CORRELATION OF STRESS LEVEL WITH HYPERTENSION IN THE ELDERLY

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Abstract

Stress is one of the factors of hypertension. Stress can cause blood pressure to increase intermittently through sympathetic nerve activity. It can cause hypertension. Purpose: the research aims to determine the correlation between stress levels and the incidence of hypertension in the elderly in the working area in Sukra Health Service Center, Indramayu. This research is quantitative research with a correlational. A sample of 95 elderly was determined using a simple random sampling technique. The instruments in this study were the part of depression anxiety stress scale (DASS 42) questionnaire and the sphygmomanometer. Univariate analysis in this study describes the level of stress and the incidence of hypertension in the elderly. Bivariate analysis in this study is the relationship between stress levels and the incidence of hypertension in the elderly. The data were analyzed using the Pearson chi-square test. The results of this study indicate that respondents who do not experience stress or are expected are 88 (92.6%), while respondents who have hypertension are 50 (52.6%). The bivariate analysis showed p-value = 0.080 (α = 0.05). The conclusion is that there is no relationship between stress levels and the incidence of hypertension in the elderly. Suggestions for health services to improve health services for the elderly such as health centers for the elderly so that hypertension in the elderly can be controlled.

Keywords: Hypertension, Elderly, Stress

Introduction

One indicator of the success of the nation's development, especially in the health sector, is the increase in Life Expectancy (UHH); the longer life expectancy of the population characterizes a healthy nation. The number of older adults globally continues to increase (Badan Pusat Statistik, 2020). Stress is the body's reaction or response to psychosocial stressors (Sunaryo, 2014). Stress in the elderly is influenced by two factors, internal and external factors. Internal factors come from oneself, for example, because of conflicts and diseases suffered by the elderly, while external factors come from not from oneself, for instance, family and environment (Puspasari & Septika, 2017).

Old age is the ability to adapt to various changes and life events that bring about changes, but some of them cannot be done by all the elderly; high-stress levels indicate the inability of the elderly to adapt to these changes (Indiana et al., 2010). The World Health Organization (WHO) data shows that 450 million people experience stress or mental disorders (WHO, 2012). According to the Central Statistics Agency (2012), the prevalence of anxiety in Indonesia based on the information center for Non-Communicable Diseases, the elderly who experience anxiety is 4.89% (Kemenkes RI, 2012).

Stress can cause blood pressure to increase intermittently through sympathetic nerve activity, which can cause hypertension. When stressed, blood pressure and heart rate will increase through the contraction of the arteries (vasocontraction). If stress lasts long, blood pressure will remain high, so the person experiences hypertension (South et al., 2014). Hypertension is persistently high blood pressure where the systolic pressure will increase with a systolic value > 140 mmHg and a diastolic pressure > 90 mmHg (Brunner & Suddarth, 2015). The causes of hypertension are divided into primary and secondary (Udjianti, 2013). Primary or essential hypertension is hypertension in which the increase in blood pressure has no known cause that occurs suddenly (idiopathic). Secondary hypertension is also 90% of all cases, but there are risk factors for hypertension, which are divided into

two: factors that can be changed and factors that cannot be changed. Modifiable factors include stress, nutrition, substance abuse, and obesity. At the same time, the risk factors that cannot be changed include age, gender, ethnicity, and family history (Black & Hawks, 2014).

Based on the results of a preliminary study conducted by researchers on February 16, 2022, in the working area of the Sukra Public Health Center, Indramayu Regency, data on the elderly in 2020 were 1987 elderly (Sukra District Village Hall Office, 2020). Until now, researchers have not found the results of research or assessment of stress levels in the elderly in the work area of the Sukra Health Center, Indramayu Regency. So, this study aims to know the correlation between stress levels and hypertension.

Methods

This study is a correlational study using the Pearson correlation test approach, which aims to analyze the correlation between stress levels and hypertension in the elderly. The population in this study consists of all older adults aged 60 years and over who are in the working area of the Sukra Health Center, Indramayu Regency. The sampling technique uses simple random sampling technology and a large sample of 95 respondents. The inclusion criteria of respondents are older adults over 60 years old, have hypertension grade I to III, and do not experience severe mental disorders.

Data collection was carried out using instruments in this study on stress level variables using the part of depression anxiety stress scale (DASS 42) questionnaire sheets which measure only stress; it had been tested for validity and reliability by Abdullah and Amrullah (2014) on 20 elderly respondents with hypertension in the working area of Puskesmas Kedungwuni 1 Pekalongan Regency. The validity test results show that the r-value of the effects of 42 statements is above the table r value (r=0.444), so the 42 statements are valid. In contrast, the reliability test results show that the alpha Cronbach value (0.976) is above the constant value (0.6), so the the part of depression anxiety stress scale *(*DASS 42) questionnaire is a reliable tool. As for the hypertension variable, it is used from the measurement results of the sphygmomanometer.

Before collecting data, each respondent has directly explained the purpose and approval of participation. Samples are allowed to be withdrawn during data collection at any time. Furthermore, it passed the ethics test process with letter number: 657 / KEP / UP / 2022 by the Padjadjaran University Research Ethics Commission. The data analysis is univariate, which aims to describe the characteristics of each of the variables studied. Furthermore, a bivariate analysis with the Pearson Correlation Test was used to determine the strength of the correlation between stress levels and hypertension.

