

KNOWLEDGE OF WARNING SIGNS OF HYPERTENSION CRISIS AND EMERGENCY HELP SEEKING BEHAVIOR AMONG PRODUCTIVE AGE ADULTS

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ABSTRACT

Background: Hypertensive crisis is an emergency condition that has the potential to cause damage to target organs and death if not treated quickly and appropriately. The low level of knowledge of the productive age community about the danger signs of a hypertension crisis can contribute to delays in seeking emergency medical attention.

Purpose of this study is to determine the level of knowledge of productive age regarding the danger signs of a hypertensive crisis and emergency medical assistance seeking behavior.

Methods: This study used a quantitative design with a cross-sectional approach conducted in Kelurahan Pakis, Sawahan, Surabaya, with a sample of 196 respondents selected using a simple random sampling technique. Data was collected using a structured questionnaire that has been tested for validity and reliability. Data analysis was carried out univariate and bivariate using the Chi-square test with a significance level of $p < 0.05$.

Results: The results showed that most of the respondents had a good level of knowledge (36.7%), followed by the categories of sufficient (34.7%) and insufficient (28.6%). Emergency medical assistance seeking behavior was classified as good in 53.1% of respondents, but there were still 46.9% with inappropriate behavior. The results of the bivariate analysis showed a significant relationship between knowledge level and emergency medical assistance seeking behavior ($p = 0.001$). These findings show that knowledge level has an important role in shaping medical attention seeking behavior in hypertensive emergency conditions.

Conclusion: Comprehensive interventions are expected to lower the risk of treatment delays and more severe complications.

Keywords: Emergency Care; Help-Seeking Behavior; Hypertensive Crisis; Knowledge; Productive Age.

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BACKGROUND

Hypertension is still a significant global health problem because it contributes greatly to cardiovascular morbidity and mortality despite the availability of a variety of effective therapies (Burlacu et al., 2025). A hypertensive crisis is a life-threatening emergency condition that requires immediate medical treatment to prevent damage to the target organ (Wondimneh et al., 2025). However, the low level of public knowledge, especially the productive age, related to the danger signs of hypertension crisis is still a major obstacle in early detection and rapid treatment (Wondimneh et al., 2025). This lack of understanding contributes to delays in seeking emergency medical attention thereby increasing the risk of severe complications such as stroke, heart failure, and kidney failure (Kilindimo et al., 2023). On the other hand, productive age groups often ignore early symptoms due to the demands of activity and the perception that they are still in good health. This suggests that the main problem is not only in the incidence of hypertension, but also in low health literacy and help-seeking behavior in emergency situations (Burlacu et al., 2025).

Globally, hypertension affects about 1.13 billion people and about 1–2% of them experience a hypertensive crisis (Gezie et al., 2023). Some recent studies show that the prevalence of hypertensive crises in adult patients can reach 18.9% in certain healthcare facilities (Siame et al., 2025). Hypertensive crises are also reported to be one of the leading causes of emergency department visits with serious clinical implications. In some developing countries, the burden of hypertensive crisis cases continues to increase in line with low blood pressure control in the adult population. In addition, most of the patients who come to the hospital are already in a condition with complications of the target organ due to delayed treatment. This data shows that the hypertension crisis is not only a clinical problem, but also a public health problem related to behavior and access to health services (Calderon-Ocon et al., 2024). The prevalence of hypertension in the adult population in Indonesia reaches 34.11%, which means that about one in three people suffer from high blood pressure according to the latest SKI 2023 data (Tirtasari & Kodim, 2019). The prevalence of hypertension in East Java reaches 32.8% in the population aged 15 years and above, placing it as one of the provinces with the highest cases in Indonesia. Meanwhile, Surabaya as an urban center records the highest number of sufferers in the region with an estimated hundreds of thousands of people due to the high-risk urban lifestyle. Based on the doctor's diagnosis, the age group of 18-24 has a prevalence of hypertension of 0.4% and the age group of 25-34 of 1.8% (Ahmad, 2024).

