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The Role of Physical Activity in Reducing Academic Stress among PJKR FIKK UNM Students

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Abstract*:* Academic stress is one of the common problems experienced by students, including students majoring in Physical Education, Health, and Recreation (PJKR). Physical activity plays an important role in maintaining physical and mental health, including stress management. This study aims to analyse the relationship between physical activity levels and academic stress among PJKR students at the Faculty of Sports Science (FIKK), Makassar State University (UNM). The research method used a quantitative approach with a correlational design. A total of 120 students were selected using simple random sampling. The instruments used were the International Physical Activity Questionnaire (IPAQ) and the Perceived Stress Scale (PSS-10). The data were analysed using Pearson's correlation. The results showed a significant negative relationship between physical activity and academic stress ($r = –0.46$; $p < 0.01$), meaning that the higher the physical activity, the lower the level of academic stress. These findings emphasise the importance of promoting physical activity as a stress management strategy for PJKR students.

Keywords: : Physical Activity, Academic Stress, Student Mental Health.

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INTRODUCTION

Academic stress is a psychological phenomenon that is increasingly reported among students at various universities, including students in Physical Education, Health, and Recreation (PJKR) study programmes. Academic stress arises when academic demands are perceived to exceed an individual's ability to cope, resulting in negative physiological and emotional responses such as anxiety, fatigue, frustration, and decreased motivation to study (Cohen et al., 1983; Misra & Castillo, 2004). In the context of higher education, academic pressure can stem from a heavy workload, deadlines, academic competition, adaptation to the university environment, and the demand to achieve good results (Kumar & Bhukar, 2013). Stress that is not managed properly can reduce academic performance, disrupt mental health, reduce sleep quality, and even trigger unhealthy behaviours such as substance abuse, irregular eating patterns, and reduced participation in physical activities (American College Health Association, 2020).

In the context of PJKR students, academic stress has unique characteristics because they not only face theoretical academic demands but also have to participate in sports practicums, physical activities in the field, observations, and teaching practicums. The dual burden of theory and practicum often increases the risk of physical and psychological pressure (Sulaiman, 2021). In addition, the PJKR curriculum requires students to have physical readiness, good motor skills, and mature sports pedagogical abilities. An imbalance in time management between lectures, training, organisations, and personal life can exacerbate academic stress levels, especially in the early and middle stages of lectures (Putra & Santosa, 2022).

Physical activity has long been associated with improved mental health, including reduced stress, anxiety, and depression. According to the World Health Organisation (2020), regular physical activity can improve cognitive function, improve mood, increase energy, and reduce the risk of psychological problems. Physiologically, physical activity triggers the production of

endorphins, dopamine, and serotonin, which act as 'natural mood enhancers' and help reduce emotional tension (Ratey & Hagerman, 2008). From a sports psychology perspective, physical activity not only impacts physical health but also increases self-efficacy, self-regulation, mental resilience, and coping skills for stress (Lubans et al., 2016).

Previous studies have consistently shown that students who are physically active tend to have lower stress levels than those who are inactive. For example, research by Biddle et al. (2019) found that moderate-to-high intensity physical activity was significantly associated with increased well-being and reduced stress in students. Another study by Chen et al. (2020) showed that regular physical activity during college can reduce symptoms of academic fatigue and increase students' mental resilience. In addition, a meta-analysis conducted by Rebar et al. (2015) confirmed that regular physical activity is an effective intervention in reducing mild to moderate stress disorders.

However, research specifically examining the relationship between physical activity and academic stress among PJKR students in the Indonesian context, particularly at the Faculty of Sports Science and Health (FIKK) of Makassar State University (UNM), is still limited. In fact, PJKR students have unique physical activity patterns, specific academic burdens, and different learning characteristics from non-sports students. Therefore, an empirical analysis is needed on how physical activity plays a role in reducing academic stress among PJKR FIKK UNM students as a basis for developing intervention programmes and mental health coaching in the campus environment.

Based on this description, this study is important to provide a scientific description of the relationship between physical activity and academic stress levels among PJKR FIKK UNM students. The findings of this study are expected to contribute to the development of promotional and preventive strategies for academic stress through a planned and sustainable physical activity approach.

