	40
	Moderate	75	60
<b>Quality of Life</b>	Poor	7	5.6
	Good	118	94.4

## 2. Bivariate Analysis

Based on Table 3, it can be seen that There is a positive and strong relationship between knowledge and quality of life in people with hypertension. Subjects who have good knowledge have a good quality of life and are statistically significant ( $r= 11.54$ ;  $p= 0.004$ ).

There is a positive and strong relationship between medication adherence and quality of life in people with hypertension. Subjects who have moderate medication adherence have a good quality of life and are statistically significant ( $r= 10.09$ ;  $p= 0.016$ ).

**Table 4. The relationship between knowledge level and medication compliance with quality of life in hypertension sufferers in jati padang village, south jakarta in 2021**

Variables	Categories	Quality of Life				r	p
		Poor		Good			
		n	%	n	%		
<b>Knowledge</b>	Moderate	5	4	21	16.8	11.54	0.004
	Good	2	1.6	97	77.6		
<b>Medication Compliance</b>	Low	6	4.8	44	35.2	10.09	0.016
	Moderate	1	0.8	74	59.2		

## DISCUSSION

The results of the acquisition of primary data in a study conducted in the Jati Padang sub-district in July 2021 found that the majority of hypertension sufferers in the Jati Padang sub-district were female, as many as 84 people (67.2%). The results of this study were in line with Rahayu's research (2021), which stated in his research the majority of hypertension sufferers were female, as many as 62 respondents (58.49%) out of a total of 106 respondents (Rahayu, 2020). Also supported by Barudin's research (2021), the characteristics of hypertension sufferers at the Tasikmadu Karanganyar Health Center are mostly also female, 58.7% (Barudin, 2021). This factor can be caused because women who have entered the menopause stage have hormonal factors that cause an increase in blood pressure to be higher, so that the prevalence of women suffering from hypertension is higher than men (Sriwijaya et al., 2018)

In this study, the majority of respondents were in the age range of 57–69 years, totaling 59 people (47.2%). This result was different from Murti's research (2018) regarding the effect of health education on the level

of knowledge about quality of life in hypertensive patients in the working area of the Pajang Surakarta Health Center, where the average age range for hypertension sufferers is in the age range of 36–50 years, or 41.7% (Murti, 2018), but Rahayu's study (2020) stated that the majority of respondents at Anwar Medika Hospital had an age range of 56–65 years, or 48.11% (Rahayu, 2020). Blood pressure will continue to increase with age due to the thickening of the arteries, which will cause narrowing followed by a decrease in the elasticity of the blood vessels (Aripin, 2015). Hypertension is also a disease that generally affects the elderly (Sari et al., 2017).

Based on the last level of education, 41 people (32.8%) with hypertension in the Jati Padang village, South Jakarta, graduated from elementary school. This result was also stated in Maryadi's study (2021), which stated that the majority of respondents were elementary school graduates, with a total of 15 people (25%) (Maryadi, 2021), similar to Pratiwi's research (2017), which stated that the majority of hypertension sufferers had graduated from elementary school, 36.8 % (Pratiwi, 2017). Education is an important role in influencing an

individual's level of knowledge, which will later influence the attitude taken in carrying out the treatment being undertaken by the sufferer (Sumarni, 2015). The higher a person's education level, the later it can have an impact on receiving education to undergo treatment (Said, 2014).

In this study, the majority of hypertension sufferers in the Jati Padang sub-district, South Jakarta, worked as housewife 65 people (52%). This research is in line with Ramdhani's (2016) research, where the majority of hypertension sufferers work as housewives, as many as 55 respondents (48.2%) and is also supported by Rahayu's (2020), where out of 106 respondents with hypertension at Anwar Medika Hospital, 44 of them work as a housewife (Rahayu, 2020; Ramdhani et al., 2013). Respondents who do not work are less likely to engage in physical activities such as sports. Hypertension is more at risk for people who have this lifestyle (Agrina, 2011), based on previous studies stating that someone who does not work is at greater risk of suffering from hypertension 22 times compared to those who work (Peruntu, 2015).

The majority of hypertension sufferers in the Jati Padang Village, South Jakarta, received monotherapy, with as many as 98 respondents (78.4%) receiving it, similar to the results of Anwar's study (2019), where hypertension sufferers in the working area of the Puskesmas Air Putih Samarinda received monotherapy with a type of drug in the form of the CCBs (calcium channel blockers) class of 82 rMas Amsyar Kasongan in 2018 is a

type of diuretic drug in the CCB (calcium channel blockers) group, namely amlodipine, with a percentage of 72% (Anwar, 2019; Syahrida, 2019).

According to Nafrialdi (2008), the CCB (calcium channel blockers) group has proven effective and safe in lowering blood pressure and dealing with emergency hypertension because it can lower blood pressure in a short time (Nafrialdi, 2008). According to Tasya's (2019) research on the relationship between adherence to taking antihypertensive medication based on therapeutic regimens, there is no significant relationship between the effect of prescribing patterns and the level of patient compliance in medication taking (Tasya, 2019).

The distribution of knowledge levels in hypertensive patients in the Jati Padang sub-district, South Jakarta, in 2021 found that, the majority of respondents had a good level of knowledge, as many as 93 people (74.4%). attitudes and knowledge of obedient behavior using the drug amlodipine in the study, as many as 45 respondents (59%) had good knowledge (Haldi et al., 2021). This is different from what was stated in Pratiwi's study (2017), where only 47 respondents (44.3%) had hypertension with high knowledge and 59 respondents (55.7%) had hypertension with low knowledge (Pratiwi, 2017).