Hypertensive crises generally occur due to uncontrolled or undiagnosed hypertension over a long period of time (Kilindimo et al., 2023). This process begins with an increase in blood pressure that is not adequately treated and eventually triggers damage to target organs such as the brain, heart, and kidneys. Risk factors such as diabetes mellitus, history of hypertension, and alcohol consumption accelerate the occurrence of a hypertensive crisis in dewas patients (Gezie et al., 2023). In addition to clinical factors, low patient knowledge has been shown to increase the risk of developing a hypertensive crisis by almost double. In many cases, patients come to the emergency department after severe symptoms such as shortness of breath, chest pain, and severe headaches. Delays in making decisions to seek medical attention are key factors that worsen the patient's condition.

Efforts to increase public knowledge about the danger signs of the hypertension crisis are an important strategy in preventing complications (Burlacu et al., 2025). Structured health education can increase individual awareness to recognize early symptoms and seek immediate medical attention. Community-based approaches and health promotion have proven effective in increasing hypertension literacy in productive age groups. In addition, strengthening the emergency service system and access to health services is also needed to accelerate the handling of hypertension crisis cases. The role of health workers, especially emergency nurses,

is very important in providing education and early intervention to at-risk patients (Burlacu et al., 2025). Although various studies have discussed the hypertension crisis from clinical aspects and risk factors, there are still limited studies that specifically explore the level of knowledge of productive age regarding the danger signs and its relationship with emergency medical assistance seeking behavior. In addition, most studies focus more on the patient population in health facilities, so they have not comprehensively described the condition of health literacy in the community. Therefore, this study offers novelty by integrating aspects of knowledge and seeking help seeking behavior in the context of productive age as a risk group that is often overlooked. Thus, research on the level of knowledge and behavior of seeking medical help at productive age is crucial to support comprehensive hypertension crisis prevention strategies. Therefore, this study aims to determine the level of knowledge regarding the warning signs of hypertensive crisis and emergency help seeking behavior among working age adults.

METHODS

This study uses a quantitative design with an analytical descriptive approach and a cross-sectional design, which aims to analyze the relationship between the level of knowledge of productive age regarding the danger signs of a hypertensive crisis and the behavior of seeking emergency medical attention. The research was carried out in Pakis Urban Village, Surabaya City. The population in this study is the entire productive age community 18-59 years who live in Pakis Urban Village, Surabaya City. The research sample was determined using a probability sampling technique with a simple random sampling method, so that each population member has the same chance of being selected. The sample size used the Lemeshow Formula formula with a confidence level of 95% ($Z = 1.96$), a proportion of 0.5, and a margin of error of 7%, a minimum sample size of 196 respondents who met the inclusion and exclusion criteria.

The inclusion criteria include: (1) age 18–59 years, (2) able to read and write, (3) willing to become a respondent by signing an informed consent. Meanwhile, the exclusion criteria are respondents who have cognitive impairments or are unable to complete the questionnaire completely. Data collection was carried out through a structured questionnaire consisting of two parts, namely a questionnaire on the level of knowledge about the danger signs of a hypertensive crisis and a behavioral questionnaire on seeking emergency medical attention.

The knowledge level instrument was developed based on the latest literature related to the hypertension crisis and includes aspects of symptom recognition, risk factors, and initial actions that must be taken. Meanwhile, the help-seeking behavior instrument measures an individual's response in the face of an emergency, such as the decision to seek health care, response time, and the type of facility chosen. The validity test was conducted using Pearson's correlation and the reliability test used Cronbach's alpha with a value of ≥ 0.7 indicating that the instrument was feasible to use.

Data analysis was carried out in stages, including univariate analysis to describe the frequency distribution of respondent characteristics, knowledge level, and help-seeking behavior. Furthermore, bivariate analysis was carried out using the Chi-square test to determine the relationship between independent and dependent variables. Before the hypothesis test was carried out, an assumption test was carried out such as the normality and homogeneity test of data. The significance level used was $p < 0.05$. This study has received ethical approval from the Health Research Ethics Committee of STIKes William Booth Surabaya, Indonesia (Ethical Approval No. 0028/KEPK-STIKES-WB/2026). All participants provided written informed

consent prior to their participation in the study. Confidentiality, anonymity, and participants' rights were maintained throughout the research process.

