



## The Relationship between Coping Mechanisms and Anxiety Levels among Hypertensive Elderly in Rural Areas

Adhitya Restu Wahyuni<sup>1</sup>, Irwina Angelia Silvanasari<sup>1\*</sup>,  
Wahyi Sholehah Erdah Suswati<sup>1</sup>

<sup>1</sup> Faculty of Health Sciences,  
University of Dr. Soebandi,  
Indonesia

### Correspondence

Irwina Angelia Silvanasari  
Faculty of Health Sciences,  
University of Dr. Soebandi,  
Jl. DR. Soebandi No.99, Patrang,  
Jember, East Java 68111, Indonesia  
Email: [irwina.angelia@gmail.com](mailto:irwina.angelia@gmail.com)

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### ABSTRACT

**Background:** Hypertension is a prevalent condition among the elderly in rural areas. Anxiety in older adults with hypertension in these regions can significantly impact their blood pressure management, as it may hinder their adherence to medical treatment and healthy lifestyle practices. **Purpose:** This study aims to analyze the relationship between coping mechanisms and anxiety levels in elderly individuals with hypertension in rural areas. **Methods:** This quantitative study employs a cross-sectional approach. The population consisted of 198 elderly individuals, with a sample size of 132 elderly individuals with hypertension, selected using simple random sampling. The independent variable is the coping mechanism, and the dependent variable is the level of anxiety. Research instruments included the Coping Mechanism Questionnaire and the Hamilton Anxiety Rating Scale (HARS). Statistical analysis was conducted using the gamma test. **Results:** The findings indicate that the majority (59.1%) of participants utilized maladaptive coping mechanisms, while nearly half (41.7%) experienced severe anxiety. The gamma test revealed a P-value of  $0.000 \leq 0.05$ , with a contingency coefficient of -1.000, indicating a statistically significant and strongly negative relationship between coping mechanisms and anxiety levels in elderly individuals with hypertension. **Conclusions:** The study concludes that adaptive coping mechanisms are associated with lower anxiety levels in hypertensive elderly. Providing these individuals with information and counseling on effective coping mechanisms could help reduce anxiety and promote more adaptive coping strategies.

### KEYWORDS

Anxiety levels, Coping mechanisms, Elderly, Hypertension

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## 1. BACKGROUND

Life behavior in the elderly is influenced by economic instability and reduced physical endurance, social isolation, reduced cognitive abilities, dependency, and

loneliness. This makes them more vulnerable to suffering or succumbing to diseases that may be treatable, one of which is hypertension (Oliveros et al., 2020). Hypertension is a degenerative disease and

is also a major risk factor for other degenerative diseases ([Silvanasari et al., 2024](#)).

Hypertension is one of the diseases that elderly people in rural areas are susceptible to. This is because rural areas have unequal access to care and medicines and the quality of the health system is less comprehensive than urban areas. These factors also influence the psychology of the elderly, because the physical limitations experienced by the elderly often cause anxiety ([Zhang et al., 2021](#)). Anxiety in elderly people with hypertension in rural areas can have an impact on their blood pressure control, because it can affect their compliance with medical care and healthy lifestyles ([Wijaya et al., 2022](#)). Previous studies have not extensively explored the specific relationship between coping mechanisms and anxiety levels in elderly hypertensive patients in rural settings.

The prevalence of hypertension in the world has a fairly high number ([Kemenkes RI, 2018](#)). The prevalence of hypertension is quite high in Indonesia, including East Java Province ([Dinas Kesehatan Provinsi Jawa Timur, 2021](#)). One of the regencies in East Java Province is Situbondo Regency. The prevalence of hypertension in Situbondo Regency in 2019 reached 80.3%, namely

117,494 people ([Dinas Kesehatan Kabupaten Situbondo, 2020](#)). Arjasa District is a district that has an increased prevalence of elderly hypertension in Situbondo Regency. Data on the prevalence of elderly people with hypertension in Arjasa District in 2020 was found to be 6,294 people, in 2021 it increased to 7,999 people and in 2022 it increased again to 9,272 people ([Dinas Kesehatan Kabupaten Situbondo, 2020](#)). The results of a preliminary study from 3 villages and 6 Posyandu for the elderly, namely 2 Posyandu in Ketowan Village, 2 Posyandu in Kedungdowo Village, and 2 Posyandu in Bayeman Village, obtained data that 198 elderly people had a history of hypertension. Based on the results of interviews with 10 elderly people in rural areas, 70% of the elderly had hypertension with a blood pressure range of 160/90-170/100 mmHg and 30% of the elderly with a blood pressure range of 140/90-150/90 mmHg.

