The Relationship between Hypertension and Anxiety Level in the Elderly in Mandungan Srimatani Sub-district Piyungan Bantul Regency Yogyakarta

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CROSS SECTIONAL STUDY

Abstract

Background: Hypertension is still a problem for the elderly, the changes experienced by the elderly will experience a lot of decline both physically, mentally, and socially. As an age that shows the aging process this condition makes high blood pressure one of the health problems for the elderly. A person is said to have hypertension with systolic and diastolic blood pressure of 140/90 mmHg. Hypertension is often found in the elderly, the physical limitations experienced by the elderly will experience anxiety because the various diseases suffered do not go away and even get worse in the end experiencing psychological disorders, namely anxiety, which is characterised by deep and continuous fear and worry. Purpose: To determine the relationship between hypertension and anxiety levels in the elderly in mandungan hamlet, srimartani, piyungan sub-district, bantul rencency, Yogyakarta. Methods: This research is non-experimental with a correlation study using a cross sectional approach, and a sample size of 39 respondents aged 60-80 years. Results: Data that have been analysed using the Kendall-Tau test obtained a correlation coefficient value of 0.483** and a significant value of 0.001 <0.005. Conclusion: There is a relationship between hypertension and anxiety level in mandungan srimartani hamlet, piyungan sub-district, bantul regency Yogyakarta.

Keywords: hypertension, anxiety level, elderly

Introduction

According to the world health organisation (WHO), about 1.5 billion people in the world suffer from hypertension, it is estimated that by 2025 it will be 1.13 billion people affected by hypertension. The number of hypertension in the world increases every year, the world health organization (WHO) sets the age of 65 years as an age that shows the aging process and experiences hypertension, which is estimated to be 2.3% of women and 14% of men over the age of 65 have hypertension.

Elderly is the peak of the human life span, through the aging that occurs naturally in every individual. The elderly will experience a lot of decline, be it physical, mental, and social. The elderly around the world in 2013 were assumed to be 7.2%, in 2050 it is estimated that the presentation will reach 9.6%, from the entire world population the percentage will continue to increase every year.
Meanwhile, in Southeast Asia, nearly 1.5 million people died due to hypertension, this condition makes high blood pressure one of the highest factors causing death.¹⁰²⁷

Indonesia as one of the developing countries is also inseparable from health problems, based on Riskesdas 2018 data, the prevalence of hypertension is 25.8%, with an estimated 15 million people suffering from hypertension. The prevalence of hypertension in Indonesia will increase with age, namely the prevalence with the age group 55-64 years of 45.9%, age 65-74 years of 57.6% and age group >75 years of 63.85.²⁸

Yogyakarta Special Region (DIY) is one of the provinces that ranks 14th in Indonesia, with a prevalence of hypertension of 25.7% reported in the integrated surveillance system of the DIY health office, the elderly age 60-64 years will increase the risk of hypertension by 2.18 times, age 65-69 years by 2.45 and age over 70 years by 2.97 times. Along with increasing age, the risk of developing hypertension is greater so that the prevalence among the elderly is quite high, which is around 40% with a mortality of around 50% over the age of 60 years.¹⁴

Bantul Regency has hypertension disease in second place, in the top ten, which is 37,692 people. Based on blood pressure measurement data, in Bantul Regency there are 2,828 people and there are 334 people suffering from hypertension or around 11.8% (Yulita Sari et al., 2021). Hypertensive disease is classified as high based on data from the Bantul Health Office 2020. Elderly visits at Puskesmas Piyungan, Bantul Regency are 2,913 elderly people.

Based on data from the 2017 National Economic Census of the Central Statistics Agency (BPS), the number of elderly people in Indonesia was 23.4 million, 8.97%. In 2015 it is estimated to reach 33.7 million 11.8% and it is estimated that in 2035 the percentage will be 48.2 million of the total population 15.8%. While the percentage of the elderly population in Yogyakarta is 13.5%, Yogyakarta is an area in Indonesia that is entering the era of an aging structured population, this is due to the very high percentage of the elderly population compared to other provinces, which is 12.96% of the total population of 3.6 million.⁷¹⁰³³

Anxiety is characterised by physical symptoms, namely anxiety, trembling limbs, sweating a lot, difficulty breathing, heart beats fast, irritable and offended, according to Praman et al (2016) in the journal²⁸ suggesting several factors that affect anxiety, namely age, gender, and education.

