

THE RELATIONSHIP OF STRESS TO BLOOD PRESSURE AND BODY MASS INDEX IN PHARMACY STUDY PROGRAM STUDENTS AT PRIMA MEDAN UNIVERSITY

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ABSTRACT

Increased levels of academic stress in students can affect physical health, such as blood pressure and Body Mass Index (BMI). This study aims to determine the relationship between academic stress and blood pressure and BMI in Pharmacy Study Program students at Prima Indonesia University. This study used an analytical observational approach with a cross-sectional design, involving 4th semester students as research samples. Data were collected through the Perceived Stress Scale (PSS-10) questionnaire and measurement of blood pressure and BMI. Data were analyzed using Spearman's rho correlation test. The results showed a significant relationship between stress and blood pressure with a p-value of 0.029, but there was no significant relationship between stress and BMI with a p-value of 0.524. In conclusion, although there is a relationship between stress and blood pressure, stress levels are not directly related to BMI in university students. This study is expected to provide insight into the importance of stress management for student health.

KEYWORDS Academic Stress, Blood Pressure, Body Mass Index, Students



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INTRODUCTION

Every year, stress levels in Indonesia increase, Indonesia makes up 20% of the global population and as many as 47.7% of adolescents experience it. According to the Basic Health Research (Riskesdas) in 2013, the Indonesian population experienced mental emotional disorders nationwide, such as 6% anxiety. Stress is a situation where non-specific demands require a person to respond or take action, both physiologically and psychologically. (Nurrahmah et al., 2023).

According to the "*Hans Selye*" theory, stress is a non-specific response of the body to a trigger called a stressor. This response can be an emotional and mental response to a harmful external stimulus, which can cause physical health problems such as increased blood pressure or muscle tension. (Andriana & Prihantini, 2021). When stress occurs the adrenal glands located above the kidneys release

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catecholamine hormones, which consist of adrenaline and noradrenaline that induce the sympathetic nervous system, which causes an increase in breathing frequency, pulse rate, hormone release, blood pressure, digestive system, and increased blood pressure. (Asiah et al., n.d.).

Stress is unavoidable in everyday life, including in the Faculty of Pharmacy, pharmacy program. If stress continues and lasts for a long period of time, it will affect body weight, both underweight and overweight. (Andriana & Prihantini, 2021). Blood pressure is the pressure of blood flow in the arteries (Kowalski, 2010). Blood pressure is a very important factor in the circulatory system. Not all blood pressure is within normal limits so that it can lead to the emergence of disorders in blood pressure commonly known as hypertension (high blood pressure) and hypotension (low blood pressure). (Fadlilah et al., 2020).

Body Mass Index (BMI) is comparing a person's weight and height to determine their nutritional status. According to the Indonesian Ministry of Health, nutritional status is classified as: underweight with BMI < 17, normal 17-25, overweight 25-27 and obesity > 27. By assessing nutritional status, we can assess how stress affects nutritional status in individuals (Andriana & Prihantini, 2021). College students have a high risk factor for stress due to lifestyle, life demands, academic, social and economic demands that are sources of stress. Some students have different variables to reduce their stress, for example; consuming foods high in fat and calories (such as chocolate, matcha, etc.) and decreasing appetite. This can also trigger an increase in blood pressure, weight loss or gain.

Based on the above, the researcher wants to examine how stress relates to blood pressure and body mass index (BMI) in Pharmacy Study Program students at Prima University Medan. This study generally aims to determine the relationship between stress and blood pressure and Body Mass Index (BMI) in Pharmacy Study Program students at Prima Indonesia University. Specifically, this research wants to understand the relationship between academic stress with blood pressure and BMI and identify the causes of academic stress which are the main factors in increasing blood pressure and BMI.

