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The Relationship Between knowledge And Nutritional Status With The Incident Of Hypertension In The Elderly In The UPTD Work Area Of The Tanjung Agung Community Health Center In 2025

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Abstract

Non-communicable diseases (PTM) are the leading cause of death globally. One of the PTM which is a very serious health problem today is hypertension. Hypertension is still a health problem because it is the silent killer because there are no signs or symptoms that can be seen from the outside, which will cause several complications such as heart, brain and kidney disease (Maulidina, Harmani, & Suraya, 2019). In general, the aim of the study was to find out the relationship between nutritional knowledge and nutritional status with the incidence of hypertension in the elderly in the working area of the Tanjung Agung Health Center UPTD in 2025. This research includes research using quantitative correlation methods with a cross sectional approach and a sample size of 55 people. The variables studied were presented in the form of a frequency distribution table and tested with univariate and bivariate analysis, namely by using demographic data questionnaires, knowledge level questionnaires and nutritional status questionnaires. The results of the chi square test obtained a p value of 0.001, meaning that there is a relationship between knowledge and the incidence of hypertension in the Tanjung Agung Health Center UPTD Work Area in 2025. The conclusion in this study is that there is a relationship between nutritional knowledge and nutritional status with the incidence of hypertension in the elderly in the working area of the Tanjung Agung Health Center UPTD in 2025.

Keywords: Knowledge, Nutritional Status, Hypertension

INTRODUCTION

Non-communicable diseases (NCDs) are the leading cause of death globally. One such NCD that currently poses a very serious health challenge is hypertension. Hypertension remains a significant health concern—often referred to as a "silent killer"—because it presents no visible signs or symptoms, yet it can lead to various complications, including heart, brain, and kidney diseases (Maulidina, Harmani, & Suraya, 2019).

Nutritional status essentially reflects the consumption of nutrients in relation to the body's requirements. An individual achieves good nutritional status when their nutrient intake aligns with their body's needs. Insufficient nutrient intake can lead to undernutrition, while excessive intake can result in overnutrition. Thus, nutritional status serves as an indicator of an individual's condition resulting from their daily nutrient intake (Holil, 2017).

According to the World Health Organization (WHO) in 2018, an estimated 1 billion people worldwide suffer from hypertension, which is responsible for approximately 7.5 million deaths—accounting for about 12.8% of all global deaths. The American Heart Association (2014) reports that roughly 1 in 3 adults suffers from this condition. Furthermore, the number of cases is projected to rise by 7.2%, reaching approximately 83.5 million people by 2030 (Langingi, 2021). Based on data from the 2018 Basic Health Research (Riskesdas), the incidence of hypertension in Indonesia increased from 25.8% among individuals aged ≥18 years in 2013 to 34.1% in 2018. In 2018, the prevalence of hypertension in South Sumatra—based on measurements taken among the population aged ≥18 years—was 30.44%. The highest prevalence was recorded in South Kalimantan (44.13%), followed by West Java (39.60%) and East Kalimantan (39.30%).

In this context, a study by Langingi (2021) examined the relationship between nutritional status and the incidence of hypertension among individuals aged 41–65 years in Sinuian Village, Remboken District, Minahasa Regency (based on 2015 data). Hypertension

remains a major issue in many countries, including those that are highly developed. This study aimed to determine the association between nutritional status and the occurrence of hypertension in the 41–65 age group in Sinuian Village, Remboken District, Minahasa Regency, in 2015. The results indicated that 69.3% of the respondents did not have hypertension, while 30.7% were diagnosed with hypertension.

According to the 2020 Basic Health Research (Riskesdas) data for South Sumatra Province, the prevalence of hypertension—defined as having a medical diagnosis or currently taking antihypertensive medication—among the population aged ≥ 18 years totaled 21,928 individuals. Ogan Komering Ulu Regency ranked 10th out of the 17 regencies/cities in South Sumatra, with 950 individuals affected (Riskesdas South Sumatra Province, 2021).