The mental unpreparedness of the elderly in dealing with changes will trigger an attitude of hopelessness, feeling lonely, and not being valued. If you cannot adapt to changes, it will cause mood disorders such as worry, excessive fear and anxiety. The prevalence of anxiety disorders in the elderly is 5.5%, the most common anxiety disorder is phobia, namely 4-8% of anxiety disorders starting in early or middle adulthood, some of which appear for the first time after the age of 60 years.⁶

**Maerial and Method**

The research used in this study is non-experimental research with a correlation study design, namely research that examines the relationship between
variables with the aim of revealing the correlative relationship between variables. While the method used is a cross sectional approach. The sampling technique in this study was total sampling of 39 elderly people who had a history of hypertension in Mandungan Hamlet, Srimartani, Piyungan District, Bantul Regency, Yogyakarta.

The research instrument used was hypertension using blood pressure measurement, namely a needle tensimeter in mmHg units with a sitting position on the left arm. Anxiety level questionnaire using a standardised questionnaire, namely HARS (Hamilton Anxiety Scale). This section respondents choose the answers that have been provided in the column of each question. Anxiety level questions were 14 items with outcome criteria. No anxiety score <6, mild anxiety 6-14, moderate anxiety 15-27 and severe anxiety >27.

**Result**

**Table 1 Characteristics of respondents**

<table>
<thead>
<tr>
<th>No</th>
<th>Age</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>66-65</td>
<td>19</td>
<td>48.7%</td>
</tr>
<tr>
<td></td>
<td>66-70</td>
<td>12</td>
<td>30.8%</td>
</tr>
<tr>
<td></td>
<td>71-75</td>
<td>5</td>
<td>12.8%</td>
</tr>
<tr>
<td></td>
<td>76-80</td>
<td>3</td>
<td>7.7%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>39</td>
<td>100%</td>
</tr>
<tr>
<td>2</td>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>18</td>
<td>46.2%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>21</td>
<td>53.8%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>39</td>
<td>100%</td>
</tr>
<tr>
<td>3</td>
<td>Employment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Already Working</td>
<td>18</td>
<td>46.2%</td>
</tr>
<tr>
<td></td>
<td>Not Employed</td>
<td>21</td>
<td>53.8%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>39</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Data Primer, 2022

Based on table 1 of the characteristics of elderly age, the age range of 60-65 years is 19 respondents with a percentage of 48.7%, the age range of 66-70 years is 12 respondents with a percentage of 30.8%, the age range of 71-75 years is 5 respondents with a percentage of 12.8%, the age range of 76-80 years is 3 respondents with a percentage of 7.7%. This shows that the majority of respondents are 60-65 years old, totalling 19 respondents. Gender characteristics. The most common gender is female, namely 21 respondents with a percentage of 52.8%. While men were 18 respondents with a percentage of 46.2%. This shows that the majority of respondents are female. Based on job characteristics. Working as many as 18 respondents with a percentage of 46.2%, while those who did not work were 21 respondents with a percentage of 53.8%. This shows that the majority of respondents do not work.

**Table 2 Univariate Analysis of Frequency Distribution of Hypertension in the Elderly**

<table>
<thead>
<tr>
<th>Hypertension</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>3</td>
<td>7.7%</td>
</tr>
<tr>
<td>Currently</td>
<td>13</td>
<td>33.3%</td>
</tr>
<tr>
<td>Heavy</td>
<td>18</td>
<td>46.2%</td>
</tr>
<tr>
<td>Very Heavy</td>
<td>5</td>
<td>12.8%</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Data Primer, 2022

Based on table 2, it was found that hypertension in Mandungan Srimartani Hamlet, Piyungan Subdistrict, Bantul Regency Yogyakarta, the majority was in the severe category, namely 18 respondents (46.2%).