Several factors that cause anxiety include: age, experience, physical assets, knowledge, education, financial/material, medication, and social support. In the elderly, anxiety can also occur due to physical weakness, trauma and conflict. Instability in blood pressure causes elderly people to experience anxiety due to worrying about the condition of the disease

they are experiencing. This further worsens the condition of hypertension, resulting in more serious complications (Sijabat, 2020). The risk of serious health complications such as stroke, heart attack can increase and even lead to death. Unresolved anxiety can also contribute to decreased mental health. This can potentially reduce cognitive function and increase the risk of depression. Quality of life can be affected, as anxiety can affect sleep quality, appetite, and energy levels. Anxiety can also affect a person's ability to manage their hypertension. Anxiety can affect adherence to treatment plans and medication use, which can negatively impact blood pressure control. The impact of anxiety can ultimately also be felt in social relationships. Anxiety can affect relationships with family and friends, as well as the ability to participate in social activities (Swarjana, 2022).

The government has actually tried to deal with the problem of hypertension in the elderly through the elderly posyandu program. This policy is contained in Minister of Health Regulation Number 1575 of 2005 concerning the prevention and management of heart and blood vessel diseases including hypertension. The elderly posyandu program is a solution in reducing hypertension in the elderly, especially in

rural areas. This program helps elderly people lower their blood pressure routinely and periodically, so they can immediately detect changes in blood pressure and take action as quickly as possible to overcome them (Amalia et al., 2022). Education about hypertension is provided to increase knowledge about the characteristics of hypertension, how to prevent and treat hypertension, and other ways to manage anxiety. Posyandu for the elderly can also provide social support to elderly people who experience symptoms of anxiety, so that they do not feel alone (Kusuma et al., 2020). However, the elderly's response to anxiety due to hypertension varies depending on the coping mechanisms used.

Elderly people who have adaptive coping mechanisms will be able to solve problems well and avoid prolonged anxiety. Individual adaptive responses to anxiety make individuals focus on finding problem solutions to problems, while maladaptive responses actually make the situation worse (Ridwan et al., 2017). The worse the elderly's coping mechanisms for anxiety, the higher the risk of recurrence of hypertension. The better the elderly's coping mechanisms for anxiety caused by hypertension, accompanied by appropriate pharmacological management and healthy lifestyle

patterns will help the elderly control the stability of diseases caused by hypertension (Widya Sari et al., 2018). Therefore, this study aims to analyze whether there is a relationship between coping mechanisms and anxiety levels in elderly people with hypertension in rural areas.

## 2. METHODS

The research design used is quantitative research using a cross-sectional approach. The research was carried out in March 2024 in 3 villages, namely: Kedungdowo Village, Ketowan Village, and Bayeman Village, Arjasa District, Situbondo Regency. This area is included in the scope of rural areas. All elderly people who experienced hypertension were taken as a population of 198 respondents. The sample was taken as many as 132 respondents using the Slovin formula randomly. The inclusion criteria in this study were elderly people who were willing to be respondents, suffering from hypertension for at least the last 1 year, blood pressure measurement results of at least 140/90mmHg, hypertensive elderly people aged at least 60 years who lived in the working area of Ketowan Village, Kedungdowo Village, Bayeman Village. Meanwhile, elderly people who experienced hypertension complications and were

unable to manage hypertension independently were excluded respondents.