Persistent, long-term elevation of blood pressure can lead to damage in the kidneys (renal failure), heart (coronary heart disease), and brain (resulting in stroke) if not detected early and managed with appropriate treatment. Hypertension can give rise to various complications; it triggers the formation of atherosclerotic plaques in cerebral arteries and arterioles, which may lead to arterial occlusion, ischemic injury, and stroke as long-term complications (Zaenurrohmah and Rachmayanti, 2017).

Complications from hypertension account for approximately 9.4 million deaths worldwide each year. Hypertension is responsible for at least 45% of deaths caused by heart disease and 51% of deaths caused by stroke. Mortality resulting from cardiovascular diseases—primarily coronary heart disease and stroke—is projected to continue rising, reaching 23.3 million deaths by 2030 (Zaenurrohmah and Rachmayanti, 2017).

Data from the Tanjung Agung Community Health Center (Puskesmas) show 140 patient visits for hypertension in 2020. Between January and March 2025, there were 50 visits by patients with hypertension, consisting of 30 males and 20 females (Tanjung Agung Community Health Center Profile, 2021). Based on research conducted by Langingi (2021) regarding the relationship between the nutritional status of the elderly and hypertension—carried out in the working area of the Paniki Bawah Community Health Center (Puskesmas), Mapanget District, Manado City, in 2015—it was found that nutritional status is a contributing factor to the development of hypertension. The study yielded a p-value of 0.0002, indicating a significant relationship between the nutritional status of the elderly and hypertension.

The high prevalence of hypertension is a serious issue that necessitates preventive measures. The objective of this study is to analyze the relationship between knowledge, nutritional status, and the incidence of hypertension among the elderly in the working area of the Tanjung Agung Community Health Center (UPTD Puskesmas) in 2025.

RESEARCH METHODS

This study employs a quantitative descriptive design with a cross-sectional approach. It will be conducted from August 2024 to January 2025 within the working area of the Tanjung Agung Community Health Center (UPTD Puskesmas Tanjung Agung). The sample consists of 55 outpatients visiting the Tanjung Agung Community Health Center in 2025, selected using the accidental sampling method. The independent variables in this study are knowledge and nutritional status, while the dependent variable is the occurrence of hypertension. Data will be collected using questionnaires and checklists. The gathered data will be presented in tabular form and subsequently analyzed using the Chi-square test in SPSS, with a significance level of $\alpha = 0.05$.

RESULTS AND DISCUSSION

Univariate Analysis

Respondent Characteristics Based on the Occurrence of Hypertension

Table 5.1 Frequency Distribution of Respondents Regarding the Occurrence of Hypertension in the Working Area of the Tanjung Agung Community Health Center (Puskesmas) in 2025

No	Hypertension Status	Quantity	Percentage
1	Normal	36	65,5%
2	Abnormal	19	34,5%
	Total	55	100,0%

Based on Table 5.1, it can be seen that out of 55 respondents, 36 (65.5%) had normal blood pressure, while 19 (34.5%) had abnormal blood pressure.

Characteristics of Respondents Based on Knowledge

Table 5.2 Frequency Distribution of Respondents' Knowledge in the Working Area of the Tanjung Agung Community Health Center (UPTD Puskesmas) in 2025

No	Knowledge	Quantity	Percentage
1	Good	39	70,9%
2	Poor	16	29,1%
	Total	55	100,0%

Based on Table 5.2, it is shown that out of 55 respondents, 39 (70.9%) possess good knowledge, while 16 (29.1%) possess poor knowledge.

Characteristics of Respondents Based on Nutritional Status

Table 5.3 Frequency Distribution of Respondents by Nutritional Status in the Working Area of the Tanjung Agung Community Health Center (UPTD Puskesmas) in 2025

No	Nutritional Status	Quantity	Percentage
1	Undernutrition	9	16,4%
2	Normal Nutrition	22	40,0%
3	Overnutrition	24	43,6%
	Number	55	100,0%

Based on Table 5.3, it can be seen that among the 55 respondents, 9 (16.4%) had an undernourished nutritional status, 22 (40.0%) had a normal nutritional status, and 24 (43.6%) had an overnourished nutritional status.