**Table 3 Cross Tabulation Analysis of Hypertension with Anxiety Level in the Elderly**

<table>
<thead>
<tr>
<th>Anxiety Level</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>5</td>
<td>12.8%</td>
</tr>
<tr>
<td>Currently</td>
<td>28</td>
<td>71.8%</td>
</tr>
<tr>
<td>Heavy</td>
<td>6</td>
<td>15.4%</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Data Primer, 2022
Based on table 3, it can be seen that respondents who have mild anxiety levels with mild hypertension are 1 (33.3%) respondents, moderate anxiety levels with mild hypertension are 2 (66.7%) respondents, severe anxiety levels with mild hypertension are 0 (0.0%). The level of mild anxiety with moderate hypertension was 4 (30.8%) respondents, the level of moderate anxiety with moderate hypertension was 9 (69.2%) respondents, the level of severe anxiety with moderate hypertension was 0 (0.0%). Mild anxiety level with severe hypertension was 0 (0.0%), moderate anxiety level with severe hypertension was 14 (77.8%), severe anxiety level with severe hypertension was 4 (22.2%). The level of mild anxiety with very severe hypertension was 0 (0.0%) respondents, the level of moderate anxiety with very severe hypertension was 3 (60.0%) respondents, the level of severe anxiety with very severe hypertension was 2 (40.0%) respondents.

Table 4 Bivariate analysis of Kendall Tau correlation between hypertension and anxiety level

<table>
<thead>
<tr>
<th>Variable</th>
<th>Correlation coefficient</th>
<th>Sig Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>.483**</td>
<td>.001</td>
</tr>
<tr>
<td>Anxiety Level</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Data Primer, 2022

Discussion
Hypertension in the elderly in Mandungan Srimartani Hamlet, Piyungan District, Bantul Regency Yogyakarta

Based on table 2, it was found that hypertension in Mandungan Hamlet, Srimartani, Piyungan District, Bantul Regency Yogyakarta, the majority was in the severe category, namely 18 respondents (46.2%). Based on these results, it shows that the majority of elderly people in Mandungan Hamlet experience severe hypertension.

According to¹² Hypertension is an increase in blood pressure from systemic arteries that lasts continuously and occurs over a long period of time. Hypertension is a condition when the systolic pressure value is higher than 140 mmHg or the diastolic pressure value is higher than 90 mmHg.

This is in line with research³ Hypertension is often referred to as a silent killer, because it is a deadly disease without being accompanied by symptoms as a warning to its victims. The cause of hypertension in the elderly is due to changes in the elasticity of the aortic wall.
decreases, heart valves thicken and become stiff, the ability of the heart to pump blood decreases, so that its contractions and volume also decrease, loss of elasticity of blood vessels due to less effective peripheral blood vessels for oxygen, increased blood pressure and blood pressure.

This study is also supported by previous research, namely\textsuperscript{23} The course of hypertension is very slow in people with hypertension may not show symptoms for years. The period of development masks the development of the disease until organ damage occurs. If there are symptoms, they are usually non-specific, such as headaches or dizziness, if hypertension remains unknown and untreated it will result in death due to heart disease, infarction, stroke, or renal failure peripheral vascular resistance. This study is also supported by previous research, namely\textsuperscript{23} The course of hypertension is very slow in people with hypertension may not show symptoms for years. The period of development masks the development of the disease until organ damage occurs. If there are symptoms, they are usually non-specific, such as headaches or dizziness, if hypertension remains unknown and untreated it will result in death due to heart disease, infarction, stroke, or renal failure peripheral vascular resistance.

From the results of research conducted by researchers, most of the elderly experienced mild hypertension as many as 3 respondents (7.7%), experienced moderate hypertension as many as 13 respondents (33.3%), experienced severe hypertension as many as 18 respondents (46.2%), experienced very severe hypertension 5 respondents (12.8%). This shows that the elderly in Mandungga Hamlet, Srimartani, Piyungan District, Bantul Regency, Yogyakarta experience severe hypertension.

