

The Relationship Among Dietary Habit, Physical Fitness and Stress to the Obesity Condition of Indonesian National Police (Polri) Personnel

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Abstract. Obesity is a physical condition that is of great concern to Polri Personnel. Apart from having an excessive anthropometric impact, it can also result in less optimal physical condition performance. This research aims to find out how big is the relationship: 1) between dietary habit and the obesity condition of Polri personnel, 2) between physical fitness and the obesity condition of Polri personnel, 3) between stress and the obesity condition of Polri personnel, and, 4) among dietary habit, physical fitness, and stress on the obesity condition of Polri personnel. This research is a type of correlational research. This research was conducted with subjects totaling 584 Polri personnel. Instruments used in the research were dietary habit instrument using the Food Frequency Questionnaires for Adults, physical fitness instrument using the National Police Physical Fitness Test, and stress instrument using the Police E-Mental Application. Data analysis techniques in the research involved product moment correlation test analysis, multiple correlation with the regression line equation, prerequisite test and hypothesis test as well as univariate and bivariate analysis. This research shows that: (1) there is a relationship between dietary habit and the obesity condition of Polri personnel with a p-value of 0,631 with significance value of 0,000, (2) there is a relationship between physical fitness and the obesity condition of Polri personnel with a p-value of 0,433 with significance value of 0,000, (3) there is a relationship between stress and the obesity condition of Polri personnel with a p-value of 0,429 with significance value of 0,000, (4) there is a relationship among dietary habit, physical fitness, and stress on the obesity condition of Polri personnel by obtaining an Fcount value of 13,143 and an Ftable value of 8,532 marked by an R value of 0,537 with a significance level of 0,000. Based on the research results above, it can be concluded that there is a fairly strong relationship among dietary habit, physical fitness, and stress on the obesity condition of Polri personnel, and it can be seen that dietary habit has the most significant influence compared to physical fitness and stress. Suggestion: Polri needs to adopt programs that encourage healthy dietary habit for the personnel, It is important for the Regional Police (Polda) physical fitness bureau to implement a comprehensive and sustainable physical fitness program, and for the Polda psychology bureau to provide programs or periodic checks that can help managing and reducing stress in the workplace.

Key words: Dietary Habit, Physical Fitness, Stress, Obesity

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INTRODUCTION

The presence of the Indonesian National Police (Polri) in society is very important, because of its role and function as protector, protector and servant of the community (Arif, 2021). In addition, the National Police has a duty that has the potential to be involved in human problems, child abuse, and suicide or death (Violanti et al., 2019). Performance-related and health-related physical fitness is essential for police officers to perform physically demanding tasks effectively and with reduced risk of injury (Mona et al., 2019). Therefore, a member of the police needs to have good fitness, including a proportional body appearance to improve safety and performance in law enforcement (Dawes et al., 2016). However, because they spend a lot of time in service, the physical fitness of Indonesian National Police personnel is less maintained after they have served, thus causing obesity (Stojković et al., 2022).

The Banjarmasin City Resort Police is one of the police agencies that handles security in urban areas. In 2016, based on a preliminary study conducted at the Banjarmasin City Police Resort using secondary data, it was found that out of 901 police officers, 93 people (10.32%) were obese. Poor diet is a trigger for obesity, if energy intake is greater than calories expended then this can be a trigger for obesity. Obesity has now become a health problem and is associated with an increase in non-communicable diseases. The prevalence of obesity is increasing in both developed and developing countries. Research conducted by the Asia Pacific Cohort Study Collaboration shows a pandemic increase in overweight by 20% to 40% from year to year (Nugroho et al., 2019). Obesity is a chronic disease that is multifactorial and can be defined as an increase in body fat accumulation (Sriwahyuni et al., 2021).

Obesity is influenced by several factors, one of which is dietary habit, the definition of dietary habit according to experts varies, but generally refers to the habits and style of food consumption of a person or group of people. According to nutritionists, diet is the way individuals consume food on a daily basis, including the type of food consumed, the number of servings, the frequency of eating, and certain eating habits. Dietary habit can have a significant impact on a person's health and well-being. According to the author of the book *Nutrition for Sport and Exercise* (Maughan, 2023), Diet is a correlation in a variety of foods that will be consumed in a structured way (Yuwono & Dwijanto, 2019). They emphasize the importance of a balanced diet to support physical activity and health. While from the United States Department of Health and Human Services (HHS) said, this department defines a healthy diet as the way people choose to eat, with what they choose to eat, how much, and when they choose to eat. They encourage a diet rich in fruits, vegetables, whole grains, lean or low-fat protein, and low-fat or non-fat dairy products. Then according to (Willet, 2003) who is a leading nutritionist describes diet as the whole of the food consumed over several days or weeks. He also emphasizes the importance of food composition in the diet, such as the intake of fat, carbohydrates, protein, and fiber. (Mutiawati, 2019) also defines diet as habits and preferences in the selection of food and beverages that reflect, and in some ways shape, the culture, traditions, religion, and social norms of a person or group.