Measurement of independent variables using a coping mechanism questionnaire totaling 20 items with 3 indicators, namely problem-focused, cognitive and emotional coping mechanisms. (Rahmawati, 2016). The results of the Cronbach alpha test with a value of 0.806 indicate that the questionnaire is reliable. The dependent variable was measured using the Hamilton Anxiety Rating Scale (HARS) anxiety questionnaire consisting of 14 items with 14 indicators, namely: anxiety, tension, fear, sleep disorders, intelligence disorders, feelings of depression, somatic symptoms, sensory symptoms, cardiovascular symptoms, respiratory symptoms, digestive tract symptoms, urogenital symptoms, vegetative/autonomic symptoms, and during the interview. Anxiety levels were categorized as no anxiety (<14), with (14-20), moderate (21-27), severe (28-41), and very severe (>41). The HARS questionnaire is a standard instrument for measuring anxiety levels (Claresta, 2021).

Univariate analysis consisted of age, gender, employment status, education level, duration of suffering from hypertension, coping mechanisms and anxiety level. The

gamma test is used to analyze the relationship between independent and dependent variables. This research received ethical approval at Health Research Ethics Committee (KEPK) University of Dr. Soebandi with number: 102/KEPK/UDS/II/2024 dated 07 February 2024. Informed consent was obtained before data collection. The elderly person signs the informed consent sheet. Researchers also pay attention to ethical principles such as anonymity, confidentiality, and providing souvenirs or inducements to respondents

for their participation. Data about respondents are only stored by researchers to maintain the confidentiality of respondents.

### 3. RESULTS

Univariate analysis looks at the dependent and independent variables and then produces the distribution and percentage of each variable, while bivariate analysis is carried out to see the relationship between the dependent and independent variables.

**Table 1.** Distribution of respondent characteristics

Respondent characteristics	Frequency (f)	Percentage (%)
Gender		
Man	13	9,8%
Woman	119	90,2%
Age		
60-70 year	98	74,2%
71-80 year	22	16,9%
>80 year	12	9,1%
Education		
Elementary school	38	28,8%
Secondary school	19	14,4%
High school	7	5,3%
College	0	0 %
No school	68	51,1%
The family has been taking care of him all this time		
Husband	31	23,5%
Wife	57	43,2%
Child	44	33,3%
Income based on Regional minimum wage of Situbondo in 2023 (in rupiah)		
< 2.172.287	87	66%
≥ 2.172.287	45	34%
Suffering from hypertension for a long time		
≥ 3 years	78	59%
< 3 years	54	41%
<b>Total</b>	<b>132</b>	<b>100%</b>

Table 1 explains that of the 132 respondents whose gender was known, almost all were female, 119 respondents (90.2%), most of whom were in the 60-70 years age range, 98 respondents (74.2%). The majority of respondents' education was non-school, 68 respondents (51.5%), almost

half of the families who cared for the respondents were wives, 57 respondents (43.2%), the income of most respondents was < minimum wage, 87 (66%), and the duration of suffering from hypertension was mostly  $\geq 3$  years, 78 respondents (59%).

**Table 2.** Research variables on coping mechanisms and anxiety levels in elderly people with hypertension in rural areas

Variable	Frequency (f)	Percentage (%)
Coping mechanism		
Maladaptive	78	59,1%
Adaptive	54	40,9%
Anxiety level		
No anxiety	26	19,7%
Mild anxiety	28	21,2%
Moderate anxiety	6	4,5%
Severe anxiety	55	41,7%
Very heavy anxiety	17	12,9%
Total	132	100%

Based on table 2 above, it can be seen that the majority of respondents with maladaptive coping mechanisms were 78

respondents (59.1%) and almost half of the respondents with severe anxiety levels were 55 (41.7%).