The results of the analysis based on table 1 show that most of the respondents aged 60-65 years were 19 respondents (48.7%), aged 66-70 years were 12 respondents (30.8%), aged 71-75 years were 5 respondents (12.8%), aged 76-80 years were 3 respondents (7.7%).

According to research\textsuperscript{2} proves that the higher a person's age, the higher his blood pressure. The older a person's age, there will be a lot of decline in organ work. The high rate of hypertension in line with age, caused by structural changes in large blood vessels, so that the lumen becomes narrower and the walls of the blood vessels become more rigid, as a result of increased systolic blood pressure, with increasing age obtained an increase in diastolic blood pressure.

The results of the analysis based on table 1 show that most of the respondents according to gender. Male gender was 18 respondents (46.2%), female gender was 21 respondents (53.8%). According to (1005) states that hormonal changes that often occur in women are more likely to have high blood pressure. In relation to hypertension, men have a higher risk of developing hypertension early, while women are more susceptible to hypertension when they are over 50 years old. After menopause, women generally have higher blood pressure than before. Women who are not yet menopausal are protected by the hormone oestrogen which plays a role in increasing HDL levels. Low levels of HDL (High Density Lipoprotein) cholesterol and high levels of LDL (Low
Density Lipoprotein) cholesterol influence the atherosclerosis process and result in high blood pressure.

The results of the analysis based on table 1 show based on work. Working as many as 18 respondents (46.2%), not working as many as 21 respondents (53.8%). At the level of low-income groups have a higher increased risk of hypertension, compared to high-income groups. that countries with low and middle income show significant results for the occurrence of hypertension, Hypertension is one of them caused by modern lifestyle factors, people today are busy prioritising work to achieve success. Busyness and hard work and tough goals result in a sense of stress and cause high pressure.¹¹

Anxiety levels in the elderly in Mandungan Srimartani Hamlet, Piyungan District, Bantul Regency Yogyakarta

Based on table 3, it can be seen that the level of anxiety in Mandungan Srimartani Hamlet, Piyungan District, Bantul Regency, Yogyakarta is in the moderate anxiety category, namely 28 respondents 71.8%.

According to research²⁴ Anxiety in the elderly is caused by difficulty sleeping or resting, nervousness or restlessness, frequent shaking, disappointment and worry, often feeling anxious when there is a small problem, anxiety during activities, often being alone, easily anxious/worried and feeling uncomfortable. Anxiety is a psychological disorder, where someone with anxiety disorder will have characteristics such as recurrent fear or worry, which in turn can cause fear. This is in line with research²⁵ Anxiety is a vague and diffuse concern, which is related to feelings of uncertainty and helplessness with an emotional state that has no object. Anxiety is generally subjective in nature which is characterised by a feeling of tension, worry, fear and accompanied by physiological changes, such as pulse rate, changes in breathing and blood pressure. Anxiety is a disorder of the emotional realm characterised by deep and sustained feelings of fear or apprehension, not impaired in judging reality, personality still remains intact, personality can be disturbed by normal limits.

This research is also supported by²³ elderly people who experience anxiety cause an increase in blood pressure. Anxiety is a vague and diffuse concern related to feelings of uncertainty and helplessness. This emotional state has no specific object. Anxiety is experienced subjectively and communicated interpersonally. Symptoms of anxiety experienced by the elderly are irrational feelings of worry / fear of events that will occur, difficulty sleeping, feeling tense and irritable, often complaining of mild symptoms or fear and worry about severe illness and often imagining frightening things / panic about big problems. Anxiety experienced by the elderly can also cause an increase in blood pressure and can affect concentration and alertness, and also increase health risks, and can damage immune system function.