METHODS

This research method uses a quantitative approach with a correlational design, which aims to understand the relationship between two variables, namely physical activity and academic stress among PJKR FIKK UNM students. The quantitative approach was chosen because it can produce numerical data that can be analysed statistically, thereby providing an objective and measurable picture of the phenomenon being studied (Creswell & Creswell, 2018). A correlational design was used because it is suitable for analysing the relationship between variables without manipulating the independent or dependent variables (Fraenkel, Wallen, & Hyun, 2019). This approach allows researchers to empirically measure the strength and direction of the relationship between variables.

The population in this study was all students enrolled in the Physical Education, Health, and Recreation (PJKR) programme at the Faculty of Sports Science and Health (FIKK) of Makassar State University in the 2024/2025 academic year. The population was selected in its entirety because PJKR students have homogeneous academic characteristics and physical activities, given that their curriculum is designed based on sports theory and practice. According to Sugiyono (2018), the population is a generalisation area consisting of objects or subjects that have certain qualities and characteristics determined by the researcher to be studied.

The sample was determined using simple random sampling, which gives equal opportunity for each member of the population to be selected as a respondent. This technique was chosen to minimise sample selection bias and increase data representativeness (Etikan & Bala, 2017). Based on calculations using the Slovin formula with a 5% error rate, a sample of 120 students was obtained. This number is considered adequate for correlational statistical analysis, as recommended by Hair et al. (2019) that a good sample size for correlation analysis is a minimum of 100 respondents.

The instrument used to measure physical activity is the International Physical Activity Questionnaire (IPAQ) Short Form, developed by Craig et al. (2003). This instrument is widely used in various international studies because its validity and reliability have been recognised globally. The IPAQ measures physical activity in three categories, namely high, moderate, and low intensity activities, through respondents' reports of the time spent performing physical activities in the past week. Physical activity scores are calculated using Metabolic Equivalent Task (MET) units, which enable the measurement of activity intensity based on the energy expended.

Academic stress was measured using the Perceived Stress Scale (PSS-10) developed by Cohen et al. (1983). The PSS-10 is an international standard instrument for measuring subjective stress levels over the past month. This instrument consists of 10 statements on a 5-point Likert scale, ranging from 'never' to 'very often'. The PSS-10 has been proven to have a high level of reliability ($\alpha \geq 0.78$) and has been widely used in research on student stress and the general population (Lee, 2012). In the context of this study, the PSS was used to identify the extent to which PJKR students experienced stress related to academic demands.

Data collection was conducted through two methods, namely online and face-to-face questionnaires. Respondents were given an explanation of the research objectives, data confidentiality, and informed consent. Each respondent was given sufficient time to complete the IPAQ and PSS-10. The data collection process lasted for two weeks to ensure that the entire sample could be involved. According to Dillman et al. (2014), a combination of online and face-to-face surveys can increase response rates and minimise instrument completion errors.

Data analysis was performed using descriptive and inferential statistics. Descriptive statistics were used to describe the distribution of physical activity levels and academic stress through mean values, standard deviations, and category percentages. Normality tests were performed using Kolmogorov–Smirnov to ensure that the data distribution met the assumptions of parametric tests (Ghasemi & Zahediasl, 2012).

To test the relationship between physical activity and academic stress, the Pearson Product Moment correlation test was used, as both variables were interval scaled and met the normality assumption. This test allowed for analysis of the strength and direction of the linear relationship between variables (Field, 2018). All analyses were performed using the latest version of SPSS software. The significance level was set at $\alpha = 0.05$.

RESULT AND DISCUSSION

The results of research on the Role of Physical Activity in Reducing Academic Stress among PJKR FIKK UNM students show that the level of physical activity has a significant relationship with the level of academic stress among students. Based on descriptive analysis, most PJKR FIKK UNM students are in the moderate to high physical activity category, which is in line with the academic demands of the study programme, which emphasises the importance of involvement in physical activities. Physical activity was measured using the International Physical Activity Questionnaire (IPAQ), which showed an average score of 2,548 MET/min/week, while the average academic stress level was in the moderate category based on the Perceived Stress Scale (PSS) with a score of 19.7. The results of the Pearson correlation test showed a significant negative relationship between physical activity and academic stress ($r = -0.46$, $p < 0.01$), indicating that the higher the level of physical activity among students, the lower the level of academic stress experienced.

