Effects of Psychological Distress on Hypertension among Liquefaction Refugees in Petobo Shelter

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Abstract : The purpose of this research is to know the psychological disorder in the incidence of hypertension among liquefaction refugees in Petobo Shelter. A cross-sectional design was performed. The total number of patients who visit the health post at a Petobo shelter is 3,079 people taken in accidental sampling. The analysis uses the univariate and bivariate analyses at a degree of confidence of 95% (α = 0.05). The chi-square test results show that anxiety (ρ = 0,031), depression (ρ = 0,008), and stress (ρ = 0,000) are associated with the incidence of hypertension. It is expected that hypertension sufferers should do breathing exercises, perform physical activity and meditation relaxation to avoid anxiety, negative thoughts, also avoiding depression, stress and do interact with someone else so that the mind is not saturated and easy to forget the negative thoughts.
Keywords: Anxiety, Depression, Stress, Hypertension

1. INTRODUCTION

Hypertension is a non-communicable disease which is an important health problem because it is one of the many degenerative diseases. Hypertension will cause high morbidity and mortality rates because one of the causes is an increased risk of diseases such as stroke, heart, and kidney (Tackling & Borhade, 2020). The World Health Organization (WHO) in 2017 stated that hypertension is a global public health problem because it contributes to heart disease, stroke, kidney failure, premature death, and disability(WHO, 2019). This disease has become the leading cause of global death in the past 15 years. The highest prevalence of hypertension is in Africa (46%) of adults aged ≥25 years, while the lowest hypertension prevalence is in America (35%) (Katchunga et al., 2019).

Based on the Basic Health Research in 2013 the prevalence of hypertension in Indonesia was 25.8%, then in 2018 an increase of 34.11%. Central Sulawesi in 2013 showed a prevalence of hypertension of 28.7%, then an increase in 2018 to 29.75%(Kemenkes RI, 2013). Hypertension is included in the 10 most diseases in the Regency / City affected by the earthquake-tsunami disaster period from October to November 2018 with a total of 1,497 cases in Palu City, 1,084 cases in Sigi Regency and 741 cases in Donggala Regency. Blood pressure that continues to rise for a long time in someone suffering from hypertension can cause complications. Complications that can be caused include disorders of the brain tissue and blood vessels that cause several diseases such as stroke, kidney failure, coronary heart disease, causing death (Roshifanni, 2016).

Earthquake natural disasters raise attention to health problems globally. Earthquake victims are not only experience emergency problems such as construction, food, a physical condition due to the earthquake but also mental health problems. After a disaster most of the population

affected by the disaster still has a normal psychological reaction, around 15-20% will experience mild or moderate mental disorders that refer to Post-Traumatic Stress Disorder (PTSD) conditions, while 3-4% will experience disorders severe as psychosis, severe depression, and high anxiety(Estiadewi et al., 2019). This event is considered to threaten the well-being of individuals until negative emotions are experienced which causes blood pressure to rise and has the potential to cause hypertension (McFARLANE, 2010).

The purpose of this research is to know the psychological disorder in the incidence of hypertension among liquefaction refugees in Petobo Shelter.

2. METHOD

This type of research is a quantitative study with cross-sectional study design. This research was conducted at the Petobo refugee health service post in March 2019 until May 2019. The population in the study were all patients who visited the health post at the Petobo refugee camp, amounting to 3,079 people. In determining the sample size, the Lemeshow formula was used with a total of 243 people. The sampling technique is an accidental sampling. The inclusion criteria of this research are respondents at least 20 years old, diagnosed with hypertension by health workers, living in a Petobo refugee area, and willing to be a respondent. Data collection uses primary data through questionnaire and direct interview. Data analysis was performed using the Chi-Square statistical test at a 95% confidence level ($\alpha = 0.05$).

3. RESULT

The table 1. shows that based on univariate analysis, the highest frequency distribution according to age is in the 51-60 years age range of 68 respondents (28%) while the lowest is in the age range ≥ 81 years of 3 respondents (1.2%). The highest frequency distribution according to gender was female, amounting to 175 respondents (72%). The highest level of education is Senior High School with 132 respondents (54.3%) while the lowest level of education is no school with 7 people (2.9%). For the frequency distribution according to occupation, the highest is housewives with a total of 124 respondents (51%) while the lowest is farmers with 3 respondents (1.2%). The highest respondent experienced anxiety with a number of 133 people (54.7%), for the frequency distribution of depression the most affected by depression was 122 people (50.2%), while the distribution of stress frequency most affected by stress was 127 people (52.3%).

