Knowledge management analysis of medication compliance in hypertension patients at the Medan central care pharmacy

Analisi manajemen pengetahuan terhadap kepatuhan minum obat pada pasien hipertensi di apotek Medan central care pharmacy

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Abstract

Introduction: Hypertension is one of the most dangerous health problems in the world, because hypertension is the main risk factor that leads to cardiovascular disease such as heart attack, heart failure, stroke and kidney disease. **The aim** of this study was to determine the relationship between level of knowledge and adherence to taking medication in hypertensive patients at the Medan Central Care Pharmacy.. **This Method** This research method uses quantitative descriptive analytical methods using a cross-sectional design. The sampling technique uses purposive sampling technique. Data were analyzed using the Chi Square test. Data collection was carried out in June 2023. The research population was hypertension sufferers at the Medan Central Care Pharmacy. The sample for this research was 97 respondent. **The results** of this study showed that the frequency distribution of high knowledge was 45 respondents (46.4%), medium was 36 respondents (37.1%) and low was 16 respondents (16.5%). The frequency distribution of medication adherence was 19 respondents (19.6%) high, 45 respondents (46.4%) medium and 33 respondents (34%) low. The results of the chi-square test of knowledge with medication adherence showed a p-value of 0.000<0.05. **The conclusion** in this study is that the respondent's level of knowledge about hypertension is in the high category, the respondent's level of medication adherence is in the medium category and there is a relationship between the level of knowledge and medication adherence in hypertension patients at the Medan Central Care Pharmacy.

Keywords: Knowledge, Hypertension, Compliance, Taking Medicine.

Abstrak

Pendahuluan: Hipertensi termasuk salah satu masalah kesehatan yang cukup berbahaya di dunia, karena hipertensi merupakan faktor risiko utama yang mengarah kepada penyakit kardiovaskuler seperti serangan jantung, gagal jantung, stroke dan penyakit ginjal. **Tujuan** Penelitian ini bertujuan untuk mengetahui hubungan tingkat pengetahuan terhadap kepatuhan minum obat pada pasien hipertensi di Apotek Medan Central Care Pharmacy. **Metode** Penelitian ini menggunakan metode kuantitatif bersifat deskriptif analitik dengan menggunakan desain *cross-sectional.* Teknik pengambilan sampel menggunakan teknik *purposive sampling*. Data dianalisis menggunakan uji *Chi Square.* Pengambilan data dilakukan pada bulan juni 2023. Populasi penelitian adalah penderita hipertensi di Apotek Medan Central Care Pharmacy. Sampel penelitian ini adalah 97 responden. **Hasil** dari penelitian ini menunjukkan bahwa distribusi frekuensi pengetahuan tinggi sebanyak 45 responden (46,4%), sedang sebanyak 36 responden (37,1%) dan rendah sebanyak 16 responden (16,5%). Distribusi frekuensi kepatuhan minum obat tinggi sebanyak 19 responden (19,6%) , sedang sebanyak 45 responden (46,4%) dan rendah sebanyak 33 responden (34%). Hasil uji *chi-square* pengetahuan dengan kepatuhan minum obat menunjukkan nilai *p-value* 0,000<0,05. **Kesimpulan** dalam penelitian

penelitian ini adalah tingkat pengetahuan responden tentang hipertensi tergolong ke dalam kategori tinggi, tingkat kepatuhan minum obat responden tergolong ke dalam kategori sedang dan ada hubungan tingkat pengetetahuan terhadap kepatuhan minum obat pada pasien hipertensi di Apotek Medan Central Care Pharmacy.

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Introduction

Among the most dangerous health issues in the world, hypertension is a major risk factor leading to heart attacks, heart failure, strokes, and kidney disease. More than 1.3 billion people worldwide suffer from hypertension, accounting for 31% of all adults, an increase of 5.1% from 2000 to 2010 [1]. The World Health Organization (2022) states that cardiovascular diseases are the most common cause of death each year. More than 25% of deaths related to strokes and heart diseases occur in low- and middle-income countries. It is estimated that 1.4 billion people worldwide have high blood pressure, but only 14 percent of them can control it [2].