RESULTS

Table 1. Characteristics of Respondents (n = 196)

Variable	Categories	n	%
Age	18–25 years old	52	26,5
	26–35 years old	61	31,1
	36–45 years old	45	23,0
	46–59 years old	38	19,4
Gender	Male	88	44,9
	Women	108	55,1
Education	Elementary/Junior High School	34	17,3
	High School	96	49,0
	College	66	33,7
Jobs	Not working	28	14,3
	Private	82	41,8
	Self-employed	54	27,6
	Others	32	16,3
History of Hypertension	Yes	58	29,6
	No	138	70,4

Most of the respondents were in the age group of 26–35 years (31.1%) with the majority being female (55.1%). The level of education was dominated by high school graduates (49.0%), and most worked in the private sector (41.8%). The majority of respondents had no history of hypertension (70.4%).

Table 2. Distribution of Knowledge Levels about the Danger Signs of Hypertension Crisis

Knowledge Level	n	%
Good	72	36,7
Enough	68	34,7
Less	56	28,6
Total	196	100

Most of the respondents had a good level of knowledge (36.7%), but there were still respondents with sufficient knowledge (34.7%) and lack (28.6%) which showed a gap in health literacy related to the hypertension crisis.

Table 3. Distribution of Emergency Medical Attention-Seeking Behavior

Behavior	n	%
Good	104	53,1
Less good	92	46,9
Total	196	100

More than half of the respondents showed good behavior in seeking medical attention (53.1%), but there were still 46.9% of respondents with inappropriate behavior in dealing with hypertensive emergencies.

Table 4. The Relationship of Knowledge Level with Emergency Medical Attention-Seeking Behavior

Knowledge Level	Good Behavior	Lacking Behavior	Total	<i>p-value</i>
Good	52	20	72	0,001
Enough	36	32	68	
Less	16	40	56	
Total	104	92	196	

The results of bivariate analysis using the Chi-square test showed a significant relationship between the level of knowledge and the behavior of seeking emergency medical help ($p = 0.001$). Respondents with a good level of knowledge tended to have more appropriate behaviors to seek help compared to respondents who had sufficient and less knowledge.

DISCUSSION

Level of Knowledge about the Danger Signs of a Hypertension Crisis

The results showed that most of the respondents had a good level of knowledge, but there was still a significant proportion with sufficient and insufficient knowledge. This shows that although health information is increasingly accessible, an in-depth understanding of emergency conditions such as hypertension crisis is not evenly distributed. This can be seen from the fact that there are still respondents who are not able to accurately recognize the danger signs of hypertension emergency conditions. This variation in knowledge level is an indicator that public health literacy still needs strengthening. Thus, these results confirm that increasing knowledge does not only depend on the availability of information, but also on the quality of individual understanding.

Research shows that the level of public knowledge about hypertension is still in the moderate to low category, especially in recognizing dangerous symptoms (Wolde et al., 2022). Other research also states that good knowledge is influenced by education level and exposure to health information through digital media (Jihada et al., 2019), (Ssali et al., 2023). The health behavioral theory also explains that knowledge is a predisposing factor that plays an important role in shaping individual behavior. Individuals with higher levels of education tend to have better abilities in critically understanding health information (Hafni, 2025; Kemenkes, 2023). However, exposure to unstructured or non needs based information can lead to gaps in understanding. Therefore, more targeted and contextual educational interventions are needed to improve the understanding of society as a whole.

According to the researchers, the presence of respondents with a low level of knowledge shows that health education related to the hypertension crisis has not been carried out optimally and evenly at the community level. The information currently available tends to be general and does not specifically emphasize the emergency aspect, so that the public does not understand the urgency of the condition. In addition, the educational approach used may not have taken into account the characteristics of productive age who have high mobility and limited time. The researcher argues that educational interventions need to be developed in a more contextual manner, for example through interactive digital media or community-based approaches. Education should also emphasize on the recognition of critical symptoms and quick actions

that must be taken. Thus, knowledge enhancement is expected to be not only cognitive, but also able to encourage more responsive behavioral changes in emergency situations.