**Table 3.** Analysis of the relationship between coping mechanisms and anxiety levels in elderly people with hypertension in rural areas

Coping mechanism	Anxiety level					Total	P value	Correlation coefficient
	No anxiety	Mild anxiety	Moderate anxiety	Severe anxiety	Very heavy anxiety			
Maladaptive	0 (0)	0 (0)	6 (4,5)	55 (41,6)	17 (12,8)	78 (59,1)	0,000	-1,000
Adaptive	26 (19,6)	28 (21,2)	0 (0)	0 (0)	0 (0)	54 (40,9)		
Total	26 (19,6)	28 (21,2)	6 (4,5)	55 (41,6)	17 (12,8)	132 (100)		

#### 4. DISCUSSION

##### Coping mechanisms in elderly people with hypertension in rural areas

The results of research on coping mechanisms were maladaptive in the

majority of 78 respondents (59.1%). Maladaptive coping mechanisms indicate that the coping that occurs in the elderly is: lack of ability to solve problems, lack of thinking about problems that occur, lack of



ability to control emotions when experiencing problems and no problem-focused coping, cognitive-focused coping, emotional-focused coping. Elderly people with hypertension are not confident in their own abilities, and feel depressed and characterized by feelings of sadness.

90.2% of elderly people with hypertension were female. Individual gender differences can influence the coping mechanisms used. The elderly women in this study mostly used maladaptive coping mechanisms. Women are naturally more sensitive and often feel more anxious about their incompetence than men (Lutviana et al., 2017). Women focus more on emotions by seeking social support to help them overcome problems (Swarjana, 2022). This is different from men who are more active and explorative and focus on solving problems (Pabebang et al., 2022).

Researchers are of the opinion that there are differences in strategies for solving problems which cause women to be more inclined to maladaptive coping. Men emphasize their emotions more and are more open in dealing with the problems they face, while women, when facing problems, emphasize their weakness, emotions, sadness and crying. Efforts to increase understanding of coping mechanisms in

elderly people with hypertension in rural areas include providing education and information, social support, promoting healthy lifestyles, access to health and encouraging the development of positive and adaptive coping strategies, such as providing relaxation and meditation so as to help elderly people deal with anxiety and maintain the welfare of elderly people in rural areas.

### **Anxiety levels in elderly people with hypertension in rural areas**

The level of severe anxiety among hypertensive elderly suffered by respondents was almost half, namely 41.7%. The elderly said that when they are anxious, what the elderly feel is that their blood pressure rises, there is muscle tension, an increase in pulse rate, trembling fingers, a pounding heart, not being able to rest peacefully, difficulty sleeping, restlessness, loss of interest, no support so they feel helpless, feeling anxious and depressed so they are not sure about themselves and cannot control their own feelings that they are currently experiencing.

There are health conditions that interfere with the lives of the elderly, in this case hypertension is psychologically a threat. Elderly people feel excessive anxiety,

characterized by the emergence of tension, worry, fear accompanied by physiological changes such as tachycardia, increased breathing and increased blood pressure. This has the potential to worsen your hypertension. Anxiety appears as a vague and widespread feeling of worry, threat associated with feelings of uncertainty, giving rise to a feeling of helplessness, without a clear object. Excessive anxiety has the potential to worsen health conditions (Stuart, 2016). Research shows that high levels of anxiety can increase the risk of hypertension (Pramana et al., 2016).

In the context of this research, the possible cause of severe anxiety experienced by the elderly is due to educational factors. More than half of the respondents in this study did not attend school (51.1%). Individuals with low education find it difficult to control health problems due to a lack of knowledge about health. The level of education influences the way individuals deal with hypertension and a lack of understanding about health can result in a mindset that is less effective in responding to health problems (Suciana et al., 2020). A low level of education has an impact on low motivation and awareness to prevent hypertension.

Researchers are of the opinion that education can have an impact on the lack of knowledge regarding coping mechanisms and anxiety levels. Based on the research results, the highest level of education was that they did not go to school, so that elderly people with hypertension certainly lack a good understanding of how to deal with anxiety levels and determine appropriate coping mechanisms to overcome this.

### **The relationship between coping mechanisms and anxiety levels in elderly people with hypertension in rural areas**

The research results showed that there was a relationship between coping mechanisms and the level of anxiety in elderly people with hypertension, which was interpreted to mean that the strength of the relationship was very strong, with a negative correlation, which means the two variables had an opposite or conflicting relationship. Maladaptive coping mechanisms indicate that the coping that occurs in the elderly is: lack of ability to solve problems, lack of thinking about problems that occur, lack of ability to control emotions when experiencing problems and no coping focused on the problem, cognitively focused coping, emotional focused coping so that one is unsure of one's own abilities, and



feeling depressed and characterized by feelings of sadness. If the coping mechanism is adaptive then the level of anxiety is low.