The results of a basic health survey conducted in 2018 in Indonesia showed that the prevalence of hypertension among people over 18 years old was 34.1%, with the highest rate in South Kalimantan (44.1%) and the lowest in Papua (22.2%). People aged 35 to 44 years had a hypertension prevalence of 31.6%, those aged 45 to 54 years had a prevalence of 45.3%, and those aged 55 to 64 years had a prevalence of 55.2%.[3]. Knowledge is essential to prevent hypertension complications and to help sufferers manage daily life aspects to avoid fatty foods, smoking, unhealthy lifestyles, and stress [4].

In general, a person's level of behavior is measured as sensitivity to treatment. A more comprehensive therapy strategy plan to identify hypertension patients' adherence to medication should be implemented to improve the effectiveness of therapy. Health professionals state that patient non-compliance is a significant issue because hypertension is a prevalent disease with no clear symptoms and can lead to other dangerous complications if not treated promptly [4]. An agreement on the strategies for the prevention and control of Non-Communicable Diseases (NCDs) worldwide has been reached due to concerns about the increasing prevalence of NCDs, especially in developing countries. Public behavior, environmental changes, demographic transition, technology, economics, and socio-cultural factors greatly influence disease patterns.

According to the Ministry of Health of the Republic of Indonesia, hypertension is a condition of the circulatory system that causes blood pressure to rise above normal values, which is more than 140/90 mmHg, or a systolic blood pressure higher than the normal limit of 140 mmHg, and a diastolic blood pressure higher than 90 mmHg [5]. Insulin resistance, osteoporosis with vascular calcification, accelerated atherosclerosis from chronic kidney disease, peripheral vascular disease, changes in elastin formation during intrauterine growth retardation, thyrotoxicosis, and repair of coarctation cause isolated systolic blood pressure. Systolic blood pressure usually increases with age but will decrease after the age of 50 [6]. Hypertension is known as a disease that shows no symptoms but can cause dangerous complications and even sudden death [7].

One can prevent hypertension by changing their lifestyle, such as exercising regularly, quitting smoking, avoiding alcohol and alcoholic beverages, reducing salt and caffeine intake, and taking antihypertensive

medications proven to lower blood pressure [8]. Based on previous research conducted by Fauziah & Mulyani (2022) titled "The Relationship Between Knowledge and Adherence to Taking Antihypertensive Medication," the results showed that among 34 respondents with low knowledge, 22 respondents (64.7%) were non-adherent to taking medication and 12 respondents (35.3%) were adherent. In contrast, among 49 respondents with good knowledge, 16 respondents (32.7%) were non-adherent, and 33 respondents (67.3%) were adherent [9]. Research conducted by Farida et al. (2021) found that 5.3% of respondents had good knowledge, 27.1% had sufficient knowledge, and 17.6% had low knowledge [10]. The study by Rahayu et al. (2021) found that 24% of hypertension patients had low knowledge, 46% had moderate knowledge, and 30% had high knowledge. The adherence levels of hypertension patients were 8.5% low, 63.2% moderate, and 28.3% high. There is a relationship between the level of knowledge and adherence among hypertension patients, with a significant result of 0.000 (<0.05) and a strong correlation [11].

Based on the survey results at Apotek Medan Central Care Pharmacy, it was found that approximately 2,600 hypertension patients per year and 150-180 hypertension patients per month seek treatment at the pharmacy. During interviews with 10 patients receiving treatment at Apotek Medan Central Care Pharmacy, 3 of them were adherent to medication and regularly monitored their blood pressure, while the remaining 7 were non-adherent. They cited fear of kidney effects from frequent medication use and only took medication when their blood pressure was high.

The aim of this study is to analyze knowledge management's impact on medication adherence among hypertension patients at Apotek Medan Central Care Pharmacy and to explore the relationship between knowledge management analysis and medication adherence among hypertension patients at Apotek Medan Central Care Pharmacy.

Experimental Section

Materials and Apparatus

This study employed a non-experimental quantitative method that is descriptive-analytical in nature using a cross-sectional design. The sampling technique used was purposive sampling, with a total sample size of 97 respondents suffering from hypertension. The study was conducted at Apotek Medan Central Care Pharmacy in June 2023. Data collection was done using a hypertension knowledge questionnaire, and to measure medication adherence among hypertension patients, the modified Morisky Medication Adherence Scale (MMAS-8) was utilized according to research needs. Data analysis in this study involved univariate analysis by calculating percentages of patient counts and bivariate analysis using the chi-square statistical test with a p-value <0.05. The data obtained were processed using SPSS.