Emergency Medical Aid Seeking Behavior

The results showed that more than half of the respondents had good medical attention-seeking behavior, but there were still almost half of the respondents with inappropriate behavior. This indicates that there is a gap between knowledge and practice in dealing with emergency conditions. The study stated that the behavior of seeking help is greatly influenced by the individual's perception of the severity of symptoms and previous experiences (Wahid, 2021). In addition, the factors of access to health services and social support also play an important role in determining the decision to seek help. Although some respondents showed good behavior, there were still obstacles such as delaying decisions and dependence on independent treatment. In addition, health behavioral theory explains that an individual's decision to seek health services is also influenced by supporting factors such as access to health facilities and social support from the family or surrounding environment (Eriksson et al., 2025). Individuals who have easy access to health services tend to be quicker in making decisions to seek help. Conversely, limited access and lack of social support can be barriers to decision-making. Research also shows that self-medication habits are still quite high in the community, which can slow down the handling of emergencies.

According to the researcher, the presence of respondents with inappropriate help-seeking behavior shows that the existing educational approach has not been fully effective in shaping community preparedness for emergency conditions. The education provided so far tends to focus on improving knowledge, but has not optimally touched on the aspects of attitudes, risk perception, and decision-making skills in emergency situations. The researcher argues that a more applicable approach, such as simulation or emergency response training, is needed so that people are better prepared to face real conditions. In addition, the use of digital media and community-based health campaigns can be an effective strategy to reach the productive age. Family and environmental support also needs to be strengthened as a driving factor in quick decision-making. Thus, comprehensive interventions are expected to improve more responsive and appropriate medical attention-seeking behavior.

The Relationship of Knowledge Level to Help-seeking Behavior

The results of the analysis showed a significant relationship between the level of knowledge and the behavior of seeking emergency medical attention ($p = 0.001$), where respondents with good knowledge tended to have more appropriate behaviors. These findings confirm that knowledge is an important factor in shaping individual health behaviors, especially in emergency situations. Previous research has shown that individuals with a high level of knowledge are more likely to take prompt and appropriate action in the face of emergencies (Kartika & Prajayanti, 2026). Health behavioral theory explains that knowledge is a predisposing factor that affects the formation of individual attitudes and behaviors (Hanifah et al., 2026). In addition, other studies have also found that health education interventions are significantly able to improve better health-seeking behaviors (Lyu et al., 2024). However, the theory also emphasizes that behavior is not only influenced by knowledge, but also by other

factors such as attitudes, beliefs, experiences, and the availability and access to health services. These supporting and reinforcing factors play a role in determining whether knowledge can be translated into real action.

According to the researchers, the significant relationship between knowledge and behavior in this study shows that education-based interventions have great potential in improving community preparedness for hypertension emergencies. However, researchers argue that increasing knowledge alone is not enough if it is not accompanied by strengthening aspects of attitudes, risk perceptions, and ease of access to health services. In practice, individuals often face obstacles such as doubt, limited facilities, or environmental influences in decision-making. Therefore, interventions must be multidimensional, including education, simulation of emergency measures, and increased access to health services. The researcher also emphasizes the importance of a community-based approach to strengthen social support in decision-making. Thus, it is hoped that the knowledge possessed can be truly implemented in fast, precise, and responsive behavior.

This study has several limitations. First, it employed a cross-sectional design; therefore, the relationship observed between knowledge regarding the warning signs of a hypertensive crisis and emergency help-seeking behavior cannot be interpreted as a causal relationship. Second, the study was conducted solely among the working-age population in Pakis Urban Village, Surabaya City, limiting the generalizability of the findings to populations with different social, cultural, and geographical characteristics. Third, data were collected using self-reported questionnaires, raising the possibility of response bias or social desirability bias, which could affect the accuracy of the respondents' answers.

CONCLUSION

This study found a significant relationship between knowledge of the warning signs of a hypertensive crisis and emergency help-seeking behavior among productive-age adults. Individuals with better knowledge tended to demonstrate more appropriate emergency help-seeking behavior, although a considerable proportion of respondents still had inadequate knowledge and inappropriate help-seeking behavior. These findings indicate that improving knowledge is an important step in promoting timely and appropriate responses to hypertensive emergencies.

Based on these findings, healthcare providers, particularly nurses and primary healthcare professionals, should strengthen community-based health education programs focusing on the early recognition of hypertensive crisis warning signs and the importance of seeking immediate medical care. Future research is recommended to develop and evaluate educational or technology-based interventions and to use longitudinal or experimental study designs to better understand the causal relationship between knowledge and emergency help-seeking behavior.

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CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this study. The research was conducted independently without any financial or commercial relationships that could be construed as a potential conflict of interest.

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