Education is one of the factors that can influence a person's knowledge, the higher the level of education, the better the person's knowledge will be, so that this will lead to an increase in self-potential to maintain the individual's health, but a low level of education does not rule out the

possibility for the individual to access various information (Hernawan & Arifah, 2012; Ekarini, 2011), which states that the level of knowledge can be obtained from anywhere, for example via radio or television (Hernawan and Arifah, 2012; Ekarini, 2011).

The distribution of the level of medication adherence of hypertensive patients in the Jati Padang sub-district of South Jakarta in 2021 found that the majority of respondents still had moderate adherence to taking medication, as many as 75 respondents (60%) and respondents with a low adherence level of 50 people (40%), the results of the study. This is consistent with Rahayu's research (2020), which found that 67 (63.2%) of 106 respondents had moderate medication adherence, 30 (28.1%) had high adherence, and nine (8.5%) had low adherence (Rahayu, 2020), but differs from Sitompul's research (2016), which found that 72.5% of respondents had a high level of compliance (Sitompul, 2016).

The moderate level of compliance is one of the stages of changing individual behavior that still needs to be monitored (Wulandari et al., 2021), Respondents who have a moderate level of compliance indicate that awareness of the complications and symptoms of hypertension has been formed so that the individual wishes to prevent an increase in blood pressure by taking hypertension medication (Rahayu, 2020; Wulandari et al., 2021). A person's compliance is their ability to carry out or maintain the guidelines recommended by medical providers, this can later have a positive impact on sufferers in their efforts to control

hypertension (Pamungkas, 2020).

The distribution of quality of life levels among hypertensive patients in Jati Padang Subdistrict, South Jakarta, in 2021 found that the majority of respondents had a good quality of life, namely 118 respondents (94.4%), where this study was in line with Nurmalita (2019), where the quality of life for hypertension sufferers was good by as much as 93.3% (Nurmalita et al., 2019), and similar to what was stated by Abdiana (2019) where there were 95 respondents with hypertension who had a good quality of life (75.4%) (Abdiana, 2019).

Quality of life is a level that describes an individual's superiority when measured against their lives. The quality of life of someone with hypertension will be disrupted, besides causing a decrease in quality of life. The quality of life of a person with hypertension can decrease, which can affect psychology, mental health, social function, and cognitive function. This can be prevented through habits and lifestyle, namely by consuming healthy foods, exercising or performing physical activity regularly, and taking medication (Ari, 2017).

From table 3, it is obtained that the P-value for the level of knowledge is 0.004, where the number is below 0.05, which indicates that there is a relationship between the level of knowledge and quality of life. The results of this study are in line with the research of De Sousa (2016), which states that there is a relationship between knowledge and quality of life in diabetic patients in Brazil, where the higher the patient's knowledge, the higher the quality of life.

In Indonesia, similar results were obtained in studies where research showed a relationship between knowledge level and quality of life in hypertensive patients at the Polyclinic Level III Baladhika Husada Jember Hospital and had a positive relationship (De-Sousa, 2016). This study, which involved 564 hypertensive patients in Nigeria, explained that the level of knowledge has a relationship with blood pressure control, where when the level of knowledge of hypertensive patients is high, blood pressure will be well controlled, which in turn will affect the patient's quality of life.

Knowledge has an important role in the formation of attitudes, behaviors, and individual actions obtained from various internal and external sources, where the level of knowledge can influence the lifestyle and behavior of individuals. Individual knowledge of hypertension plays a major role in developing management strategies to control hypertension. Individuals with a good level of knowledge about hypertension will have controlled blood pressure. As knowledge regarding hypertension increases, patients will control their disease (Wulandari, 2019).

Based on the results of table 3, it was found that the P-value for the level of adherence was 0.016, where the number was below 0.05, which indicated that there was a relationship between the level of adherence to taking medication and quality of life. These results are in line with the results of Afiani's study (2014), where in his study of 853 patients at the

Cardiac Polyclinic at RSU, Dr. Wahidin Sudiro Husodo Mojokerto, found a relationship between adherence to therapy and quality of life for patients with grade II hypertension ( $P < 0.05$ ), and a value of  $r = 0.401$ , which means compliance has a positive influence on quality of life (Afiani, 2014).

The quality of life of hypertensive patients can be influenced by several factors, including patient behavior such as medication adherence and blood pressure monitoring, which trigger complications (Aripin, 2015). Individuals have good behavior towards controlling their blood if the individual has good knowledge regarding the complications that can be caused (Irawan, 2014). So it can be concluded that good knowledge plays a role in increasing patient compliance, which in turn will improve the patient's quality of life.

According to research findings on hypertension sufferers in the Jati Padang sub-district, the majority of participants had good knowledge, moderate adherence to drug use, and a good quality of life. The results of the analysis also revealed that there was a relationship between the quality of life of hypertensive patients and their level of knowledge and adherence to treatment.

Based on the findings, where respondents with sufficient knowledge were found in as many as 26 people (20.8%) and low adherence to taking medication by 50 people (40%) but no respondents with high adherence to taking medication were found, it is expected that the Jati Padang sub-district Health Center can improve education for hypertension sufferers



so that in the future the level of knowledge and adherence to taking medication for hypertension sufferers will increase, which will be able to improve the quality of life of hypertension sufferers, and for other researchers, it is hoped that they can use other variables that can affect the quality of life for hypertension sufferers.

#### **AUTHOR CONTRIBUTION**

In this study, the authors contributed to data collection and assisted respondents in filling out questionnaires that had been prepared by the researchers, as well as the supervisor providing input to the authors in terms of writing and material.

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This study is self-funded.

#### **CONFLICT OF INTEREST**

The authors declare that they have no conflict of interest in this study.

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