Results and Discussion

Univariate Analysis

a. Demographic Data

Table 1. Frequency Distribution of Respondents by Age

No	Age	Frequency	%
1	41-45	8	8,2
2	46-55	38	39,2
3	56-65	45	46,4
4	>65	6	6,2
	Total	**97**	**100**

Based on Table 1, it shows that the majority of respondents are aged 56-65 years, totaling 45 respondents (46.4%).

Table 2. Frequency Distribution of Respondents by Gender

No	Gender	Frequency	%
1	Male	41	42,3
2	Female	56	57,7
	Total	**97**	**100**

According to Table 2, the majority of respondents are female, totaling 56 respondents (57.7%), while males are 41 respondents (42.3%).

Table 3. Frequency Distribution of Respondents by Education

No	Education	Frequency	%
1	Elementery School	10	10,3
2	Junior High School	23	23,7
3	Senior High School	40	41,2
4	University	24	24,7
	Total	**97**	**100**

Based on Table 3, the majority of respondents have a high school education, totaling 40 respondents (41.2%).

Table 4. Frequency Distribution of Respondents by Occupation

No	Occupation	Frequency	%
1	House Wife	36	37,1
2	Enterpreneur	26	26,8
3	Civil Servant	9	9,3
4	private employees	16	16,5
5	Retirees	10	10,3
	Total	**97**	**100**

Based on Table 4, the majority of respondents' occupation is housewife, totaling 36 respondents (37.1%).

b. Respondents' Knowledge

Table 5. Frequency Distribution of Respondents Based on Knowledge of Hypertension

No	Knowledge	Frequency	%
1	High	45	46,4
2	Middle	36	37,1
3	Low	16	16,5
	Total	**97**	**100**

Based on Table 5, the chi-square test resulted in a p-value of $(0.000<0.05)$. Therefore, it can be stated that there is a relationship between the level of knowledge of hypertension patients and adherence to hypertension medication at Apotek Medan Central Care Pharmacy.

Univariate Analysis

a. Demographic Data

In this study, the respondents were 97 hypertensive patients at Apotek Medan Central Care Pharmacy. From the research findings, it is known that out of 79 respondents, the highest age range is between 56-65 years (46.4%). The incidence of hypertension tends to increase with age. This is because as people age, the arterial walls thicken due to the accumulation of collagen, which causes blood vessels to narrow and become stiffer [11] . Age is one of the risk factors that can influence hypertension; therefore, as age increases, the risk

of hypertension also increases. This study is consistent with research conducted by Rahayu et al. (2021), which found that the majority of hypertension cases occurred in the 56-65 age group, comprising 51 respondents (48.11%) [11].

Based on gender, it is known that out of 97 respondents, the majority are female, totaling 56 respondents (57.7%), while the remaining 41 respondents (42.3%) are male. The Basic Health Research (2018) explains that hypertension prevalence is highest among females [3]. Hypertension prevalence in women increases after entering menopause, which is related to hormonal factors. Estrogen hormone in women plays a role in protecting blood pressure during sympathetic nerve muscle activity. In women over 40 years old, estrogen production begins to decline, reducing protection against blood pressure during sympathetic nerve activity [12]. This study aligns with research conducted by Swandari et al. (2022), stating that the majority of respondents were female, totaling 180 respondents (54.9%), while 148 respondents (45.1%) were male [12].

Based on education, it is known that out of 97 respondents, the majority have completed high school education, totaling 40 respondents (41.2%). This aligns with research conducted by Dhrik et al. (2023), which similarly found that 31 respondents (39.8%) with hypertension had completed high school education [13]. Education is one of the factors influencing an individual's knowledge; the higher the level of education, the better the knowledge, which consequently affects one's ability to maintain and improve their health [13]. Lower education levels pose a higher risk of non-adherence to treatment due to limited knowledge. However, higher education facilitates receiving information, thereby improving quality of life and expanding knowledge [15].

