

Original Article




Relations Between Stress Level With Recurrence Of Hypertension Disease To Patients Aged 40-60 Years Old In Community Health Center Level II Municipality Lospalos, Timor Leste

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ARTICLE INFO	ABSTRACT
<p>Article History: Submit : Dec 23, 2022 Revised : Dec 26, 2022 Accepted : Dec 27, 2022</p> <p>Keywords: Stress Level, Hypertension, Community Health Center</p>	<p>Background: For people who get a kind of disease, the medic diagnosis of Hypertension is when their blood pressure is >140/90 mmHg. Those factors that influence added blood pressure are lifestyles, such as smoking, salt intake, obesity, physical activity and stress, genetic factor, inadequate vasoconstriction modulator, vasodilatation, renin system, angiotensin, and aldosterone. The objective of this research is to analyze the "Relationship between stress level with recurrence of Hypertension disease to a patient aged 40-60 years old in Centro Saúde Comunitária Nível II Lospalos, in 2022 years".</p> <p>Methods: This research uses the quantitative method and cross-sectional approximation conducted in Centro Saúde Comunitária Nível II Lospalos in 2022. The population to be sampled is Hypertension patients aged 40-60 years old, and the sampling result is defined as 91. For technique data collection, the researcher uses a questionnaire. Analyze data technique uses the chi quadrat statistic test.</p> <p>Results: The result of analyzing Chi-Square defined by this research is a significate value of 0.016<0.05 significate unacceptable Ho, and also results by Shi-Square Linear-by-Linear Association of statistic 0.399 meaning less relationship between stress level with recurrence of Hypertension disease to the patient with aged 40-60 years old. The results of Chi-Square have a relationship between stress level and recurrence of Hypertension disease to patients aged 40-60 years old.</p> <p>Conclusion: Stress level is the main risk of recurrence of hypertension. When stress to the patient's recurrence of Hypertension will occur another complication, hypertension is also a kind of disease that is very dangerous to distribute and cause mortality. Hypertension sometimes, other people call silence killer.</p>

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Introduction

Hypertension is a risk factor that is easy to cause occur cardiac disease and sanguine vessels. Hypertension often without expresses any symptom. According to the ([World Health Organization, 2012](#)), systolic blood pressure at the usual standard is 120-140 mmHg, and diastolic blood pressure is 80-90 mmHg. People with medical diagnoses of Hypertension when they obtain >140/90 mmHg blood pressure ([Nita, Y, 2018](#)).

The WHO and International Society of Hypertension (ISH) currently obtained 600 million Hypertension patients worldwide and between 3 million deaths yearly ([Darmawan, A, 2019](#)). According to the ([WHO 2012](#)), Hypertension contributes to approximately 9,4 million deaths caused by cardiovascular in each year. These may increase the risk of cardiac coroner disease maximum of 12% and stroke maximum of 24%. *Data Global Status Report on Noncommunicable Disease 2012* by (WHO) indicates all the countries with developing economies, 40% of all patients have Hypertension and in developing countries is only 35%.

Hypertension can be conducted prevention accurately when it has controlled the risk factors. All the factors that happen to influence increasing blood pressure are life standards such as smock, intake of many salts, obesity, physical activity and stress, genetic factor, age, not balance between modulator vasoconstriction and vasodilation, and renin system, angiotensin and aldosterone ([Nita, Y, 2018](#)). Hypertension can provide primary care because It could cause complications for the organic target, and this illness does not show any significate symptoms to make it appear disease because of its name, “*silent disease*” ([Feryadi, 2014](#)). The Southeast Asia Region gained 36% for adults suffering from

Hypertension disease, killing 1,5 million people every year. The results of the Hypertension patients ratio are increasing, with estimates for 2025 years approximately 29% or 1,6 million adults worldwide suffering from Hypertension disease ([Abaa, Y. P., 2017](#)).

Recurrence is a condition that appears again with symptoms and signs of a disease that has recovered a bit. The cause of recurrence is taking medications, not regular, inadequate medical doses, having no support from family, and having any unsolved problem ([Faridah, U, 2021](#)). Recurrence is possible for Hypertension patients because of their incapacity to cater to their problems and too much to think about until the Hypertension disease occurs ([Arifin, S. 2015](#)). Stress is defined as a psychological event that causes by exposure for all people who often have aggressors. The subject transportation to blood pressure conditions increases intentionally to maintain psychological balancing. Pathologic stress is a direct effect of a personality who always be an effort to exist in a situation. The scientific form is understood that stress is a response to a neurophysiological complex caused by evaluating personal danger and threats. Because as a body always seeks balancing, all the consequences of emotional dysfunction, principal in the cardiac frequency of variability, relation to the heartbeat of oscillation ratio ([Nascimento Calles, A. C., 2016](#)).

