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THE RELATIONSHIP OF STRESS LEVEL WITH CHANGES IN BLOOD PRESSURE IN STUDENT BACHELOR APPLIED IN NURSING MAGELANG

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ABSTRACT

Introduction: Blood pressure can change at any time and can even change drastically. Stress is one of the triggers of changes in blood pressure. Stress can lead to change pressure blood good systole as well as diastole.

Methods: The research design is correlational analytic using a cross sectional approach. This study uses a total sampling technique of 63 respondents. Instruments in research This study uses a DASS 42 questionnaire with 14 stress level items for the stress level variable and *sphygmomanometer* as tool for variable pressure change blood.

Conclusion: the majority of respondents experienced changes in systolic and diastolic blood pressure until the results obtained with p value = 0.001 and 0.002 (p <0.05). Respondents can manage stress with good and could apply pattern behavior healthy one daily.

Keyword : Stress;Change Pressure Blood.

Introduction. Blood pressure is a very important factor in the human body. Blood pressure is the amount of force exerted by the blood on the inside of the arteries when the blood is pumped throughout the body (1) . Blood pressure can also change at any time and even change drastically. These changes in blood pressure include both a decrease and an increase, which are often result in somebody sigh dizzy, sick head, neck feel rigid, and eye dim. Not all blood pressure is within normal limits so blood pressure divided into two types, namely high blood pressure or hypertension and high blood pressure low or hypotension (2) . Hypertension occurs due to two factors, namely internal factors or risk factors that are notcan be changed, including genetics (heredity), age, race, and gender, while the external or modifiable risk factors, including being overweight (obesity), lack of activity physique for exercising, habit smoke,

alcohol, consume caffeine, salt intake, consuming saturated fat, education level, work and stress psychosocial [3]

Blood pressure is influenced by several factors, one of which is changes in blood pressure namely stress. If prolonged stress can change normal functions in the body.So that over a long period of time it can cause signs of degenerative diseasenamely high blood pressure. In high blood pressure changes that occur continuously could cause existence damage on kidney like fail kidney, heart like coronary heart disease and brain that can cause stroke, so it is necessary to there is a proper handling or management of stress in order to prevent a fatal situation consequence from stress [4] . Stress is wrong one the originator happening change pressure blood. *World Health Organization* (WHO) states that stress is an epidemic that has spread throughout the world whole world. Stress occur because there is interaction transactional between individuals with environment which each other related and each other influence, which accompanied with process adjustment in inside [5] . Stress could caused by environment which considered challenge and threaten or undermine an individual's dynamic balance [6] . Thing Thiscauses pressure from the environment that can stimulate the body's reaction and psychic a individual. Miscellaneous stress there is three Among other stress light, stresscurrently and stress heavy, next stress susceptible occur on ages teenager 15-24 year where teenager on age the occur change psychology which among them instability emotional that includes low coping with stress [7] . Irfan basyarul aqsho (2021) explains in his research on "Level Relationships" Stress To Pressure Blood On Age middle In Village Katikan Regency Ngawi" The results showed that the increase in the category of moderate stress was the mostexperienced by middle age and there is a fairly close and significant relationship between the level of stress on blood pressure in middle age [8] . Meanwhile, in Bepri Agnesia's research, Kawi which explain about "Impact Stress To Pressure Blood Student Medical University Tarumanegara Before Exam Skills Clinical Base Block System Musculoskeletal" obtained results that by statistics no there is connectionwhich mean Among stress with pressure blood student medical which undergoexam clinical skills [9] .

Preliminary studies that have been conducted on seven undergraduate students of applied nursing Magelang final level where many are under pressure, so it is obtained data that of the

five students experienced changes in blood pressure with an average average and two of them do not change with no change in pressure blood. Therefore, researchers are interested in conducting research with the title relationship level stress to change pressure blood on student semester end inMagelang Nursing. The purpose of this study was to determine the level of stress in students, to determine changes in systolic blood pressure in students, to determine changes in diastolic blood pressure in students and analyze the relationship between Among stress level to change blood pressure on student.