Based on occupation, it is known that out of 97 respondents, the highest occupation is housewife (IRT), totaling 36 respondents (37.1%). This is consistent with research by Rahayu et al. (2021), stating that the majority of respondents' highest occupation is housewife, totaling 44 respondents (41.6%) [11]. Housewives have lighter physical activity, which increases their risk of hypertension. Other factors such as stress can trigger increased sympathetic nerve activity, leading to persistently higher blood pressure than usual [14].

b. Respondents' Knowledge

From the results of the study involving 97 respondents, it was found that based on total respondent answers, the highest data was in the high knowledge category, totaling 45 respondents (46.4%), while the lowest data was in the low knowledge category, totaling 16 respondents (16.5%). This aligns with research conducted by Fatonah et al. (2022), which stated that the majority of outpatient hypertension patients at Puskesmas Purwasari belonged to the high knowledge category, totaling 82 respondents (92.1%), with only 7 respondents (7.9%) in the low knowledge category [4]. Knowledge is not only obtained formally but also through experience. Additionally, knowledge can be acquired through available household information sources such as radio and television. Most human knowledge is acquired through sight and hearing, making the use of senses crucial for receiving information [15].

Knowledge is crucial for people to understand why they need to take certain actions, making it easier to change community behavior for the better. Knowledge about hypertension is particularly important for hypertension patients. This knowledge influences adherence to medication in hypertension management to control their blood pressure and prevent chronic complications, thereby improving quality of life [9]. According to Sanoraya in Padaunan (2022), patients' knowledge about hypertension is crucial to support treatment efforts because the better the patient understands their condition, the more vigilant and compliant they will be in treatment [16].

c. Respondents' Compliance Level

From the results of the study involving 97 respondents, it was found that based on total respondent answers, the highest data was in the moderate compliance category, totaling 45 respondents (46.4%), while the lowest data was in the high compliance category, totaling 19 respondents (19.6%). This aligns with research conducted by Padaunan (2022), which stated that the majority of hypertension patients' medication adherence levels were categorized as moderate, totaling 31 respondents (49.2%) [16].

An individual's medication adherence is influenced by several factors such as the duration of hypertension, the number of medications taken, and the time spent on healthcare service visits. Additionally, fear of medication side effects and overuse can also contribute to a person's medication adherence levels [16]. According to Puspita in Padaunan (2022), one of the factors influencing medication adherence in hypertension patients is their level of knowledge about hypertension [16].

According to Lukitasari in Nurdin (2022), respondents who have good knowledge about hypertension but are not compliant with treatment do so because they get bored of taking medication every day, they believe

they don't need medication anymore once they feel healthy, and they often forget to take medication due to their busy daily activities [15].

Hypertension treatment should be continuous and long-term until blood pressure is controlled. Even if symptoms disappear, hypertension patients should continue taking medication until their blood pressure is fully controlled. This is because hypertension often does not cause typical symptoms or complaints, making it difficult for patients to realize their condition [15].

Bivariate Analysis

Based on the research results involving 97 respondents, the majority of respondents had a high level of knowledge, where the highest data was in the high knowledge category, totaling 45 respondents (46.4%). Regarding medication adherence, there were 45 respondents (46.4%) with moderate adherence levels, while the lowest data was in the low knowledge category, totaling 16 respondents (16.5%), with high adherence levels totaling 19 respondents (19.6%).

Statistical testing using the chi-square test yielded a p-value of (0.000<0.05), indicating a significant relationship between the level of knowledge of hypertension patients and their adherence to hypertension medication at Apotek Medan Central Care Pharmacy. This study's findings are consistent with research conducted by Fauziah et al. (2022) titled "The Relationship Between Knowledge and Adherence to Antihypertensive Medication," which obtained a statistical significance value of 0.008 (>0.05), indicating a significant relationship between knowledge and adherence to antihypertensive medication [9].

These results indicate that knowledge level significantly influences medication adherence, meaning that the higher the patient's knowledge level, the more compliant they are in using medication, consistent with previous research. Conversely, lower knowledge levels lead to lower medication adherence. Factors influencing patient adherence in medication consumption include knowledge, attitudes, age, and patient actions. Adherence is also related to the patient's assessment of personal treatment needs, desires, and concerns (side effects, belief in treatment, and costs).

Conclusions

Based on the research conducted at Apotek Medan Central Care Pharmacy, it can be concluded that The analysis of knowledge management on medication adherence among hypertensive patients at Apotek Medan Central Care Pharmacy falls into the high category, comprising 45 respondents (46.4%). There is a significant relationship between the analysis of knowledge management and medication adherence among hypertensive patients at Apotek Medan Central Care Pharmacy, with a p-value of 0.000 (<0.05).

Conflict of Interest

Acknowledgment

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