Table 1: Univariate Analysis of Respondent Frequency Distribution

Variable	n	(%)
Age		
20-30	11	4,5
31-40	43	17,7
41-50	55	22,6
51-60	68	28,0
61-70	43	17,7
71-80	20	8,2
≥ 81	3	1,2
Gender		
Male	68	28,0
Female	175	72,0
Level of Education		
Not school	7	2,9

Elementary School	33	13,6
Junior High School	63	25,9
Senior High School	132	54,3
Undergraduate	8	3,3
Occupation		
Unemployment	63	25,9
Housewives	124	51,0
Civil servant	5	2,1
Private employee	9	3,7
Labour	11	4,5
Farmer	3	1,2
Entrepreneur	28	11,5
Anxiety		
Yes	133	54,7
No	110	45,3
Depression		
Yes	122	50,2
No	121	49,8
Stress		
Yes	127	52,3
No	116	47,7

The table 2 shows that the results obtained are p = 0.031 (p <0.05) then H0 is rejected, meaning that there is a relationship between anxiety and the occurrence of hypertension. Respondents who experienced anxiety with the occurrence of hypertension were 68 people (51.1%) while respondents who did not experience anxiety and did not have a history of hypertension were 69 people (62.7%). The depression variable shows that the results are p = 0.008 (p <0.05), then H0 is rejected, meaning that there is a relationship between depression and the occurrence of hypertension. Respondents who experienced depression with the occurrence of hypertension were 65 people (53.3%) while respondents who did not experience depression and did not have a history of hypertension were 77 people (63.3%). The stress variable shows that the result is p = 0.000 (p <0.05) then H0 is rejected, meaning that there is a relationship between stress and the occurrence of hypertension. Respondents who experienced stress with the occurrence of hypertension were 72 people (56.7%) while respondents who did not experience stress and did not have a history of hypertension were 79 people (68.1%).

Table 2: Bivariate Analysis of the Relationship of Anxiety, Depression, and Stress with the Occurrence of Hypertension

Variable	Hypertension				Total		P	
	Yes		No					
	n	%	n	%	N	%		
Anxiety								
Yes	68	51,1	65	48,9	133	100	0,031	
No	41	37,3	69	62,7	110			
Depression								
Yes	65	53,3	57	46,7	122	100	0,008	
No	44	36,4	77	63,6	121			
Stress								

Yes	72	56,7	55	43,3	127	100	0,000
No	37	31,9	79	68,1	116		

The Relationship between Anxiety with Hypertension

Anxiety is a feeling of insecurity, unpleasant, uncertain, frightening, and worrying about the possibility of danger or threat and danger. If someone experiences anxious, nervous, or tense feelings in the face of an uncertain situation, that person is experiencing anxiety (Pertiwi, 2017). Anxiety can affect interpersonal and personal aspects. High anxiety will affect the coordination and reflexes, difficulty listening, withdrawing, and decreasing involvement with others (disrupted relationships with others). Anxiety can also affect the ability to think both thought processes and thought content, including being unable to pay attention, decreased concentration, easy to forget, and decreased perception (Robinson et al., 2013).

The age group of 51-60 years more likely to experience anxiety as much as 68 respondents (28.0%) which means the older a person is, the more their physical condition will decrease, the weakened immune system, and the lack of the body's response in preventing disease. So if you are not careful in doing activities, consuming food, keeping your mind and paying attention to the condition of the body and health it would be easily developing hypertension which is commonly found because age is one of the factors that contribute greatly to the onset of anxiety (Salafudin & Handayani, 2015).

Based on the characteristics, more women experience anxiety as much as 175 respondents (72.0%), the results of interviews that in general women are physically weaker and have higher anxiety levels compared to men. Blood pressure tends to increase in women after menopause, this is caused by psychological factors and changes in the hormones estrogen and progesterone (Lima et al., 2012). People with hypertension are women because they have several special conditions related to calcium intake, pregnancy period, oral contraception, and menopause(Wenger et al., 2018). When someone is more skilled in controlling breathing then he can change the atmosphere to relax at any time. Apart from breathing relaxation, meditation can also be done. Meditation is the practice of relaxation that involves releasing the mind from all things that are interesting, burdensome, and worrying in everyday life. Meditation can train the focus of the mind so that it has a clear view of the current state and remains calm (Eashwar et al., 2017).

The Relationship between Depression and Hypertension

The age group of 51-60 years more depressed as much as 68 (28.0%), this is because of increasing age, the risk of depression is doubled, this is because at this time many changes occur in a person. There is a physiological mechanism that underlies the relationship of depression with hypertension, whereas there is an imbalance of neurotransmitters as an introductory compound, resulting in an increase in serotonin, dopamine, and norepinephrine which affect blood pressure regulation, and sympathetic nervous system disorders that result in arteriolar contraction so that the body compensates with increased blood flow (Salafudin & Handayani, 2015).

Natural disaster events are events that are difficult to avoid and be predicted precisely. The impact of disasters can be in the form of casualties, property, damage to infrastructure, social environment, and disruption to the established life and livelihoods of the people. Victims of natural disasters face very complex situations and conditions, both physically, psychologically, and socially. Adversity is also faced with psychosocial problems, such as fears of a catastrophic catastrophe, a deep sense of loss of the death of family members, property, and sources of livelihood that often lead to prolonged sadness. Disaster victims who feel prolonged sadness also tend to have a high risk of suffering from certain psychological disorders such as depression (Makwana, 2019).

