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Examining Eating Behavior and Exercise Intentions among Gender in University Students

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ABSTRACT (9 pt)

Early adulthood, particularly the student phase, is often accompanied by lifestyle changes that can affect mental and physical health. One concerning phenomenon among students is sedentary behaviour, which is associated with an increased risk of obesity and related diseases. This study aimed to explore eating behaviour and commitment to exercise among university students, as both factors are crucial in promoting a healthy lifestyle and preventing obesity. A descriptive quantitative approach was used, involving 677 (f=522, m=155) undergraduate students selected via random sampling, who completed the Eating Attitudes Test (EAT-26) and the Commitment to Exercise Scale (CES). Data were analysed using multiple linear regression to determine the influence of eating behaviour and gender on exercise intention. Results showed that eating behaviour had a significant positive effect on exercise intention ($\beta = 0.301$, $p < 0.001$), while gender had a significant negative effect ($\beta = -0.621$, $p < 0.001$), indicating that male students tend to have a higher exercise intention than female students. The model explained 20.3% of the variance in exercise intention. These findings highlight the importance of fostering healthy eating habits and addressing gender differences in physical activity commitment among university students.

INTRODUCTION

A healthy lifestyle is key so that individuals can continue to carry out activities well. This is no exception for individuals who are in early adulthood, especially students. During the student period, it is prone to changes in lifestyle due to factors outside the individual, such as the number of assignments, living away from family, and meet new environments. This can cause changes in psychological conditions and affect mental health [1,2]. Another phenomenon that occurs in students is that long study hour cause sedentary behaviour [3]. Sedentary behaviour has a high risk of obesity, acute and chronic diseases such as cardiovascular, metabolic syndrome, cancer and premature death [4, 5].

Analysis of Overweight and Obesity in Indonesia at 2022 states that 1 in 3 adults (35.5% or 64.4 million) in Indonesia are obese [6]. This figure has increased since 1975 and increasing in prevalence worldwide, with more than 650 million citizens aged 18 years and over being obese [7,8]. The efforts to prevent or overcome obesity conditions are to adopt a healthy lifestyle consisting of healthy eating behaviour and physical activity [9]. Two important things from a healthy lifestyle to overcome obesity that will be focused in this study are eating behaviour and physical activity, especially commitment to physical activity [10,11].

Eating behaviour is individual's choice and way, obtain and consume food for the body which can be influenced by various components, consists of behavioural, cognitive and affective. Some important aspects of eating behaviour are cognitive control, disinhibition and dietary restraint [12]. Eating behaviour is a condition that describes individual behaviour towards food frequency, eating patterns, eating preferences and food

selection. With today's fast-paced lifestyle, individuals, especially early adults, prefer fast food with high sugar and salt content [17]. In addition, there are external factors that also affect eating behaviour such as cultural conditions, economics, social norms, knowledge to media influences which are external factors, and the internal factors are psychological conditions [12,18]. Eating behaviour can be influenced by cognitive factors related to eating habits, beliefs, emotional needs, and environmental factors such as economic conditions, environment, lifestyle, culture, and religion [11,12,19]. Individuals also have various reasons for eating and stopping eating certain foods, which can be influenced by biological factors and psychosocial factors. Biological factors are related to hunger and satiety that drive individuals to consume food. Psychosocial factors relate to psychological and social conditions that influence individual eating behaviour [19,20]. For example, students experiencing stress due to assignments and exams that cause the amount of cortisol hormone to increase will more often consume snack / snack type foods [21]. Aspects of eating behaviour according to Stunkard & Messick consist of 3 aspects, consist of : Cognitive restriction which refers to an individual's ability to restrict food intake as a means to control weight, disinhibition refers to an individual's inability to restrict eating under certain circumstances (e.g. social situations, anxiety, good food) despite not feeling hungry, and dietary restraint (hunger) refers to an individual's likelihood to consume food in response to subjective feelings of hunger and appetite [12]. Disinhibition is predictive of poorer success at weight loss, and of weight regain after weight loss regimes and is associated with lower self-esteem, low physical activity and poor psychological health [13].