The way individuals deal with anxiety or coping mechanisms is closely related to the level of anxiety they experience. When someone experiences stress or anxiety, the body will respond with different coping mechanisms, for example, the autonomic nervous system will be involved in regulating the body's response to stress, including increasing heart rate and blood pressure. In elderly people with hypertension, ineffective or less than optimal coping mechanisms can cause disruption to the cardiovascular system, increase the risk of hypertension complications, and worsen anxiety levels ([Jubaedah & Pratiwi, 2022](#)).

Environmental conditions in rural areas can also influence the relationship between coping mechanisms and anxiety in the elderly. Limited access to adequate health services, lack of social support and unsupportive physical environmental conditions can be additional risk factors that worsen anxiety in hypertensive elderly people. Coping mechanisms are defined as the ways in which individuals mobilize both thoughts and behavior to manage the internal and external stressful situations they are facing.

The level of anxiety is influenced by each individual's coping abilities (Stuart, 2016). Adaptive coping mechanisms make patients superior in a stable environment directing patients to behave constructively (proactively) in dealing with stressors and anxiety. Adaptive coping mechanisms can deal with stress or pressure in a positive and constructive way, thereby helping to reduce anxiety levels and improve overall well-being. Adaptive coping mechanisms may involve balanced activation of the autonomic nervous system, such as increased parasympathetic activity and decreased sympathetic activity. In this way, the body's response to anxiety becomes more controlled and not excessive, reducing the risk of increased blood pressure and other health complications in elderly people with hypertension ([Rani & Darmiati, 2022](#)). Adaptive coping mechanisms also involve the use of healthy cognitive strategies, such as a realistic understanding of stressful situations, the ability to identify and manage emotions well, and the ability to seek appropriate social support and resources. By using these adaptive coping mechanisms, seniors can reduce anxiety levels, increase their sense of control over their health conditions, and improve their overall quality of life ([Jubaedah & Pratiwi, 2022](#)).

Researchers believe that the relationship between coping mechanisms and anxiety in hypertensive elderly people needs attention from health workers. The coping abilities of hypertensive elderly people influence their actions in managing their hypertension disease. If the coping used is maladaptive, the elderly's anxiety about their illness becomes more severe because self-care for hypertension is neglected. Challenges in rural areas such as limited access to health services and lack of social support exacerbate anxiety levels. Adaptive coping skills make sufferers not feel worried or anxious about their hypertension because they are able to handle it.

The implication of this study is that the Community Health Center that has a working area in each rural area should be able to improve the ability of adaptive coping mechanisms in elderly hypertensive patients. Skill training such as relaxation and meditation techniques can be taught by involving existing health cadres.

The weaknesses and limitations of this research can be attributed to the sample size taken, which was in one of the many rural areas in Situbondo Regency. Another limitation is that this study did not include other confounding variables, because there

are still factors other than coping mechanisms that cause or influence anxiety. The cross-sectional research method is actually capable of testing the relationship between two variables, but it would be better to use other methods.

## 5. CONCLUSION

Most of the coping mechanisms are maladaptive and almost half are at the level of severe anxiety. There is a relationship between coping mechanisms and anxiety levels in elderly people with hypertension in rural areas. If the coping mechanism is adaptive then the level of anxiety goes down. Health workers in rural areas are expected to be more effective in providing information regarding the disease they suffer from and providing counseling so that they can reduce anxiety levels and provide education about hypertension so that elderly people with hypertension can have adaptive coping mechanisms.

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### **AUTHOR CONTRIBUTIONS**

Substantial contributions to conception, data collection, analysis: Adhitya Restu Wahyuni, Irwina Angelia Silvanasari, and Wahyi Sholehah Erdah Suswati. writing, and manuscript revisions: Adhitya Restu Wahyuni, and Irwina Angelia Silvanasari.

### **CONFLICT OF INTEREST**

There is no conflict of interest in this research.

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### **DATA AVAILABILITY**

Data is private and not available to the public for privacy protection and ethical reasons.

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