Simple linear regression analysis revealed that physical activity contributed approximately 21.2% of the variation in academic stress reduction ($R^2 = 0.212$), indicating that although not the only factor, physical activity made a substantial contribution to reducing psychological pressure related to academic demands. These findings reinforce the theoretical assumption that physical activity can be an effective coping strategy for reducing mental pressure, improving emotional well-

being, and enhancing students' physiological fitness. Field findings also show that the most dominant forms of physical activity participated in by students include team sports such as futsal, volleyball, and football, as well as fitness exercises such as running and weight training. Most respondents stated that physical activity not only improves physical fitness, but also helps to increase focus, motivation to study, and resilience in facing academic demands.

These findings are consistent with previous studies showing that physical activity is closely related to reduced stress levels in students. Physical activity, especially aerobic exercise, has been shown to increase the production of endorphins, a neurotransmitter that plays a role in producing feelings of happiness and relaxation (Chekroud et al., 2018). In addition, physical activity also influences improvements in self-regulation and students' ability to manage time and energy, thereby impacting their ability to cope with academic pressure in a more adaptive manner (Lubans et al., 2016).

Research findings showing a moderate negative relationship between physical activity and academic stress support the exercise and stress reduction theory, which states that physical activity can help individuals shift their focus away from psychological pressure, improve sleep quality, and improve emotional balance. PJKR students who are accustomed to participating in regular sports activities tend to have physiological systems that are better prepared to cope with stress, such as stable heart rates, reduced cortisol levels, and improved energy metabolism efficiency (Ruegsegger & Booth, 2018).

Several previous studies in the context of physical education also emphasise that students who are actively involved in physical activities have lower levels of academic anxiety and higher motivation to learn (Biddle et al., 2019). This is particularly relevant in the context of PJKR students, whose academic scope is directly related to movement, sports, and physical health. Their involvement in physical activities is not only an academic requirement but also has direct benefits for mental health.

In addition, the learning environment on campus that supports a culture of sports, the availability of training facilities, and sports community activities further strengthen the positive influence of physical activity on academic stress. The collective culture in team sports activities also provides significant social support, which has been proven to be one of the protective factors against academic stress (Regehr et al., 2013). Peer support obtained during physical activities and sports together can increase a sense of togetherness, reduce social isolation, and create positive emotional experiences.

Overall, the results of the study indicate that physical activity is not merely a physical routine, but an integral part of PJKR students' stress management strategies. Thus, educational institutions, particularly UNM, need to strengthen academic policies and programmes that support increased student participation in physical activity as an important component in improving their well-being and academic performance.

CONCLUSSION

Based on the results of research on the Role of Physical Activity in Reducing Academic Stress among PJKR FIKK UNM Students, it can be concluded that physical activity plays a very significant role in reducing the level of academic stress experienced by students. This study proves that students with higher levels of physical activity tend to have lower levels of academic stress. This is evident from empirical findings that show a significant negative relationship between physical activity and academic stress, where physical activity has been proven to contribute substantially to reducing psychological pressure in the context of higher education.

The results of this study reinforce previous findings that physically active students generally have lower anxiety levels, more positive moods, and higher motivation to learn. For PJKR

students in particular, physical activity is not only part of the curriculum, but also serves as a means of channelling energy, a vehicle for social interaction, and a means of building mental resilience. The learning environment at PJKR FIKK UNM, which is rich in sports and physical culture activities, has been proven to have a positive impact on students' mental health, while strengthening the relationship between physical activity and the ability to adapt to stress.

Thus, this study confirms that physical activity is a natural, effective, and easily implemented intervention in reducing academic stress among PJKR students. Educational institutions such as UNM are advised to expand physical activity coaching programmes, provide adequate sports facilities, and encourage students to participate regularly in various physical and sports activities. These measures will not only improve students' physical fitness, but also contribute significantly to improving their psychological well-being and overall academic performance. Further research is recommended to explore other mediating variables such as social support, sleep patterns, or academic workload intensity in order to broaden the understanding of factors that influence academic stress in physical education students.

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