The word “stress” is currently used in the English language and begins from the Latin “stringer,” which means that tension, through the France language ancient. Would use the English language in the XVII century, this means “adversity” or “unhappiness” before returning to the physical theory in the XIX century would be called “the power of the result of the body from the opposite fall power, it is not long as damage the body”

(Nodari, N. L., 2014). Stress is defined as a predisposing factor mainly for Hypertension, related to the other risk factor influencing heart reactivity (Oliveira Figueiredo, J., 2015). Stress appears when a changed individual adapts to a set of social factors. That is why they cannot repair the adaptation to the environment to hurt the health and do not automatically respond to stressors estimation (Faro, A. 2013). There is a lot of factors be able to affect stress level for a patient with Hypertension disease, are economical and service problem, family problem, eating pattern problem, smoking habit, a physical and psychological disorder that accompanies high blood pressure, and overthinking about the hypertensive disease (Anggraieni, W. N., 2014).

Stress is determined to occur tachycardia when the exposure moment exceeds for indusium situation, and another else occurred bradycardia is responding to stress; it's also possible to cause endothelial dysfunction and reduces limitation to arrhythmia and death suddenly (Nodari, N. L., 2014). Hypertension recurrence progressively influences stress through a sympathetic nervous activity that can increase arterial pressure. Stress can increase sympathetic nervous activity with its Mechanism that regulates nerve and hormone function; therefore, the body can increase salt and water retention. When stressed, aldosterone production increases catecholamine secretion to renin-angiotensin. Blood pressure increases when the impact of increased hormone secretion refers. Maybe stress happens for a long time, possibly causing to increase in blood pressure (Hartati. I, 2019).

According to public data from (the World Health Organization, 2018) mortality of patients with Hypertension reached 73 or 1.14% of the total of people who died. Mortality rate adjusted 15.32 of 100,000 populations, Timor-Leste obtained a 71

ranking worldwide. According to data from (SMS, 2021), the population of the municipality Lautém accumulates 1973 suffered from Hypertension disease. According to (Community Health Center Level II Lospalos, 2020) reported is a patient that registered accumulates 1436 persons suffering from Hypertension disease

Methods

Research methodology is an activity to produce a service that writes on a scientific basis, so it is a result of the decision service or research in areas (clinic and laboratory) that identifies the identification problem to carry out analysis or a process that can lead to a conclusion. This research is also the scientific method of characteristic the same objective. The objective is proper investigation comparing actual conditions without manipulation (A. Aziz Alimul Hidayat, 2017). Quantitative methods are often defined in the traditional method because research data with the number and analysis method uses statistics. From the above definitions, the researchers desired to conduct this research using quantitative and cross-sectional approaches (Sugiyono, 2016). *Cross-sectional* is a research plan designed to make measures and observations one time at the same time. This research method is often used for proximate causes of the incidence of related illnesses. (A. Aziz Alimul Hidayat, 2017).

Results

Frequency distribution of characteristic respondents based on sex/gender, education level, service, and marital status in Community Health Center Level II Lospalos in June 2022.

Table 1 Respondent characteristics according to sexuality/gender

Sexuality/gender	Frequency	Percentage
Female	44	48.4 %
Male	47	51.6 %
Total	91	100

Based on Table 1, the respondent gender is defined as follows: women have the lowest category with frequency (44; 48.4%), and men have the majority category with frequency (47; 51.6%); respondent 91 who suffers from hypertension disease, a lot of men compared to the woman.

Table 2. Respondent characteristics according to education level

Education level	Frequency	Percentage
Primary	34	37.4 %
Pre-secondary	14	15.4 %
Secondary	29	31.9 %
University	14	15.4 %
Total	91	100 %

Based on Table 2, at the education level with Pre-Secondary and University, there is a minority category with frequency (14; 15.4%), and Primary education level has a majority category with frequency (34; 37.4%) of the respondent 91 who suffers from hypertension, level of education with Pre-Secondary and University is much minority compared to the level of Primary education.

Table 3. Respondent characteristics according to service

Service	Frequency	Percentage
Agriculture	31	34.1 %
Housewife	36	39.5 %
Student	0.0	0.0 %
public employee	17	18.7 %
Private Employee	7	7.7 %
Total	91	100%

Based on Table 3., it is the service of respondent 91 that the minority category is

a student with frequency (0; 0.0%), and the majority category is a housewife with frequency (36; 39.5%).