The theoretical benefit of this research is to add information about the relationship between academic stress and blood pressure and BMI in students, as well as a reference for future researchers who want to examine similar topics. The expected practical benefit is to obtain evidence of the relationship between stress and blood pressure based on BMI through questionnaires and direct measurements, the results of which can be used to provide education to students who experience stress. In addition, for researchers, this study can add insight and experience related to the relationship between stress and blood pressure and BMI in college students.

RESEARCH METHOD

This study is an analytical observational study with a cross-sectional approach, which aims to describe the relationship between stress and blood pressure and Body Mass Index (BMI) in Pharmacy Study Program students at Prima University Medan. The research was conducted at Prima University Medan from April to June 2024, with a population of all 4th semester Pharmacy students. Sampling using the total sampling method based on inclusion and exclusion criteria,

namely active students aged 18 years and over who are willing to participate and do not have a history of cardiovascular disease or hypertension.

Primary data were obtained through the Perceived Stress Scale (PSS-10) questionnaire and direct observation, which were then processed with the SPSS program. Data were analyzed using a descriptive approach to describe the variables, presented in tabular form. The final analysis used chi-square test and Pearson or Spearman-rho correlation test to determine the relationship between stress and blood pressure and BMI. Operational definitions of research variables include academic stress, blood pressure, and BMI with measurements using a questionnaire, sphygmomanometer, and weight and height measuring instruments.

RESULT AND DISCUSSION

Respondent Characteristics

Based on the results of the study, the characteristics of respondents including gender, age, stress status, body mass index and blood pressure status of this study were analyzed using chi-square analysis to determine the relationship and influence comprehensively on the index aspect population according to other variables recommendations for prevention and effective treatment in reducing the risk of stress in medical faculty students of pharmacy study program in 2022.

Table 1. Respondent Characteristics

Characteristics	F	%
Gender		
Male	12	6%
Female	188	94%
Age		
18 - 20	142	71%
21 - 23	58	29%
Stress Status		
Mild Stress	8	4%
Moderate Stress	158	79%
Severe Stress	34	17%
Body Mass Index (BMI) Status		
Normal	90	45%
Underweight	23	11,5%
Overweight	39	19,5%
Obesity 1	33	16,5%
Obesity 2	15	7,5%
Blood Pressure Status		
Normal	130	65%
Hypotension	7	3,5%
Pre Hypertension	40	20%
Grade 1 Hypertension	16	8%
Grade 2 Hypertension	7	3,5%
Total	200	100%

Based on table 1 shows that of the 200 respondents, the majority of respondents were categorized as late adolescents, aged 19-20 years as many as 142 respondents (71%). The majority of respondents in this study were female, namely

188 respondents (94%). The majority of respondents' stress status is moderate stress as many as 158 (79%). The majority of respondents with body mass index status in the normal category were 90 respondents (69%). The majority of respondents with normal blood pressure status were 130 respondents (65%).

Descriptive Analysis of Stress Status with Blood Pressure Status

Table 2. Analysis of Stress Status with Blood Pressure Status

Blood Pressure Status	Total	Percent tage	Stress Status			Weight	Percent tage	
			Light weight	Percent tage	Med ium			
Hypotension	7	3,5%	0	0%	6	85,7%	1	14,3%
Normal	130	65%	6	4,6%	98	75,4%	26	20%
PreHypertension	40	20%	2	5%	33	82,5%	5	12,5%
Hypertension 1	16	8%	0	0%	15	93,8%	1	6,3%
Hypertension 2	7	3,5%	0	0%	6	85,7%	1	14,3%
Total	200	100%	8	4%	158	79%	34	17%