Physical activity also has an important role in maintaining health, one of which is by regularly doing sports. Exercising can help improve heart and lung function, thus making individuals healthier and fitter and can reduce the risk of developing disease [9]. In addition, exercise can also improve the cardiovascular system, build stronger muscles and bones, making individuals more resistant to injury, bone disease, reduce stress, anxiety, and improve emotional well-being and mental health [14,15]. One important aspect of physical activity is commitment to the sport activity. If an individual already has a commitment to a physical activity, they will persist to keep doing it even in uncomfortable conditions [16].

Commitment to physical activity in a positive sense can be a reason for individuals to persist in carrying out sports activities. Individuals who exhibit a high exercise commitment score will adhere to rigid rules, be preoccupied with exercise, feel guilty when missing exercise sessions, or neglect social, family or work contacts because of exercise [16]. Individuals will continue sporting activities despite negative consequences (such as injury), disrupt social contacts and responsibilities, and exhibit rigid and compulsive features. However, in this case, exercise commitment has a positive connotation, because it is seen from the intensity of exercise performed. The higher the intensity of exercise, the more calories will be burned, but there is a risk of fatigue. Intensity can be divided into four aspects, namely, frequency or frequency, attention or concentration, appreciation or understanding, and duration or quality of depth [22]. Therefore, it is important to know the limits of individual ability and choose the type of exercise and adjust the intensity of exercise according to the physical condition of the individual. The specific purpose of this research is to conduct a comparative study of

eating behaviour in students and determine the commitment of students in doing physical activity, namely exercising as measured by commitment to exercise (CES).

RESEARCH METHOD

This study uses a descriptive quantitative research design with survey data collection methods. Data collection was carried out using an online questionnaire. Before filling in the data, participants were asked to read the description and instructions of the questionnaire and give consent to participate in the study. Research subjects in this study were selected using the random sampling method with specific criteria: 1) active undergraduate students; 2) doing one type of sports activity at least once a week. Before data collection was carried out, the researcher calculated the required sample size using G*Power to get power 0.8 and effect size 0.3, so at least 350 participants were needed. From the results of filling out the scale, data were obtained from 677 samples that met the research criteria with details of 522 female participants and 155 male participants. There are two instruments used in this study, consist of the Eating Attitudes Test (EAT-26) by Garner [23] scale and the Commitment to Exercise (CES) scale by [16]. At the beginning of the study, participants were asked to complete an identity containing sociodemographic background such as age, gender, class, height and weight. To find out the sports activities carried out, data collection was carried out in various study programmes and across generations of students in Surabaya, East Java.

RESULTS AND DISCUSSION

Data was analysed using multiple linear regression to determine the effect of eating behaviour and gender variables on exercise intention. Previously, the data were tested for normality and fulfilled the assumptions required for regression analysis. The results of the analysis can be seen in table 1. It shows that the overall regression model is significant in predicting exercise intention, $F(2.674) = 85.848$, $p < 0.001$, with a coefficient of determination R^2 of 0.203. That is, 20.3% of the variance in exercise intention can be explained by the independent variables in the model.

Specifically, eating behaviour had a significant positive effect on exercise intention ($B = 0.144$, $SE = 0.017$, $\beta = 0.301$, $t = 8.633$, $p < 0.001$), indicating that the higher the healthy eating behaviour, the higher the individual's intention to exercise. Meanwhile, the gender variable shows a significant negative effect ($B = -7.141$, $SE = 0.641$, $\beta = -0.621$, $t = -11.142$, $p < 0.001$), which indicates that there are differences in exercise intention based on gender, with lower intention values in the female group compared to men. the results of multiple regression analysis data can be seen in table 2.