Table 4. Respondent characteristics according to marriage status

Marriage status	Frequency	Percentage
Single	4	4.4 %
Married	67	73.6 %
Widower	5	5.5 %
Widow	15	16.5 %
Total	91	100 %

Based on Table 4, respondents 91, category less are single with the frequency (4; 4.4%), and category majority are married with the frequency (67; 73.6%).

Table 5. Stress level distribution

Stress level	Frequency	Percentage
Light	37	40.7 %
Moderate	40	44.0 %
Serious	14	15.3 %
Total	91	100 %

Based on Table 5, frequency distribution according to the stress variable shows that most of the stress level variable is moderate stress with frequency (40; 44.0%), and the lowest is a category frequently severe (14; 15.3%).

Table 6. Hypertension

Hypertension	Frequency	Percentage
Normal	9	9.9 %
Recurrence	82	90.1 %
Total	91	100 %

Based on Table 6, the frequency distribution is according to the hypertension variable in the category much less is normal with frequency (9; 9.9%), and the majority category is recurrence with frequency (82; 90.1%).



Table 7. Bivariate analysis

Stress level		Hypertension		Linear-by-Linear Association	p-value
		Normal	Recurrence		
Light	Frequency	1	36	0.399	0.016
	%	1.1%	39.6%		
Moderate	Frequency	8	32		
	%	8.8%	35.2%		
Serious	Frequency	0	14		
	%	0%	15.3%		
Total	Frequency	9	82		
	%	9.9%	90.1%		

Analyzes the relationship between stress level and recurrence of hypertensive disease in Community Health Center Level II Lospalos (Tinan 2022). Based on Table 7, the result that showed is frequency distribution with category majority is mild stress level that relates with recurrence of the disease hypertension with frequency (36; 39.6%) and standard with frequency (1; 1.1%) and category much less it is a severe stress level that relates with recurrence to hypertensive disease with frequency (14; 15.3%) and normal with frequency (0; 0%).

Analyze Criteria:

Ho: received when the significant value of the *p*-value > 0.05

Ho: not accept/reject when the results for the significant value of the *p*-value < 0.05.

Base a significant value of 5% (0.05) to define the hypothesis is:

Ho: not received, meaning there is a relationship between stress level and the recurrence of hypertension in patients 40-60 years of age. An analysis result *Chi-Square* defined above that the significant value $0.016 < 0.05$ significant Ho not accept, therefore, also obtain the result by statistic *Chi-Square Linear-by-Linear Association* 0.399 is less relationship between stress level and recurrence of the hypertensive disease for patients aged 40-60 years. Concluded by the result of *Chi-Square*, there is a relationship between stress level and with recurrence of hypertension disease for patients aged 40-60 years old

Discussion

Analysis result of utilized computer software SPSS 16.0 for topic relation between level stresses with recurrence for patient disease hypertension for ages 40-60 at Centro Saúde Comunitario Nível II Lospalos, in the years 2022 which that was given the result such as:

The sexuality of the respondents to recurrence hypertension disease for patients aged 40 until 60 years. Based on the research result, table 1 defined that respondent sex/gender showed that the category for female less with frequency (44; 48.4%) and the category for male is majority with frequency (47; 51.6), from respondent 91 defined that recurrence hypertension disease many for male compared with female. According to Hungu (2016), cited from (et al., and Trisnawati, O., 2018), sex/gender, such as differences between females and males with the manner biology during who was born. Different biological functions for males and females cannot change each one. Their function is still without change. Allow the conception that the *cause of chronic disease*, sexuality as a factor nonmodification which risk for recurrence hypertension disease (Hamzah, N. (2002).

According to (et al. Kusumawaty, 2016), cited by (Kristina Rotua, K R., 2021) said that this sex/gender relation through the appeared recurrence of hypertension



disease for period ages continued quickly to appear hypertension in females when women menopause. Generally, males who suffer hypertension between the ages of thirty and women generally suffer hypertension when menopause Pasch (Hamzah, N, 2022).

The level of education from the respondent regarding the recurrence of hypertension disease for patients aged 40-60. Based on the result researcher in Table 2. in the level of education respondents 91 less than the category for the level of education pre-secondary and university with frequency (14; 15.4%), in the category level of education secondary with frequency (29; 31.9%) and the majority is a category in the level of education primary with frequency (34; 37.4%). Respondent 91 defined that recurrence hypertension disease category level of education primarily compared with pre-secondary and university, which is smaller.