Results

This research was conducted in the working area of the Sukra Public Health Center, Indramayu Regency, on July 13-18, 2022, with a total sample of 95 respondents.
The results of the univariate analysis can be seen in the following table:

Table 1. The characteristics of respondents by age (N=95)

Characteristic	N	Mean	Median	Std. Deviation	(Min-Max)	95% CI
Age	95	70.14	69.00	8.433	60-98	68.42-71.86

The table 1 shows that the average age value of respondents is 70.14 years. The youngest age of the respondent is 60 years old, and the oldest period of the respondent is 98 years old.

Table 2. Distribution Frequency of Gender (N=95)

Gender	F	P (%)
Men	25	26.3
Women	70	73.7
Total	95	100.0

Table 2 shows that most respondents are female, with as many as 70 (73.7%) respondents.

Table 3. Distribution Frequency of Stress Level (N=95)

Stress level	F	P(%)
Normal	88	92.6
Mild	3	3.2
Moderate	3	3.2
Severe	1	1.1
Extremely Severe	0	0.0
Total	95	100.0

Table 3 shows that the majority of the elderly do not experience stress or are average, with as many as 88 (92.6%) respondents.

Table 4. Distribution Frequency of Hypertension Incidence (N=95)

Hypertension Incidence	Frequency (F)	Percentage (%)
No Hypertension	45	47.4
Hypertension	50	52.6
Total	95	100.0 %

In the table above, it can be seen that as many as 50 (52.6%) respondents had hypertension.The results of the bivariate analysis can be seen in the following table:

Table 5. Analysis of the correlation between Stress Levels and H (N=95)

Stress level	Hypertension				Total	%	P-value
	No Hypertension		Hypertension				
	F	%	F	%			
Normal	44	50.0	44	50.0	88	100.0	
Mild	0	0.0	3	100.0	3	100.0	
Moderate	0	0.0	3	100.0	3	100.0	0.080
Severe	1	100.0	0	0.0	1	100.0	
Extremely severe	0	0.0	0	0.0	0	0.0	
Total	45	47.4	50	52.6	95	100.0	

Table 5 above shows that the respondents did not experience stress or were regular with no hypertension and hypertension, respectively, as many as 44 (50.0%) respondents. The results of further analysis using the Pearson test obtained a p-value = 0.080. From the results of bivariate analysis, it can be concluded that p-value (0.080) > (0.05), which means that there is no correlation between stress levels and the incidence of hypertension in the elderly in the working area of the Sukra Public Health Center, Indramayu Regency.

Discussion

Stress is a physiological and psychological reaction that occurs when a person feels an imbalance between the demands faced and the ability to cope with these demands. Stress can be said to be a symptom of today's disease, which is closely related to the rapid progress and changes that require a person's adaptation to these changes as rapidly. Efforts, difficulties, obstacles, and failures to keep up with progress and changes give rise to various complaints (Rahman, 2016).

The above conditions show that most of the elderly in the working area of the Sukra Health Center do not experience stress or are expected. However, it is undeniable that some older adults experience stress, ranging from mild anxiety to severe stress.

The results of the calculation of the bivariate statistical test between stress levels and the incidence of hypertension in the elderly using the Pearson chi-square test obtained p-value = 0.080 > = 0.05 meaning This shows that there is no significant relationship between stress levels and the incidence of hypertension in the elderly in the working area of the Sukra Public Health Center, Indramayu Regency. This statement is in line with research conducted by Purba (2018) about the relationship between stress levels and the incidence of hypertension in the elderly at the Sindang Barang Health Center. The results showed that of 120 respondents, 70 were not stressed and had hypertension (58.3%). The results of statistical tests also obtained a p-value of 0.767, so the hypothesis was rejected so it can be concluded that there is no relationship between stress levels and the incidence of hypertension in the elderly at Sindang Barang Health Center. The results of this study are also in line with the research of Refialdinata et al. (2022), whose research results show no relationship between stress levels and the incidence of hypertension in the elderly in Kambang District, Pesisir Selatan Regency, West Sumatra Province.

This research is reinforced by a study by Lidia (2018); there is no relationship between stress levels and the incidence of hypertension. The absence of a relationship between stress levels and the incidence of hypertension in the elderly in the Kambang District can be influenced by the level of stress experienced, marital status, and work. From the explanation above, it can be concluded that stress level controls hypertension. The findings in this study explain the importance of health education to the elderly regarding other factors that can trigger hypertension. So it is necessary to research the relationship between the incidence of hypertension in the elderly with other risk factors such as obesity, smoking habits, physical activity, heredity, and lifestyle.

Conclusions

Based on the results of the research described in the previous chapter regarding the relationship between stress levels and the incidence of hypertension in the elderly in the working area of the Sukra Public Health Center, Indramayu Regency, it can be concluded that The results of the study obtained p-value = 0.080 with = 0.05, which means p-value (0.080) > (0.05). This shows no relationship between stress levels and the incidence of hypertension in the working area of the Sukra Public Health Center, Indramayu Regency. Therefore, this study recommends health services to improve health services for the elderly such as elder health services for the elderly so that hypertension in the elderly can be controlled.

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