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Table 1. Determination Coefficient Test Results

Model	R	R square	Adjusted R Square	Std. error of the estimate	F	Sig.
1	.451	.203	.201	6.911	85.848	<0.001

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Table 2. Multiple Regression Test Results

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Beta		
(Constant)	17,436		14,941	<0,001
Eating Attitude (EAT)	0,144	0,301	8,633	<0,001
Gender (P)	-7,141	–0,621	-11,142	<0,001

The results showed that eating behaviour has a significant positive role on exercise intention in college students. The findings regarding the positive influence of eating behaviour on exercise intention are in line with the results of previous studies which state that a healthy diet often goes hand in hand with active lifestyle habits. Individuals with good cognitive control in diet tend to have high health awareness and are more likely to show intention to exercise [24]. The positive relationship between eating behaviour and commitment to physical activity can be explained through intrinsic motivation to exercise and a regulated eating style. Self-Determination Theory (SDT) explains that motivation to engage in an activity, including physical activity, can be at various levels, from amotivation (no motivation) to extrinsic motivation (due to external pressure or reward), and the highest is intrinsic motivation. Intrinsic motivation arises when a person participates in an activity because they enjoy it or find it enjoyable. Higher levels of motivation, especially intrinsic motivation, are associated with the maintenance of motivation to continue physical activity over a longer period of time [25].

In addition, the results of the analysis showed differences in exercise intention based on gender. Gender has a negative role on exercise intention, where women tend to have a lower level of exercise intention than men (N=677, f=522, m= 155). This is consistent with the results of previous studies which state that women, especially in early adulthood, have more barriers to regular physical activity than men, both in terms of body perception, socio-cultural, and psychological factors [26]. Gender-based differences in exercise intention also reinforce the results of previous studies which state that women tend to face more barriers to physical activity than men. These barriers include body image concerns, social perceptions, cultural norms that limit women's physical activity, and higher levels of anxiety or stress [27,28]..

Based on the results of regression analysis, 20.3% of variation in exercise intention can be explained by eating behaviour and gender variables. This percentage shows that although both variables contribute significantly, there are still about 79.7% of other variables outside the model that also affect students' intention to exercise. Other factors that may play a role include intrinsic motivation, social support, time availability, physical environment, and perceived benefits and barriers of exercise [29,30]. A more complex discussion of the relationship between eating behaviour and commitment to

exercise takes as its subject young athletes from aesthetic sports and when combined with body dissatisfaction, is associated with inadequate eating behaviour or increased tendency towards unhealthy eating behaviour or eating disorders [31]. Youth athletes with high exercise commitment (high CES scores) were at even higher risk of developing an eating disorder. Another study also found that vigorous high-intensity exercise can increase emotional eating, a type of unhealthy eating behaviour. This suggests that exercise commitment or intensity, at least in certain scenarios or with certain motivations (such as weight control or body shape associated with eating disorders), may be associated with negative aspects of eating behaviour [32].

CONCLUSION

This study investigated the relationship between eating behaviour and commitment among university students in Surabaya, Indonesia. The result is eating behaviour had a significant positive effect on exercise intention, while gender had a significant negative effect. Male students were more likely to have stronger exercise intentions compared to female students. Overall, 20.3% of the variance in exercise intention was explained by eating behaviour and gender, indicating other factors were also influential. This study holds important significance as it highlights behavioural patterns relevant to young adults's health. One of the strengths of this research lies in its large sample size. However, the study also has limitations. The study is also delimited to students who already engage in some form of exercise, leaving out potentially less active individuals. From a pedagogical perspective, this study suggests the need for integrated health education programs that emphasize balanced nutrition and sustainable exercise habits. Such programs should be gender-sensitive, addressing the specific psychosocial and cultural barriers female students face in maintaining physical activity. Incorporating mental health support and promoting self-regulation strategies in student wellness initiatives may also enhance long-term adherence to healthy lifestyles.

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