Some important points in the definition of diet in general such as, food composition, diet includes the type of food consumed, such as protein, carbohydrates, fat, fiber, vitamins, minerals, and water. Frequency of meals, diet involves the frequency of meals, which is the number of times a person eats in a day. For example, three large meals or perhaps more frequently with snacks between main meals. Meal timing, meal timing refers to the schedule of meals throughout the day, including breakfast, lunch, dinner and snacks between main meals (Purwandhani & Nancy, 2024). According to (Litaay et al., 2021) a dietary habit that is balanced and in accordance with individual nutritional needs is essential to support a person's health and well-being. Good dietary management can help prevent disease, maintain a healthy weight, and improve overall quality of life. Considering nutrition, food variety, and appropriate portions are important steps in designing a good dietary habit.

Physical fitness is also important to maintain. Therefore, some people regularly do various exercises and physical activities, such as exercising. By exercising, the body will become more fit and less prone to disease. In addition to a stable health condition, physical fitness exercises will also make the body feel fresher. In addition to physical exercise, a person's physical fitness can also be influenced by various factors, such as the food consumed. Of course, it is common knowledge that nutritious food will make the body healthier. Conversely, there are several types of food that can interfere with the health of the body because they contain harmful substances. Despite its importance, there are still many people who do not understand what physical fitness is and how to maintain it (Made, 2020).

Good physical fitness is an important indicator of general health for Polri members. It can help reduce the risk of chronic diseases such as heart disease, diabetes, and high blood pressure. By maintaining good health, police officers can remain productive and contribute optimally to their work (Novia Ramadhani, 2022). A Polri personnel must have endurance capabilities, Polri tasks often require high physical endurance. In emergency situations or dangerous circumstances, physical fitness can make a big difference in survival and effective performance. Regular physical exercise can help reduce stress and improve mental and emotional well-being. This is especially important for personnel of the Indonesian National Police who often face high pressure in their duties. Moreover, in dealing with physical fitness, there is a need for adequate and not excessive composition (Yuwono et al., 2014). Optimal performance, good fitness can improve athletic and physical performance, which can be applied in various aspects of work, including physical training, security surveillance, and investigations. Role modeling, police officers who maintain physical fitness can also serve as role models

for the community. They can inspire others to live healthy and active lives (Saras, 2023). Therefore, Polri has an obligation to implement a rigorous physical training program and expects its members to maintain regular physical fitness. It is not just about fulfilling physical requirements, but also about keeping themselves ready in any situation that may occur in the course of carrying out their duties for the sake of maintaining public security and order (Solihin et al., 2020).

Physical fitness possessed by a good police officer is very important to improve performance and anticipate early retirement due to degenerative diseases. A personnel of the police who has a burden of duties such as maintaining public security, enforcing the law and providing guarantees of protection, protection and service to the community, then every personnel of the police must have the ability to support to ensure the creation of these conditions, this ability is to have good physical fitness. Physical fitness is important because if personnel of the police do not have an adequate level of physical fitness, then the ability to work productivity is not maximized and the process of service to the community is delayed (Hasibuan et al., 2021). Therefore, during police education the main training menu is aerobic endurance training, as aerobic endurance has been identified as a good predictor of performance in work-related physical tests for police officers, correctional officers, and firefighters (Cartiman et al., 2019). Conversely, lower levels of aerobic endurance have been associated with an increased risk of premature death from all causes as well as with dropout rates from police schools and an increased number of injuries in police officers. Given the importance of endurance to police personnel, aerobic endurance has become an integral part of the recruitment and education process of police students, as well as their careers once they graduate to become police officers. With the importance of aerobic endurance, physical training activities in the police force are very important and must be maintained once in service (Solihin et al., 2020)..

In addition, stress is the body's physiological and psychological response to certain situations or pressures, both physical and mental, that are perceived as a threat, challenge or overload. Stress is a natural reaction that can affect various aspects of a person's life, both positively and negatively. Stress reactions can include increased heart rate, faster breathing, increased production of stress hormones such as cortisol, as well as changes in levels of awareness and alertness (Hosea, 2020) . There are two main types of stress namely: (1) Positive Stress (Eustress), this is the type of stress that can motivate and improve one's performance. Examples are the stress an athlete feels before a competition or the stress a person feels when they have a deadline to complete an important project. (2) Negative Stress (Distress), this is the type of stress that is detrimental to one's health and well-being. Negative stress can contribute to a variety of physical and mental health problems, such as anxiety disorders, depression, insomnia, and other physical health problems (Ul Haque et al., 2021).