Table 2 shows that the most blood pressure status respondents according to stress status occurred in normal blood pressure status 130 respondents by (65%) with stress status being in moderate stress totaling 98 respondents by (75.4%), severe stress totaling 26 respondents by (20%), mild with a total of 6 respondents by (4.6%) In hypotension there were 7 respondents by (3.5%) with the most stress status being moderate stress totaling 6 respondents by (85.7%), severe stress 1 respondent by (14.3%). In Prehypertension, there were 40 respondents (20%) with the highest moderate stress status of 33 respondents (82.5%), severe stress amounted to 5 respondents (12.5%), mild stress amounted to 2 respondents (5%). In Hypertension 1, there were 16 respondents by (8%) with moderate stress 15 respondents by (93.8%) and severe stress amounted to 1 respondent by (6.3%) and Hypertension 2 amounted to 7 respondents by (3.5%) with moderate stress totaling 6 respondents by (85.7%) and severe stress 1 respondent by (14.3%).

Descriptive Analysis of Body Mass Index on Stress Categories and Blood Pressure Status

Table 3. BMI Analysis with Stress Categories

IMT	Total	Percentage (%)	Stress Status					
			Lightweight	%	Medium	%	Weight	%
Normal	90	45%	8	8,9%	73	81,1%	9	10%
Underweight	23	11,5%	0	0%	16	69,6%	7	30,4%
Overweight	39	19,5%	0	0%	29	74,4%	10	25,6%
Obesity 1	33	16,5%	0	0%	26	78,8%	7	21,2%
Obesity 2	15	7,5%	0	0%	14	93,3%	1	6,7%
Total	200	100%	8	4%	158	79%	34	17%

Table 4. Analysis of BMI with Blood Pressure Status

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IMT	Blood Pressure Status											
	T otal	Perc enta ge	Hyp otens ion	Perc enta ge	No rm al	Perc enta ge	PreHy perten sion	Perc enta ge	Hypert ension T.1	Perc enta ge	Hypert ension T.2	Perc enta ge
Underweight	23	11,5%	0	0%	20	87%	2	8,7%	1	4,3%	0	0%
Normal	90	45%	4	4,4%	62	68,9%	15	16,7%	5	5,6%	4	4,4%
Overweight	39	19,5%	0	0%	19	48,7%	14	35,9%	5	12,8%	1	2,6%
Obesity 1	33	16,5%	2	6,1%	23	69,7%	5	15,2%	3	9,1%	0	0%
Obesity 2	15	7,5%	1	6,7%	6	40%	4	26,7%	2	13,3%	2	13,3%
Total	200	100%	7	3,5%	130	65%	40	20%	16	8%	7	3,5%

Table 4 shows that the most stress status respondents according to BMI status occurred in normal status 90 respondents by (45%) with the most stress status being in moderate stress totaling 73 respondents by (81.1%), severe stress status with a total of 9 respondents by (10%) and light stress totaling 8 respondents (8.9%) at IMT Underweight amounted to 23 respondents by (11.5%) with the most moderate stress status 16 respondents by (69.6%) and severe stress totaling 7 respondents by (30.4%). At IMT Overweight, there were 39 respondents (19.5%) with the most stress status in moderate stress totaling 29 respondents (74.4%), severe stress totaling 10 respondents (25.6%). At IMT Obesity 1, there were 33 respondents (16.5%) with the highest stress status of moderate stress totaling 26 respondents (78.8%) and severe stress status totaling 7 respondents (21.2%). At IMT Obesity 2, there were 15 respondents (7.5%) with the highest stress status of moderate stress totaling 14 respondents (93.3%) and severe stress status totaling 1 respondent (6.7%). Research conducted with different results between stress status with the highest BMI status value at normal BMI and the highest stress status in moderate stress.