Bivariate Analysis

Relationship Between Knowledge and the Occurrence of Hypertension

Table 5.4 Relationship Between Knowledge and the Occurrence of Hypertension in the working area of the Tanjung Agung Community Health Center (Puskesmas) in 2025

No	Pengetahuan	Kejadian Hipertensi				Jumlah		*P Value*
		Normal		Tidak Normal				
		F	%	F	%	F	%	
1	Baik	31	79,5	8	20,5	39	100,0	0,001
2	Kurang Baik	5	31,3	11	68,8	16	100,0	
	Jumlah	36	65,5	19	34,5	55	100,0	

**Chi Square*

Based on the analysis of Table 5.4, it is found that among 55 respondents, 31 (79.5%) had good knowledge and normal blood pressure, while 5 (31.3%) had poor knowledge and normal blood pressure. Conversely, 8 (20.5%) respondents had good knowledge but abnormal blood pressure, and 11 (68.8%) respondents had poor knowledge and abnormal blood pressure.

The chi-square test yielded a p-value of 0.001, indicating a significant association between knowledge and the occurrence of hypertension in the working area of the Tanjung Agung Community Health Center (UPTD Puskesmas) in 2025.

Relationship Between Nutritional Status and the Incidence of Hypertension

Table 5.5 Relationship Between Nutritional Status and the Incidence of Hypertension in the working area of the Tanjung Agung Community Health Center (Puskesmas) in 2025

No	Status Gizi	Kejadian Hipertensi				Jumlah		*P Value*
		Normal		Tidak Normal				
		F	%	F	%	F	%	
1	Gizi Kurang	7	77,8	2	22,2	9	100,0	0,000
2	Gizi Normal	20	90,9	2	9,1	22	100,0	
3	Gizi Lebih	9	37,5	15	62,5	24	100,0	
	Jumlah	36	65,5	19	34,5	55	100,0	

**Chi Square*

Based on the analysis of Table 5.5, it is observed that among the 55 respondents, 7 (77.8%) with poor nutritional status had normal blood pressure, 20 (90.9%) with normal nutritional status had normal blood pressure, and 9 (37.5%) with excess nutritional status had normal blood pressure. Conversely, 2 (22.2%) respondents with poor nutritional status had abnormal blood pressure, 2 (9.1%) with normal nutritional status had abnormal blood pressure, and 15 (62.5%) with excess nutritional status had abnormal blood pressure.

The chi-square test yielded a p-value of 0.000, indicating a significant association between nutritional status and the incidence of hypertension in the working area of the Tanjung Agung Community Health Center (UPTD Puskesmas Tanjung Agung) in 2025.

Discussion

The Relationship Between Knowledge and the Occurrence of Hypertension

The analysis of the relationship between knowledge and the occurrence of hypertension shows that among respondents with good knowledge, 31 (79.5%) had normal blood pressure, while 8 (20.5%) had abnormal blood pressure. Among respondents with poor knowledge, 5 (31.3%) had normal blood pressure, while 11 (68.8%) had abnormal blood pressure.

The Chi-square test yielded a p-value of 0.001, indicating a significant relationship between knowledge and the occurrence of hypertension within the working area of the Tanjung Agung Community Health Center (Puskesmas) in 2025.

This is consistent with a study by Langingi (2021) on the relationship between knowledge and hypertension among the elderly in the working area of the Tanjung Sari Community Health Center, Cianjur, in 2020, which reported a p-value of 0.0003, signifying a significant association between knowledge and hypertension.

In the study by Zaenurrohmah and Rachmayanti (2017), the elderly participants demonstrated a "sufficient" level of knowledge, and all of them implemented effective control measures. As shown in Table 4, 70.2% of the elderly possessed a "sufficient" level of knowledge, which aligns with their effective control practices. Meanwhile, 29.7% of the elderly possessed a "good" level of knowledge and also engaged in effective control measures.