The results of this study are in line with Priyoto (2015), the value of ρ 0.001 <α (0.05) means that there is a relationship between depression and the incidence of hypertension in the Social Service Technical Implementation Unit of Selosari District, Magetan Regency with the results of statistical tests using Chi-Square. Of the 30 who were depressed the majority were hypertensive as many as 24 (80%), while of the 16 who were not depressed, most 12 (75%) did not have hypertension. Closely related to those who are depressed are more likely to experience hypertension because depression is one of the factors that influence the level of hypertension (Walker & Mann, 2016). The results of this study are in line with the results of the study of Wen Z, et al. (2014) in China which states that depression is not directly related to the incidence of hypertension and the incidence of hypertension is not directly related to depression (Wen et al., 2010). Hypertension could be controlled by exercising, reducing sodium intake, adjusting diet, reducing stress, and drugs can be used for recovery or prevent giving optimal results on blood pressure (Wen et al., 2010).

The Relationship between Stress and Hypertension
Stress is a condition or state of the body that is disturbed due to psychological pressure and stress is usually associated with psychological illness. Stress is a strain that can affect the cardiovascular system, as a psychological factor that can increase blood pressure(Spruill, 2010). However, more due to a person's psychiatric problems subsequently results in physical illness which can arise due to weak and low endurance in stressful conditions (Khotimah, 2013). The age group 51-60 years old experience more stress as much as 68 (28.0%), this is because the older a person is, the more things that must be passed and make the respondent have a high-stress level. One process that occurs is the cardiovascular system is hypertension, where the elasticity of our blood vessels decreases so that it tends to narrow and cause an increase in blood pressure (Salafudin & Handayani, 2015). Increased blood pressure during stress is a physiological response. Sympathetic heart nerves are activated by stress, and this makes more sense to lower blood pressure through behavior modification. Stress increases peripheral vascular resistance and cardiac output so that it will stimulate sympathetic nerve activity (Khotimah, 2013).
Psychological trauma after natural disasters will worsen the condition or psychological problems that existed before the earthquake occurred (Margolin et al., 2010). Distress related to natural disasters will take place long after the incident. The condition will get worse if not detected early and treated properly so that mental health services are needed (Agustina & Sari, 2014). A post-disaster psychological trauma management intervention is carried out to follow up on the needs of mental health services for disaster victims through the action of training health workers to provide psychosocial support (Walker & Mann, 2016). Health workers who have received training will apply mental health services as a form of meeting service needs in the long term and ongoing. This is part of efforts to improve the health system in the community (Ramdani et al., 2017).
Stress accelerates the production of harmful compounds in the body, increases the speed of the heart rate and the need for blood supply, and soon increases blood pressure and causes heart attacks and strokes (Diaz, 2019). Stress can affect anyone and can occur when things are unexpected if someone can adjust well to the stress they face it will have a good effect but if on the contrary, a person cannot adjust to the stress he is facing will have a bad impact so stress is prolonged and will cause health problems (Ramdani et al., 2017).
In preventing the onset of stress can be done by copying management which performed by providing solutions by managing reactions constructively to organize emotions so that they are calmer. Coping management can increase the hormone dopamine which can trigger the emergence of neutral emotions so that it can prevent an increase in blood pressure because stress is a risk factor for hypertension. It also must be controlled by doing physical activity,

and blood pressure monitoring to be more controlled and know early prevention that must be done (Cheng et al., 2014).

Medical or psychological treatment can be given to patients with hypertension that is often done in patients with chronic diseases that experience stress is treatment commitment, including relaxation. Relaxation is one technique that can be done to reduce the tension experienced by individuals performing relaxing the muscles in the body. Relaxation generally aims to stretch the muscles so they don't experience tension. In the human body, there is a nervous system that works to control the muscles that move the body. When relaxation is carried out, the nervous system in the body works according to its function. When tension is dominant, the sympathetic nervous system is at work, whereas when it is relaxed or relaxed the parasympathetic nervous system is at work (Naeem et al., 2011).

Relaxation can help people with hypertension evoke the relaxation response and reduce stress since the body produces a surge of hormones in a stressful situation which temporarily increases the blood pressure by causing the heart to beat faster and blood vessels to narrow. We conducted a deep breathing relaxation, progressive muscle relaxation, and sensory awareness relaxation. Progressive muscle relaxation helps people relax physically and mentally. Also, Deep breathing is one of the best ways to lower stress in the body. This is because when we breathe deeply, it sends a message to the brain to calm down and relax. The brain then sends this message to the body. Breathing exercises are a good way to relax, reduce tension, and relieve stress (Wen et al., 2010).

4. CONCLUSIONS

Anxiety, depression, and stress-related to the incidence of hypertension among liquefaction refugees in Petobo shelter. To reduce the incidence of hypertension, it is recommended to avoid anxiety. Patients with hypertension should do breathing relaxation and meditation so that the atmosphere becomes relaxed and helping the focus of the mind, avoiding depression, hypertension sufferers should fight negative thoughts and do physical activity to avoid prolonged deterioration in physical conditions. and mentally and avoid stress, hypertension sufferers should avoid solitude and often interact with someone so that the mind is not saturated and can forget negative thoughts.

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