Methods. Type study which will used is study quantitative with connection correlation through approach *cross sectional* (10) . The place conducted study on Magelang Nursing Study Program student. Operational definitions in this study are stress levels and changes in blood pressure. The stress level variable is a disturbance in thoughts caused by the demands of the surrounding environment and on the variables of change Blood pressure is a change in blood pressure either an increase or a decrease that compared by average pressure blood respondent on 1 month final. Population This research is all 8th semester students, totaling 63 students in the majors Nursing Magelang. Sample on study this use total sampling so that amount respondent as much 63 respondents (11) . Instruments in study this is questionnaire dass 42 with 14 level stress for instrument in study thisand *sphygmomanometer* aneroid.

Technique collection data started with permission to party study program Nursing Magelang then researcher meet respondent for explain destination study as well as ensure secrecy to respondent with give *informed consent* . Researcher distributing questionnaires to on April 4, 2022 using a questionnaire stress level DASS(*Depression, Anxiety, and Stress Scales*) 42 with 14 stress level items and continued by measuring blood pressure on the respondents. After that respondents were asked to return the questionnaire on 08 April 2022. The number of questionnaires distributed was 63 questionnaires and the questionnaires returned to researcher amount 63. After all questionnaire return from respondent so researcher continue checking on the results of the questionnaire, after that the results of the questionnaire are coded for easy to enter data. data in score to find out stress level results on each respondent and continued with enter stress level data and results blood pressure measurement that has been coded into computer software and then results the entered into the table which containing about characteristics respondent coversage, gender,

changes in systolic blood pressure, changes in diastolic blood pressure and stress levels, the relationship of stress levels with changes in systolic blood pressure and the relationship stress level with changes in diastolic blood pressure along with the results of statistical tests. Stage The last one is cleaning the data that was given the code and unused dataagain.

Result and Discussion. Analysis univariate study this explain about level stress and change pressureblood on student in Nursing Magelang.

1. Univariate analysis

a. Table Characteristics Respondent

Table 1. Distribution Frequency Respondent Age, Type Sex, Change systole, Changediastole, Level Stress.

Characteristics Respondent	Frequency	Percentage(%)
Age		
20 years	2	3.2%
21 years	27	42.9%
22 years	34	54.0%
Total	63	100.0%
Type sex		
Man	11	17.5%
Woman	52	82.5%
Total	63	100.0%
Change systole		
Down	15	23.8%
Permanent	15	23.8%
Go on	33	52.4%

Total	63	100.0%	
Change diastole			
Down	19	30.2%	
Perm anent	18	28.6%	
Go on	26	41.3%	
Total	63	100.0%	
Stress Level			
Not Stress	16	25.4%	
Mild Stress	25	39.7%	
Moderate Stress	10	15.9%	
Heavy Stress	9	14.3%	
Stress Very heavy	3		4.8%
Total	63	100.0%	

Source : Data primary processed, 2022

The frequency distribution of respondents from a sample of 63 respondents can be seen that age respondent which divided in Three groups age with difference 1 yearthe majority of data obtained at the age of 22 years and in the 20 year group only there is 2 respondents. Whereas frequency type sex on table 4.1 on describe that majority respondent is manifold sex woman with a number of 52 respondents (82.5%) which means more than the number of respondents man of 11 respondents (17.5%).

Frequency change systole divided Becomes 3 category that is down, permanent and increase. As seen in table 1 the frequency of respondents with the majority the most is with the percentage of systole increased by 33 respondents (52.4%) and in systolic decreased and still obtained the same frequency results with a value of 23.8%. It was concluded that the result of the majority systolic change was increasing with the result of 33 respondents (52.4%). The changes in diastole listed in table 1 explain that it is known that there are 3 categories in this diastolic change where each categories have different valuesso that the highest majority is in diastole with an increase of 26 respondents (41.3%). While on

amount second highest is decreasing as much 19 respondents (30.2%).