The education level is one more important for everyone's life. Human resources a sound depending on the education received. Therefore, the process of education is must clear and derived. The level of education as a process humanist for human come from their thinking people. This is made from the primary education of humans. (Idris. S., 2017). This relation is not only caused by further education, but the level of this education affects the style of living healthy with no smoking, no drinking alcohol, and often exercising. The risk more to get hypertension from a level of education less possible to influence because lack of knowledge of the patient with a level of education less for health and difficulty or so late getting information which distributes from the questioner to impact the characteristics/standard of life healthy (Anggara, F. H. D. 2013).

Services from respondent recurrence hypertension disease for patients aged 40-

60 years. Based on the research result in Table 3. According to the type of category, more students with frequency (0; 0.0%) have category agriculture with frequency (31; 34.1%), in the category functionary of the public with frequency (17; 18.7%) in the category functionary of private with frequency (7; 7.7%) and the majority is household with frequency (36; 39.5%). Respondent 91 defined that the recurrence of hypertension disease in the majority of the services is category household compared with students.

The research result proceeds with the theory that Drnasry Noor (2008), cited in (Azhari M. H., 2017), said services or professions are more seen from possible exposition specific, and the level of exposition referred to. Risk more followed characteristics of services, the environment, and socioeconomic characteristics for services refer. Services also have a relationship that is more with socioeconomic state, after disease which appears in a family sometimes related to the type of service which influences for income family.

The marriage state from respondent recurrence hypertension disease for patients aged 40-60. Based on the research results in Table 4. From respondent 91, the category less single with a frequency of (4; 4.4%), the category women widow with a frequency (of 15; 16.5%), has category men widower with a frequency of (5; 5.5%), and the category majority with married with a frequency (67; 73.6%). Distribution frequency for marriage states more with the category married compared with a single. According to (Abdus Somad) cited in (Hakim, A R., 2019), marriage is the relation with equivalent between husband and wife in the aspect of principal and aspect religion. Marriage state has a relation with hypertension for respondents with state widow has high risk more to suffer

hypertension than those without widow, according to the researcher define that get the relation between the level of disease and mortality and marriage state. All this relates to a tendency for those who live alone to have state health, not good health, because has a different style of life which relates to manner casual with disease refer (Fitriani, A. 2012).

The stress level from respondent recurrence hypertension disease for patients aged 40-60. Based on the research, Table 5. showed that in the above distribution, according to variable level stress majority level stresses with category moderate with this frequency (40; 44.0%), stress level with category not severe with this frequency (37; 40.7%), and less than stress level with category grave with frequency (14; 15.3%). The frequency of most frequent from 91 majority that the highest stress level with category moderate, compared with the highest stress level, which is less.

According to (Hawari 2011), cited in (Haryanto, E., 2017) stated that stress levels like respondent contents with this characteristic of nonspecific against demand which is about how contents are able to respond to those involved in services that are more challenging. Stresses such as condition tension are influenced by emotional thinking and the condition physics of humans. Stress can appear identical cause of precision and tension, which fount from inconsistency between somebody with this environment. Therefore stresses have the same reaction, which adapts to characteristic individuals until people can see these various stresses that influence through level maturity of thinking, habilitation adaptation for every human and every environment. When anybody suffering from stress may attend stress, refer means without disturbing the function

of a body part that is no preoccupation with stress (Haryanto, E., 2017).

Stress alike disturbs mental which against somebody influences pressure. This pressure appears to fail from one person who realizes that necessary or their desire. The pressure occurs from own self or outside. Stresses can't say out with manner freedom such as tension or pressure. So stress and condition tension have inside the pressure (Mariana I, 2021). Respondents from recurrence hypertension disease for patients aged 40-60 years. Based on the research results in Table 6, the frequency distribution according to the hypertension variable in the category of majority registered with frequency (82; 90.1%) and the category more minimal than average with frequency (9; 9.9 %). The frequency distribution of 91 respondents with hypertension disease compared to the average is minimal.

Hypertension is a condition with an increase in systolic blood pressure of more than 140 mmHg and diastolic blood pressure of more than or equal to 90 mmHg. Hypertension usually does not show specific symptoms, while an increase in blood pressure in the long term can cause complications. Therefore, hypertension needs to be detected early through periodic blood pressure analysis (Zainaro, M.A., 2021).

Hypertension is commonly called a *silent killer*. Therefore hypertension is one of the main factors causing complications of cardiovascular disease such as heart attacks and strokes (Lestari, N.K.Y., 2022). Hypertension can be prevented when the risk factors are controlled. The factors that affect increased blood pressure are lifestyle, smoking, excessive salt intake, obesity, physical activity and stress, genetic factors and age, the renin system, angiotensin, and aldosterone (Nita. Y, 2018). Stress level with recurrence of hypertension disease in

patients ages 40-60 years with a significant value p -value $0.016 < 0.05$.