The relationship among dietary habit, physical fitness, stress, and obesity conditions is complex and can be influenced by many factors. Some of the ways in which this relationship can be established such as diet and obesity, an unbalanced diet especially one that is high in saturated fat, added sugar, and calories, can lead to weight gain (Yunitasari et al., 2019). Some people tend to respond to stress by overeating or choosing unhealthy foods (comfort foods) that are rich in sugar or fat. This can be a contributing factor to weight gain if stress is prolonged. A balanced diet and physical fitness with adequate nutritional intake supports physical fitness. Foods containing complex carbohydrates, protein, vitamins and minerals can help the body to perform physical exercise effectively. Regular physical activity can help control weight and reduce the risk of obesity. Physical fitness boosts metabolism and helps burn calories, which is important for maintaining a healthy weight. Exercise releases endorphins that can improve mood and reduce stress levels. Lack of physical activity can increase the risk of stress which can trigger unhealthy eating patterns. Chronic stress can affect hormones that regulate appetite and fat storage in the body (Kinansi et al., 2023).

Prolonged stress can trigger cravings for overeating, especially foods high in fat and sugar, which can contribute to obesity. The relationship among dietary habit, stress and physical fitness is complex. Prolonged stress can affect diet and may inhibit motivation to exercise. On the other hand, a balanced diet with regular physical activity can help reduce stress (Madika, 2022). In an effort to prevent or treat obesity, it is important to consider the relationship between these three factors together. Adopting a healthy diet, maintaining physical fitness, and managing stress can help reduce the risk of obesity and improve overall health in personnel of the Indonesian National Police.

METHODS

The research design used was correlational. The affordable population in this study were personnel of the Police in the Yogyakarta Special Region Police consisting of men and women totaling 584 people. The instruments used were a dietary habit questionnaire using the Food Frequency Questionnaires for Adults, the Polri physical fitness test, the Polri E-Mental Application, body scales, height meters / measuring devices, and obesity charts. Data analysis techniques in this study using product moment correlation test analysis, multiple correlations using regression line equations, prerequisite tests and hypothesis tests as well as univariate and bivariate analysis[SS1].

RESULTS AND DISCUSSION

This study is about the relationship among diet, physical fitness and stress on the obesity condition of Polri personnel in the Yogyakarta Special Region Police with the following results.

Table 1. Data on Diet, Physical Fitness, Stress Level, and Obesity[SS2]

Respondent Characteristics	Frequency	Percentage
Dietary Habit		
Unbalanced	421	72,1%
Balanced	163	27,9%
Physical Fitness		
Very Good	2	0,3%
Good	18	3,1%
Simply	246	42,1%
Insufficient	240	41,1%
Very Poor	78	13,4%
Stress Level		
Severe	186	31,8%
Moderate	303	51,9%
Normal	2	0,3%
Mild	93	15,9%
Obesity		
Obesity	297	50,9%
Pre-Obesity	93	15,9%
Normal	194	33,2%

The results showed that the majority of diets were unbalanced, namely 527 respondents (90.2%). The next characteristic is physical fitness with results in the Fair category as many as 284 respondents (48.6%). The results of the stress level at the Moderate level were 303 respondents (51.9%). And the results of Obesity body mass index characteristics as many as 297 respondents (50.9%).

The normality test was carried out using the Kolmogorov-Smirnov formula with the help of the SPSS program. The rule used to determine whether or not a research data is normal is if $p > 0.05$ (5%) then the data is declared normally distributed. The results of the normality test can be seen in the table below.

Table 2. Normality Test

Group	P Value	Significance	Description
Dietary Habit	0,200	0,05	Normal
Physical Fitness	0,219		Normal
Stress Level	0,243		Normal
Obesity	0,210		Normal

From the results above, a significant value (p) >0.05 is obtained, so it can be concluded that the data is declared normally distributed.

Table 3. Homogeneity Test

Levene Statistic	df1	df2	Sig.
239.890	3	2332	0,340

Based on statistical analysis of homogeneity tests that have been carried out using the Levene Test. The calculation results obtained a significance value of $0.340 \geq 0.05$. This means that the data group has a homogeneous variant. Thus the population has a similar variant or homogeneity.