Table 4 shows that the most stress status respondents according to BMI status occurred in normal 90 respondents by (45%) with the most blood pressure being in normal hypertension totaling 62 respondents by (68.9%), prehypertension with 15 respondents by (16.7%) in grade I hypertension totaling 5 respondents (5.6%) in Underweight BMI totaling 23 respondents by (11.5%) with the most normal blood pressure 20 respondents by (87%), prehypertension totaling 2 respondents by (8.7%), grade I hypertension totaling 1 respondent by (4.3%). At IMT Overweight, there were 39 respondents (19.5%) with the most blood pressure status in normal blood pressure totaling 19 respondents (48.7%), prehypertension totaling 14 respondents (35.9%), grade I hypertension totaling 5 respondents (12.8%) and grade II hypertension totaling 1 (2.6%). At IMT Obesity 1 there were 33 respondents (16.5%) with the highest blood pressure status normal blood pressure amounted to 23 respondents (69.7%), prehypertension amounted to 5 respondents (15.2%), grade I hypertension amounted to 3 respondents (9.1%) and

in hypotensive status amounted to 2 respondents (6.1%). At IMT Obesity 2 amounted to 15 respondents by (7.5%) with the most blood pressure status normal blood pressure amounted to 6 respondents by (40%), prehypertension amounted to 4 respondents by (26.7%), hypertension status level I and level II amounted to 2 each by (13.3%) and hypotensive status amounted to 1 respondent by (6.7%). Research conducted with different results between blood pressure status with the highest BMI status value in normal BMI and the highest blood pressure status in normal blood pressure.

Analysis of the Relationship of Stress Level to Blood Pressure and Body Mass Index

Table 5 Analysis of the Relationship between Stress Level and Blood Pressure and BMI

Variables	Stress Level	
	Correlation Coefficient	Sig.(2-tailed)
Blood Pressure	-0,075	0,029
Body Mass Index	0,045	0,524

Spearman's rho correlation test on blood pressure variables as can be seen in table 5 produces a correlation number $r = -0.075$ with sig (2-tailed) = 0.029 ($p > 0.05$) with the result of a correlation value of -0.075 with a very weak correlation level and in making a decision on the significance value there is a relationship. produces a correlation number $r = 0.045$ with sig (2-tailed) = 0.524 ($p > 0.05$). So it can be concluded with the results of the correlation value of 0.045 which is where the level of correlation strength has a very weak relationship and has no relationship between stress levels and body mass index.

Analysis of the Relationship between Blood Pressure and Body Mass Index

Table 6. Analysis of Blood Pressure Relationship with Body Mass Index

Variables	Body Mass Index	
	Correlation Coefficient	Sig.(2-tailed)
Blood Pressure	0,154	0,030

Spearman's rho correlation test on the stress level variable as can be seen in table 6 produces a correlation number $r = 0.145$ with sig (2-tailed) = 0.030 ($p < 0.05$). So it can be concluded with the results of the correlation value of 0.154, where the level of correlation strength has a very weak relationship and has no relationship between blood pressure and body mass index.

Discussion

This study aims to determine the frequency value of each variable and determine the relationship between variables. The method used in retrieving results is the chi square method and the Spearman rho test. The subjects in this study were

respondents with stress levels and body mass index towards hypertension at the Faculty of Medicine, Pharmacy Study Program with a total of 200 respondents.

Gender status shows that there are more women than men. Female respondents were 188 respondents 94%, while men were only 12 respondents 6%. The results of this study with the number of female gender being the most because the sampling or respondents was carried out in the pharmacy program where the majority of women compared to men.

In the late adolescent age status (18-20 years) with the highest number of 142 respondents 71% followed by early adulthood (21-23 years) with 58 respondents 29%. The results of this study are in line with previous researchers conducted by Glenda in Waleo Dua Village in 2023, mostly dominated by young age with 76 respondents (62.3%). (Glenda 2023). This is also supported by Lailatul who was conducted at Pakis Surabaya Health Center in 2022, most of them were in the age range of 23-24 years, totaling 23 people (40%). Furthermore, in adolescents aged 21-22 years, there were 16 people (28%). In adolescents aged 19-20 years, there were 13 people (23%), and 18 years of age amounted to 5 people (9%), which concluded that many teenagers were hypertensive. (Freeisi Makalew et al., 2023).