Relationship between Hypertension and Anxiety Level in the Elderly in Mandungan Hamlet Srimartani Piyungan District Bantul Regency Yogyakarta
Table 4 on the relationship between hypertension and anxiety level shows that the elderly in Mandungan Hamlet Srimartani Piyungan District, Bantul Regency Yogyakarta. It can be seen that most (46.2%) respondents with severe hypertension were 18 people, while most respondents (71.8%) respondents with moderate anxiety levels were 28 people. Based on the results of research conducted in Mandungan Srimartani Hamlet, Piyungan District, Bantul Regency Yogyakarta. The data that has been analysed using the Kendall-Tau correlation test obtained a correlation coefficient value of 0.483** and a significant value of 0.001 <0.005 which means Ho is rejected Ha is accepted, meaning that there is a relationship between hypertension and anxiety levels in the elderly in Mandungan Srimartani Hamlet, Piyungan District, Bantul Regency Yogyakarta. This means that the higher the hypertension, the higher the anxiety.

This is in line with research¹⁰ In the elderly, psychological and physical abilities begin to be disrupted along with a decrease in the ability of the immune system and fulfilment of physiological needs so that they may experience health problems, one of which is hypertension. These changes also result in a decrease in the digestive system, nervous system, respiratory system, endocrine system, cardiovascular system, and decreased musculoskeletal abilities. Hypertension experienced by each individual certainly has many factors. For example, age, gender, heredity (genetic), and ethnicity are risk factors for hypertension that cannot be changed. Whereas smoking, obesity, stress, physical exercise, salt (sodium) intake, carbohydrate and fat consumption levels in hypertension, alcohol consumption and fibre consumption levels are modifiable risk factors for hypertension.

This is also supported by research⁴ which states that hypertension is an asymptomatic disease that causes sudden death. This situation will worry the sufferers so that blood pressure will increase quickly and without realising the symptoms. Symptoms are found when someone shows symptoms of anxiety suddenly after someone finds out that they have hypertension. Fear, anxiety, and worry are feelings that arise due to a person not knowing for sure about his illness and how to handle it. After a person learns that he has hypertension, at that time he also experiences anxiety and thinks worse about his illness because it becomes a very important burden in his health problems. Many things are thought about especially something bad will happen to him so that anxiety arises as a result of not knowing about his illness and how to fight it.

This is also reinforced by research²³ stating that anxiety often increases pressure which can also cause a feeling of anxiety. Depression and anxiety have a relationship with the incidence of hypertension in a person, this factor is due to autonomic nerves that respond to the vagueness of non-specific threats that are often found and are often a normal emotion.

The mechanism that controls the constriction and relaxation of blood vessels is located in the vasomotor centre, in the medulla in the brain. From this vasomotor centre starts the sympathetic nerve pathway, which continues down the spinal cord and out of the spinal cord column into the sympathetic ganglia. At this point, the
preganglion neurons release acetylcholine, which stimulates the post ganglion nerve fibres to the blood vessels, where the release of norepinephrine results in blood vessel constriction. Various factors such as anxiety and fear affect the vascular response to vasoconstrictor stimuli. Individuals with hypertension are particularly sensitive to norepinephrine, although it is not clear why this is the case.

A person who has suffered from hypertension for a long time may become anxious because hypertension tends to require relatively long treatment, there is a risk of complications and can shorten life. High blood pressure if not treated or treated, in the long run will damage blood vessels throughout the body, complications that can be caused by hypertension are stroke, diabetic retinopathy, kidney damage, kidney failure and coronary heart disease.²⁵

Conclusions
The results of the Kendall-Tau correlation test obtained a correlation coefficient value of 0.483** and a significant value of 0.001 <0.005 which means that Ho is rejected, Ha is accepted, meaning that there is a relationship between hypertension and anxiety levels in the elderly in Mandungan Hamlet Srimartani Piyungan District Bantul Regency Yogyakarta. This means that the higher the hypertension, the higher the anxiety.

Acknowledgement
Thanks to the elderly in Mandungan Hamlet Srimartani Piyungan District Bantul Regency Yogyakarta who have given permission and the opportunity to conduct research and LPPM STIKes Surya Global who have provided support and thanks to respondents who are willing to be samples in this study.

References