Table 4. Relationship between diet and obesity

Dietary Habit	Normal	Pre-Obesity	Obesity	Total	Sig.	P-value
Balanced	154	9	0	163	0,000	0,631
Unbalanced	40	84	297	421		
	Total			584		

Table 4. above presents statistical data on the correlation test of dietary variables with obesity conditions obtained a significance value of $0.000 < 0.05$, it can be concluded that there is a significant relationship between dietary patterns and obesity conditions. The correlation value obtained is 0.631, which means that the strength of the relationship between diet and obesity is strong.

Table 5. Relationship between Physical Fitness and Obesity Condition

Physical Fitness	Normal	Pre-Obesity	Obesity	Total	Sig.	P-value
Very Good	0	0	2	2	0,000	0,433
Good	1	0	17	18		
Simply	109	29	108	246		
Insufficient	84	22	134	240		
Very Poor	0	42	36	78		
	Total			584		

Table 5. above presents statistical data on the correlation test of physical fitness variables with obesity conditions obtained a significance value of $0.000 < 0.05$, it can be concluded that there is a significant relationship between physical fitness and obesity conditions. The correlation value obtained is 0.433, it can be interpreted that the strength of the relationship between physical fitness and obesity conditions is Moderately Strong.

Table 6. Relationship between Stress Level and Obesity Condition

Stress Level	Normal	Pre-Obesity	Obesity	Total	Sig.	P-value
Severe	16	12	158	186	0,000	0,429
Moderate	133	62	108	303		
Normal	0	0	2	2		
Mild	45	19	29	93		
	Total			584		

Table 6. above presents statistical data on the correlation test of stress level variables with obesity conditions, obtained a significance value of $0.000 < 0.05$, it can be concluded that there is a significant relationship between stress levels and obesity conditions. The correlation value obtained is 0.429, it can be interpreted that the strength of the relationship between stress levels and obesity conditions is Moderately Strong.

Table 7. F Test Analysis

Variable	F _{Count}	F _{Table}	R	Sig.
X1, X2, X3 with Y	13,143	8,532	0,537	0,000

The results of the F test analysis of the relationship between diet, physical fitness, stress levels together on the obesity condition of Polri personnel in the Yogyakarta Special Region Police. Thus it can be concluded that there is a very strong and significant relationship between diet, physical fitness, stress levels together on the obesity condition of Polri personnel in the Yogyakarta Special Police Force.

Table 8. Effective and Relative Contribution of Each Variable

Variable	Effektive Contribution (SE)%	Relative Contribution (SR)%
Dietary Habit	14,7%	51,1%
Physical Fitness	3,1%	10,6%
Stress Level	11%	38,3%
Total	28,8%	100%

Based on the results of the data above, it can be concluded that the relative contribution of dietary variables to obesity conditions is 51.1%. The relative contribution of physical fitness variables to obesity conditions amounted to 10.6%. The relative contribution of the stress level variable to the obesity condition is 38.3%. The total of the relative contribution is 100%.

Diet is the main component in determining a person's nutritional status. The results of this study are also in line with the opinion (Yunitasari et al., 2019). An unbalanced dietary habit, especially one that is high in saturated fat, added sugar, and calories, can lead to an increase in body weight. For police force members, unbalanced eating habits can be caused by various factors, including irregular work schedules, stress, and limited access to healthy food options. When they frequently consume fast food or snacks that are high in calories but low in nutrients, the risk of fat accumulation in the body increases, ultimately leading to obesity.

The implications of these findings are significant for health and wellness policies in police institutions. Given that excellent physical condition is an integral part of Police performance, institutions need to adopt programs that encourage healthy eating among their members. These programs could include nutrition education, provision of healthy food in the police canteen, and training on the importance of maintaining a balanced diet. In addition, a supportive work environment that promotes healthy eating habits is also crucial. This can include adjusting meal times to be more flexible and providing sports facilities to support an active lifestyle.

Nutritional intake is an important component in responding to the body for daily activities (Rahayu et al., 2020). Good health and diet can address the presence of early obesity and get appropriate action (Rahayu et al., 2017). Police officers who receive support and guidance in implementing a healthy diet tend to have better health status, which in turn improves their ability to perform their duties optimally.

From an individual perspective, police officers need to have a strong awareness and commitment to maintaining a healthy diet. Education and training on good nutrition can improve their knowledge on the importance of nutrition in maintaining health and performance. They also need to be encouraged to make healthier food choices despite busy working conditions. For example, choosing healthy snacks such as fruits or nuts, as well as avoiding high-calorie sugary drinks, can be simple yet effective steps in maintaining an ideal weight.