In the status of body mass index with stress levels, the majority of body mass index to moderate stress levels with the highest number of 158 responses amounted to (79%) at normal BMI 73 respondents (81.1%), underweight BMI amounted to 16 respondents by (69%), overweight BMI amounted to 29 respondents by (74.4%), Obesity I amounted to 26 respondents by (78.8%) and Obesity II amounted to 14 (93.3%). Followed by the level of severe stress amounted to 34 respondents by (17%) at normal BMI 9 respondents by (10%), Underweight amounted to 7 respondents by (30.4%), Overweight amounted to 10 respondents by (25.6%), Obesity I amounted to 7 respondents by (21.2%) and Obesity II amounted to 1 respondent by (6.7%). The results of this study are in line with research conducted by Ketut Herlin Simoah on new students 2020/2021 FKM UNAIR Table 2 shows that respondents with moderate stress levels have a normal Body Mass Index (BMI) of 63.6% and 10.9% obesity. Stress is the body's response to pressure or stressors that it cannot overcome. Stress is a factor that does not directly cause changes in BMI values. Stress can change a person's diet and eating preferences, known as stress coping. (Serin, 2018). This is also supported by (Kumaladewi et al., 2018) that the underweight subject group in moderate stress is greater than mild stress (2.26 times). It also appears that the overweight subject group in moderate stress is smaller than mild stress, while in the severe stress group it is greater than mild (2.26 times). In addition, the group of overweight subjects under severe stress was greater than that under moderate and mild stress. (Kumaladewi et al., 2018)

In the relationship between body mass index status and blood pressure status shows normal blood pressure to be the largest number of 130 by (65%) with the highest body mass index status in normal status 90 by (45%) followed by prehypertension status with a total of 40 respondents by (20%) and based on the results of the spearman's rho test analysis with a sig value (2-tailed) of 0.030 <0.05 which means the relationship with a correlation value of 0.154 which is concluded there is a weak relationship between body mass index and stress.

Good nutritional status can affect nutritional intake. From a balanced nutritional status between the intake of food nutrients and the body's nutritional needs is an element that forms an important health status. A poor diet can affect the incidence of hypertension compared to a good diet. (Al-Fariqi et al., 2021).. Food intake that is less than daily needs can cause the body to become thin, so there can be an increase in high blood pressure by people who have a thin BMI. (Stikes et al., 2021).

The results of this study are also in line with research conducted by Lailatul at Pakis Surabaya Health Center with the results of the Spearman Rank analysis test conducted by researchers, the results of the p value are 0.000, then if the p value $< \alpha$ (0.05) which means there is a relationship between the incidence profile of hypertension and body mass index in adolescents aged 18-24 years at Pakis Surabaya Health Center. (Jannah & Simamora, 2022). This study is in accordance with the results of other studies conducted by Melliya Sari et al. (n.d.) 2023)The results of the study also obtained a p value = 0.000, which means that this study is accepted and there is a relationship between BMI and blood pressure in hypertensive patients at the Heart Poly of Husada Utama Surabaya Hospital.

The results of this study are similar to research conducted by (Ulumuddin & Yhuwono, 2018)where the results of the research conducted showed a positive correlation between body mass index and blood pressure with a significance value obtained of 0.029 with a correlation coefficient of 0.154. The results of this study are also supported by research conducted (Abineno et al., 2022) where from the results of research conducted between body mass index and the incidence of hypertension obtained a significance value of 0.039 with a correlation coefficient of 0.197 so it can be concluded that there is a positive relationship between body mass index and the incidence of hypertension in adults.