The highest level of mild stress in nursing study program students in Magelang with frequency 25 respondents (39.7%) meanwhile there are 2 categories that are not far away amount percentage that is on category no stress and stress currently, however therethere are also 2 categories with percentages that are very far from the number of respondents who experience mild stress level.

2. Bivariate Analysis

a. Connection Level Stress With Change Pressure Blood systole

Table 2. Statistic test Connection Level Stress With Change Pressure Blood systole

Stress level	Change systole			Total	Spearman Rank	
	Down	Permanent	Go on		α	r
Not Stress	6 37.5%	9 56.3%	1 6.3%	16 100.0%	0.000	0.396
Stress Light	6 24.0%	2 8.0%	17 68.0%	25 100.0%		
Moderate Stress	1 10.0%	1 10.0%	8 80.0%	10 100.0%		
Heavy Stress	2 22.2%	2 22.2%	5 55.6%	9 100.0%		
Very Stress Heavy	0 0.0%	1 33.3%	2 66.7%	3 100.0%		
Total	15 23.8%	15 23.8%	33 52.4%	63 100.0%		

Source : Data Primary processed, 2022

The results in table 2 show the relationship between stress levels and changes in pressure blood, especially in systole, it was found that at mild stress levels, obtained existence increase amount change on systole where the trend is up. The results of statistical

tests listed in table 2 regarding The relationship between stress levels and changesin systolic pressure can be seen that the value of the correlation coefficient is 0.396 with *p value* = 0.001, so that the p value < 0.05, this means that Ha is meaningful, which means that there is a relationship between stress levels with change pressure blood systole on student Bachelor Applied in Nursing Magelang.

b. Relationship between stress levels anda changes in pressure with changes diastolic blood pressure

Table 3. Statistic test Connection Level Stress With Change Pressure Blood diastoleSource: Data Primary processed, 2022

Stress Level	Change diastole			Total	Spearman ranks	
					α	c
	Down	Permanent	Go on			
Not Stress	8 50.0%	8 50.0%	0 0.0%	17 100.0%	0.002	0.389
Stress Light	7 28.0%	6 24.0%	12 48.0%	25 100.0%		
Moderate Stress	1 10.0%	1 10.0%	8 80.0%	10 100.0%		
Heavy Stress	2 22.2%	2 22.2%	5 55,6%	9 100.0%		
Very Stress Heavy	1 33.3%	1 33.3%	1 33.3%	2 100.0%		
StressLight	19 28.6%	18 30.2%	26 41.3%	63 100.0%		
Total	8 50.0%	8 50.0%	0 0.0%	17 100.0%		

Results on table 3 show that connection level systole with change pressure blood diastole obtained results majority experience stress light with enhancement diastole amount 12 respondent with total 26 respondents who experienced an increase in blood pressure,especially diastolic. Results *Spearmank Rank* statistical test found that the correlation coefficient = 0.389 and p value = 0.002, so that scorep<0.05 which means there is connection. Thing this

states that Ha ismeaningful which means that there is a relationship between the level of stress with changes in blood pressure, especially diastolic in undergraduate students Applied in Nursing Magelang

Conclusion and Suggestions

A total of 25 respondents experienced mild stress levels (39.7%) with the majority aged 22 years as many as 34 respondents (54.0%). Based on the results of data analysis pressure change The results showed that those who experienced an increase in systole amounted to 52.4% and those who had experience increase on diastole amount 26 respondent (41.3%). Results test statistics *Spearman Ranks* states that there is a significant relationship with stress levels with change pressure blood with results *p-value* = 0.001 (< 0.05), and there is the relationship between stress levels and changes in diastole with *p-value* = 0.002 (< 0.05).

It is expected that final semester students can prepare assignments so that they can be better easy and complete the final task faster so it does not cause stress due to postponement of unfinished tasks. For further researchers to be able to do study which same and expected could develop study this. Researcher next could To do with give study about intervention for resolve stress level.

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