Based on the results in **Table 7**, shows that the frequency distribution in the minor category is the level of severe stress associated with the recurrence of hypertension disease with a frequency (of 14; 15.3%) and standard with a frequency (of 0; 0.0%) and the majority category is a light stress level associated with recurrence of hypertension disease with frequency (36; 39.6%) and the normal with frequency (1; 1.1%). Frequency distribution from 91 respondents is mostly light stress level associated with recurrence of hypertension disease compared to the stress level of the heavy category associated with more minimal recurrence of hypertension disease.

Based on a significant value of 5% (0.05) to determine the hypothesis that: H_0 : not accepted means there is a relationship between stress levels and recurrent hypertension in patients aged 40-60. on the analysis results of the *Chi-Square* above, it was determined that a significance value of $0.016 < 0.05$ means H_0 not accept, but the results of the *Chi-Square Linear-by-Linear Association statistic* were 0.399 in the category (0.20-0.39) there is less relationship between stress levels and recurrent hypertension disease in patients age 40-60 years. *Chi-Square* results concluded that there is a relationship between stress levels and with recurrence of hypertension disease for patients ages 40-60.

Because based on researchers (Muhlisin A., 2013) defining a p - v value of less than 0.05 ($0.039 < 0.05$) means that H_0 not accept, so it is concluded that there is a relationship between stress levels and recurrence of the hypertensive disease for patients. According to (Situmorang, F.D., 2020), stress levels are the main risk of recurrence of hypertension. When there is stress from the patient, recurrent

hypertension can lead to other complications. Hypertension is not a contagious disease but can cause severe health problems. So, it would help if you watched out for it because it is a silent killer disease (Lestari, N.K.Y., 2022). Hypertension can be controlled by keeping blood pressure regular to reduce complications in other organs at greater risk (Situmorang, F. D., 2020). Hypertension is not contagious, so it is necessary to watch out for normal arterial pressure that can continue to increase. An unhealthy lifestyle usually causes an increase in the prevalence of hypertension disease. Psychological factors are also one of the factors causing hypertension, especially in the elderly. This study aims to determine the relationship between stress levels and the recurrence of hypertension in patients aged 40-60 (Pujiastuti, C., 2022).

Physiologically, stress can increase blood pressure, respiration, and arrhythmias. In addition to the physiological response to the hormone adrenaline, it is one of the factors causing severe stress and can cause an increase in blood pressure and blood clots which can even cause a heart attack. Adrenaline can also speed up the heart rate and narrow the coronary arteries. People's psychological conditions differ, so this condition can also affect blood pressure. Also, uncontrolled emotions and negative thoughts can cause high blood pressure but not physical symptoms (Ardian, I., 2018). This relationship shows that people who experience stress can be at risk for the recurrence of hypertension, which means that increasing stress levels continuously can affect the recurrence of hypertension disease. A severe stress level indicates a calm condition and finding out the solution until experiencing a recurrence of hypertension (Pujiastuti, C., 2022). This research is supported by a method that states that high emotional conditions and the possibility of continuous stress from

time to time can cause somatic reactions that directly affect the circulatory system, which can affect heart rate and circulatory system (Ardian, I. 2018).

Conclusion

Based on the presentation of research results and discussion of the relationship between stress levels and recurrence of hypertension disease for patients ages 40-60 years, Centro Saúde Comunitário Nível II Lospalos, in 2022 years such as the respondent's gender indicated that: women were included in the minority category and men were included in the majority category Respondents at pre-secondary and university level of education, the category is a minority. The level of primary education has the category majority. Respondents, the frequency of services has the minority student category and the majority housewife category. Respondents, the state marriage frequency has the single minority and married majority categories. The stress level respondents must have a category for moderate stress level, and a minority have the category severe stress level in Centro de Saúde Comunitário Nível II Lospalos, the year 2022. Hypertension disease of patients aged 40-60 years with the majority of respondents who has the category recurrence and the category more minimal and normal in Centro de Saúde Comunitario Nível II Lospalos, the year 2022. Relation between stress level and recurrence hypertension disease for patients aged 40-60 years at Centro de Saúde Comunitário Nível II Lospalos, 2022. The result correlates with stress levels and the recurrence of hypertension in patients aged 40-60.

Authors Contributions

The author carries out tasks from data collection, data analysis, making discussions to making manuscripts

Conflicts of Interest

All research teams agree with the final results of this study, and there is no conflict of interest in this study.

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