In the relationship between stress status and blood pressure status, it shows from the results of research with moderate stress status that dominates, totaling 158 respondents (79%) with normal hypertension status totaling 130 respondents (65%) and based on the results of the Spearman's Rho correlation test on the stress level variable obtained correlation $r = -0.075$ with a sig value (2-tailed) = $0.029 > 0.05$ which means that there is a relationship between stress levels and blood pressure in pharmacy study program students at Prima Indonesia University. The results of this study are in line with previous researchers conducted by Nurdiansyah Lutfi at SMK Sri Tanjung Banyuwangi in 2024. obtained a correlation coefficient of 0.169 rounded to 0.2 (0.00-0.25) which means it has a weak relationship. The significance value (sig. 2-tailed) is 0.029 (< 0.05), meaning it is correlated. Although the relationship between the two is weak, it does not rule out the possibility of a relationship between the two variables, because the significance value of the two variables is still related. In the results of previous research conducted by researcher Mira Octavia Lingga in 2023 at the Padang Bulan Medan Health Center with different results, the results of the spearman test obtained the value of stress levels with blood pressure p-value = 0.030 with $\alpha = 0.05$. So $0.030 < 0.05$ which means there is a significant relationship between stress levels and blood pressure in hypertensive patients of productive age at the Padang Bulan Medan Health Center in 2023. The value of $r = 0.246$ shows the correlation between stress levels and

blood pressure which is positive with a weak level of closeness. (Octavia Lingga et al., 2024). The results of this study are supported by research conducted by Rohmatul (Awaliyah et al., 2020) entitled the relationship between stress levels and the incidence of hypertension in productive age at Gracia Clinic Ungaran Semarang Regency. The results showed that there was a significant relationship between stress levels and the incidence of hypertension in productive age at the Gracia Ungaran Clinic with a p value of 0.013 ($\alpha = 0.05$).

Based on the results of data analysis, there is a relationship between stress levels and blood pressure in productive age. In this case it shows that stress is the highest trigger with an increase in blood pressure. This is evidenced by most respondents with stress experiencing an increase in blood pressure, some respondents are also stressed but do not experience an increase in blood pressure this is due to age factors. From the results of the researcher's research using questionnaires distributed to respondents, most of the people there often experience an increase in emotions and anxiety that arises in themselves continuously, this is because their family's economy is lacking, many people complain because their plantations have withered a lot so that people in this area get less income every day, so that people there only think about their economic problems so that they do not control their food, causing people there to be prone to increased blood pressure. If stress is prolonged, it can cause an increase in blood pressure, if you adopt a healthy lifestyle and exercise diligently, it can lower blood pressure and reduce the incidence of hypertension. (Hardin et al., 2023)..

According to the researcher's assumption, it is said that there is a relationship between stress levels and blood pressure in hypertensive patients due to a positive / direct and negative pattern, meaning that the greater the stress level score, the higher the increase in blood pressure. The cause of productive age when experiencing stress is because the hormone adrenallin will be released and will then increase blood pressure through arterial contraction and increased heart rate. If the stress continues, the blood pressure will remain high so that the person will experience hypertension.

In the relationship between stress status and body mass index based on the results of the Spearman's Rho correlation test on the stress level variable obtained correlation $r = 0.045$ with a sig value (2-tailed) = $0.524 > 0.05$ which means that there is no relationship between stress levels and body mass index in pharmacy study program students at Prima Indonesia University. This research is also in line with previous researchers by Fenni in Jakarta with the results of the study found that there is no relationship between physical activity and BMI with a p value of 0.713. Research related to stress levels in students has to do with body mass index, with the results that there is no significant relationship between stress levels and BMI underweight or overweight. The same research conducted on high school students / adolescent girls resulted in a relationship between stress and body mass index. This shows that the more mature the stress management is considered better than adolescence or children, so that at the student level is more able to manage stress than at the level below. (Ramadhan Fenni, 2024).