Physical fitness is an important component in maintaining the health and performance of police personnel. In their daily duties, police personnel are required to have good physical fitness to handle various situations that require physical strength and endurance. Therefore, good physical fitness is a must for police personnel in order to carry out their duties effectively and efficiently. Optimal physical fitness also plays a role in preventing and overcoming obesity problems that can interfere with the performance and health of police personnel. Obesity among police personnel not only affects physical health, but can also affect performance and productivity. Obesity personnel tend to have a higher risk of developing various chronic diseases such as diabetes, hypertension and heart disease. These conditions can reduce the physical and mental capabilities of

personnel in carrying out their daily duties. In addition, obesity can also affect the professional image and confidence of police personnel, which in turn can affect their interaction with the community. To address the problem of obesity among police personnel, it is important to implement a comprehensive and sustainable physical fitness program. The program should include different types of physical exercises that can improve cardiorespiratory fitness, muscle strength, flexibility and balance. It is also important to educate police personnel on healthy eating and active lifestyles. This education can help personnel understand the importance of maintaining physical fitness and adopting healthy habits in their daily lives.

Overall, the relationship between physical fitness and obesity among Yogyakarta Police personnel shows that physical fitness has an important role in preventing and overcoming obesity. The significance value of 0.000 indicates a significant relationship, while the value of 0.433 indicates a moderate strength of the relationship. Therefore, it is important for the police to continue to develop and implement a comprehensive and sustainable physical fitness program to maintain optimal health and performance of personnel. Thus, police personnel can perform their duties better and contribute to maintaining public security and order.

In addition, these findings indicate that high levels of stress could potentially contribute to an increased risk of obesity among police officers. Chronic stress can affect the body's metabolism and eating behavior. When under stress, the body produces the hormone cortisol which can increase appetite, especially towards foods that are high in fat and sugar. Cortisol can also affect how the body stores fat, with a tendency to store fat in the abdominal area. Therefore, prolonged elevated cortisol levels due to chronic stress can contribute to weight gain and obesity. This is in accordance with the research opinion of (Kinansi et al., 2023). Chronic stress can affect hormones that regulate appetite and fat storage in the body.

Long and irregular working hours can disrupt sleep patterns, which is also linked to an increased risk of obesity. Sleep deprivation can affect hormones that regulate hunger and satiety, such as leptin and ghrelin, which can lead to increased appetite and excessive calorie intake. In addition, ongoing stress and fatigue often make individuals more likely to seek comfort in food, especially unhealthy fast food. Highly stressed police officers may also lack the time or motivation to exercise regularly. Limited physical activity can reduce calorie burning and result in fat accumulation in the body. In addition, the high demands of the job often lead police officers to experience more physical and mental fatigue, reducing the desire or opportunity to engage in physical activities that can help maintain a healthy weight. In order to create an effective program, the active participation of police officers is necessary. They should be involved in the process of planning and implementing health programs so that the programs can be tailored to their specific needs and conditions. Through an inclusive and collaborative approach, efforts to manage stress and prevent obesity among police officers can achieve more optimal results.

A good and healthy dietary habit, such as the consumption of 4 healthy 5 perfect foods, is very helpful in improving the growth of ideal body weight. In addition, optimal physical fitness also plays a role in preventing and overcoming obesity problems that can interfere with the performance and health of police personnel. And chronic stress can affect the body's metabolism and eating behavior. When experiencing stress, the body produces the hormone cortisol which can increase appetite, especially for foods that are high in fat and sugar. Cortisol can also affect how the body stores fat, with a tendency to store fat in the abdominal area.

CONCLUSION

Based on the results of data analysis, descriptions, testing of research results, and discussion, it can be concluded that: There is a relationship between diet and the condition of obesity in Polri personnel in the Yogyakarta Special Regional Police with a significance value of $0.000 < 0.05$. In addition, the strength of the relationship between diet and obesity conditions was recorded with a value of 0.631 indicating a strong correlation. There is a relationship between physical fitness and obesity in Polri personnel at the Yogyakarta Special Regional Police with a significance value of $0.000 < 0.05$. Apart from that, the strength of the relationship between physical fitness and obesity is at a value of 0.433, which indicates a fairly strong relationship. There is a relationship between stress and obesity in Polri personnel at the Yogyakarta Special Regional Police with a significance value of $0.000 < 0.05$. Apart from that, the strength of the relationship between stress levels and obesity is considered strong with a correlation value of 0.429, which indicates a fairly strong relationship. There is a relationship between diet, physical fitness and stress on the condition of

obesity in Polri personnel at the Yogyakarta Special Regional Police with a significance value of $0.003 < 0.05$. Apart from that, it has an R value of 0.537 which indicates a fairly strong relationship.

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