This proportion is lower than that of the group with a "sufficient" level of knowledge, suggesting that effective control measures are not exclusive to those with a high level of knowledge. In fact, a larger number of elderly individuals with a "sufficient" level of knowledge practiced control measures compared to those with a "good" level of knowledge. Generally, the elderly carry out these control measures—whether consciously or unconsciously—as part of their routine activities; for instance, they often pay close attention to their dietary intake (Zaenurrohmah & Rachmayanti, 2017).

The Relationship Between Nutritional Status and the Incidence of Hypertension

The analysis of the relationship between nutritional status and the incidence of hypertension shows that among respondents with poor nutritional status, 7 (77.8%) had normal blood pressure, while 2 (22.2%) had abnormal blood pressure. Among those with normal nutritional status, 20 (90.9%) had normal blood pressure, while 2 (9.1%) had abnormal blood pressure. Among those with excess nutritional status, 9 (37.5%) had normal

blood pressure, while 15 (62.5%) had abnormal blood pressure. The chi-square test yielded a p-value of 0.000, indicating a significant relationship between nutritional status and the incidence of hypertension in the working area of the Tanjung Agung Community Health Center (Puskesmas) in 2025.

Research conducted by Langingi (2021) on the relationship between the nutritional status of the elderly and hypertension in the working area of the Paniki Bawah Community Health Center, Mapanget District, Manado City, identified nutritional status as a contributing factor to the development of hypertension. The study reported a p-value of 0.0002, confirming a significant relationship between the nutritional status of the elderly and hypertension.

An individual's level of health is influenced by several factors, including the absence of disease or disability, favorable socio-economic conditions, a healthy environment, and good nutritional status. Individuals with good nutritional status are less susceptible to both infectious and degenerative diseases. Nutritional status is a crucial factor in achieving an optimal level of health. In reality, however, many people in our society still suffer from conditions linked to inadequate nutrition. Based on research conducted by Asrinawaty, nutritional status is defined as the health condition of individuals or groups, determined by the extent to which their physical requirements for energy and nutrients—obtained from food—are met; the physical impact of this status is measured through anthropometry. Excess nutrition increases the risk of hypertension for several reasons. A greater body mass requires a larger volume of blood to supply oxygen and nutrients to body tissues. This increases the volume of blood circulating through the blood vessels, exerting greater pressure on arterial walls, which leads to an elevation in blood pressure.

Research and related theories indicate that elderly individuals with excess nutritional status are more likely to have high blood pressure compared to those with insufficient or normal nutritional status. However, individuals across all categories—insufficient, normal, excess, and obese—may experience Grade 1 or Grade 2 hypertension. This can be attributed to various factors, including family history, genetics, and excessive consumption of flavor enhancers, all of which can contribute to primary hypertension. A family history of the condition carries a higher risk of developing high blood pressure compared to those without such a history. It is hoped that the elderly will maintain a balanced, nutritious diet, and that they will receive support from their families to foster an awareness of the importance of health, as well as encouragement to have their health checked at the nearest community health post (*posyandu*).

CONCLUSION

Based on the research conducted and the discussion presented, the following conclusions can be drawn:

The chi-square test yielded a p-value of 0.001, indicating a relationship between knowledge and the incidence of hypertension within the working area of the Tanjung Agung Community Health Center (Puskesmas) in 2025.

The chi-square test yielded a p-value of 0.000, indicating a relationship between nutritional status and the incidence of hypertension within the working area of the Tanjung Agung Community Health Center (Puskesmas) in 2025.

It is hoped that public knowledge can be improved to raise awareness among the community—particularly the elderly—regarding the factors that contribute to hypertension.

It is also hoped that the quality and depth of educational efforts can be enhanced—ensuring they are more comprehensive, clear, and detailed—to facilitate future research and the preparation of scientific papers.

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