These results are also the same as the results of research by Ni Luh at Udayana University Bali that there is no relationship between stress and BMI. explained that

the stress experienced by each individual is only a matter of days or temporary so that there is no relationship between stress and BMI to solve life problems, reduce and overcome stress is coping. There are 2 forms of coping strategies, namely; *Emotion-focused coping* and *problem-focused coping*. *Emotion-focused coping* is a way of diverting focus and attention from the source of the problem, for example by pouring out feelings or writing about the problems one faces, meditation, or by praying. *Problem-focused coping* can be applied because stress comes from work or pressure while achieving a goal such as in completing a task. In applying problem-focused coping, individuals have the ability to solve problems, good time management, with social support to overcome problems that are needed is the confidence of oneself to assess and weigh whether the situation can be controlled. Differences in stress strategies in each individual do not all have an impact on increasing eating patterns and resulting in an increase in body mass index. (Ni Luh, 2021).

This is in line with research conducted by (Andriana & Prihantini, 2021) which states that there is no significant relationship between stress levels and nutritional status in students of the Faculty of Medicine, Christian University of Indonesia. (Andriana & Prihantini, 2021). This is in line with Putri's research that there is no correlation between stress levels and nutritional status in final year students. (Putri, 2021) Another study also found that there was no relationship between stress levels and BMI in 2022 Unisba Faculty of Medicine students. (Abhari et al., 2023) On the other hand, (Purwanti & Ardiani Putri, 2017) reported a significant correlation between stress levels and BMI of students. This is caused by hormonal changes in individuals in stressful situations that can trigger increased fat accumulation in the body. A person with a high body mass index tends to have higher concentrations of cortisol, which activates fat storage enzymes and sends hunger signals to the brain. Stress is the body's response to conditions in its environment. Based on theory, under stress conditions there is an increase in the secretion of the hormone cortisol which can stimulate the body to produce the hormones leptin, insulin and the neuropeptide system that creates hunger. (Purwanti & Ardiani Putri, 2017) However, the increase in BMI can be caused by many things such as poor diet, abnormal appetite, lack of physical activity, genetic factors, and poor sleep habits. One study showed that obesity in medical students was caused by changes in lifestyle such as unhealthy eating and decreased physical activity. (Abhari et al., 2023) Stress is the body's response to pressure or stressors that cannot be overcome. Stress is a factor that does not directly cause changes in BMI. Stress can change a person's diet and eating preferences, known as stress coping. (Serin, 2018)

(Annisa Rizqa Rahma Nur et al., 2024) argues that prolonged stress tends to have a negative impact on the sufferer, especially physical health problems. One of the negative impacts of stress on physical health is changes in body mass index, namely, obesity, overweight and underweight due to the activation of an unbalanced generalization system. Stress affects eating behavior, but it turns out that changes in eating behavior during stress are not related to nutrient intake so there is no change in nutritional status. There are many other factors that influence nutrient intake besides *emotional overeating*. These include nutritional knowledge, parental

control, time availability, peers, etc. From this study, it was also found that the level of stress with body mass index of Prima University Medan students with moderate stress, while normal BMI amounted to 90 or 45% of all respondents.

CONCLUSION

Based on the results of the study, more than 79% of respondents experienced moderate stress, with the majority of respondents being female. The respondents' Body Mass Index (BMI) status was dominated by normal BMI, followed by overweight BMI. In blood pressure status, most students have normal blood pressure (65%), followed by pre-hypertension status (20%). There is a significant relationship between blood pressure and stress levels in students of the Faculty of Medicine, Pharmacy Study Program, Prima Indonesia University Medan, with a p-value of 0.029 and a correlation of -0.075, which shows a weak relationship in productive age. However, no relationship was found between BMI and stress level with a p-value of 0.524 and a correlation of 0.045. In addition, there was a relationship between blood pressure and BMI with a p-value of 0.030 and a correlation of 0.154, which also showed a weak relationship in productive age. It is recommended for respondents to avoid risk factors for hypertension, especially stress, with good stress management. For future researchers, it is recommended to control confounding factors or examine other risk factors for hypertension, such as cholesterol and sodium intake, so that the results of the study are more optimal.

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