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The Effect of Physical Activity on Premenstrual Syndrome in Elementary School Teacher Education Students, Physical Education at The Indonesian Education University, Sumedang Regional Campus

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Abstract

Menstruation is one of the signs of the development of the reproductive system in women. Menstruation states that women have reached the point of reproductive maturity ready to be fertilized, this is inseparable from Premenstrual syndrome which is a sign before menstruation. This study aims to determine the relationship between physical activity and symptoms of premenstrual syndrome. In this study using quantitative methods. Through 2 questionnaires of physical activity and premenstrual syndrome, the data obtained correlation between the dependent variable and the independent variable lies in the significance of the results of statistical calculations, namely the significance obtained is the Sig value. 0.195. Which has a number smaller than 0.05, therefore it is stated that there is no correlation between the two variables studied or the correlation in the two variables is not too significant or can be called weak. The conclusion is in line with the data obtained by the researcher, there is an influence of physical activity on premenstrual syndrome symptoms in women with data that 80% of students have a high level of physical activity and 68% of respondents stated that they had quite high premenstrual syndrome symptoms. This states that physical activity has an influence on premenstrual syndrome in female students, but the level of influence is not very significant in each individual.

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INTRODUCTION

Physical activity is all body movements carried out by an individual human being in our daily lives, we cannot be separated from physical activities from the moment we wake up until we fall asleep again at night, as according to WHO (World Health Organization), physical activity is a series of body movements produced by a series of muscle movements and requires energy in its implementation, including activities carried out while working, playing, doing housework and recreational activities. It can be interpreted according to WHO that physical activity is all things that refer to human body movements.

In addition to what is generally conveyed by WHO, there are also several opinions expressed by several experts, such as according to Wicaksono (2020:16) in the physical activity book written, physical activity is defined as any form of body movement formed by skeletal muscle contractions or skeletal muscles that cause an increase in calorie needs or calorie use in the body exceeding energy needs in a resting state or can be called resting energy expenditure. Physical activity itself is an activity carried out in daily activities, some state that physical activity is a condition where an individual has enough energy to complete daily activities and does not experience excessive fatigue, in physical fitness it is divided into 2 components, namely health (health related component) and athletic (performance or skill related component).

According to Aditya, physical activity as a whole helps maintain blood pressure, cholesterol and has a stable weight, maintains heart condition and smoothes blood circulation and increases muscle bone strength and maintains joints in helping to reduce symptoms of depression and improve a person's quality of life (Steve et al., 2021). Of the many definitions of physical activity, in general, physical activity is a daily activity carried out by individuals to improve the quality of life and increase a person's endurance. Physical activity itself can be in the form of daily activities such as going to work, school, doing activities that are usually done at home such as washing, mopping and cleaning the house, meaning that physical activity is a series of activities carried out by individuals every day in the form of moving the body and moving. Garber C.E. stated that physical activity in general can be interpreted as daily sports activities, work activities, activities carried out in leisure time and transportation or active movement carried out by humans (Cristanto et al., 2021).

Of the many lifestyles that involve daily physical activity and technological advances, increasing the potential for individuals today to have relatively low physical activity, this is due to technological developments that make many activities that should be done outdoors by individuals can be done easily using gadgets and made easier by the many applications that can help with daily activities. This affects the risk of low physical activity levels in humans. As expressed by Adhitya, the current lifestyle forms a bad habit that causes a decrease in interest in physical activity because of that, physical activity and active lifestyles are slowly starting to decrease from everyday life (Cristanto et al., 2021).

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Getting to know more about premenstrual syndrome or PMS has many symptoms that are generally experienced by women at a young age or who have very high levels of activity. premenstrual syndrome or PMS is a very rapid change in terms of emotional depression, irritability, and can be in the form of angry emotions and crying. As for anxiety disorders, physical symptoms can be discomfort, bloating, headaches and stomach cramps. As quoted from the world health organization or what we usually call who, it reveals that the occurrence of premenstrual syndrome or PMS occurs with a fairly high presentation, namely 75% of women worldwide feel the symptoms of premenstrual syndrome. Quoted from a study by Mogdam in 2014, it revealed that premenstrual syndrome in the world occurred as much as 47.80% with the lowest figure in France at 12% and the highest in Iran at 98% while the figure for preference phenomena-differential syndrome in Indonesia averaged 85% of the population of women of reproductive age or fertile age (Larasati, 2018).

The study is about the correlation or relationship between body mass index and physical activity to premenstrual syndrome symp-

toms experienced by women. The study focuses on measuring body mass index and the level of physical activity of women to the symptoms of menstrual syndrome experienced. Thus the formulation of the problem in this study is to determine the relationship between physical activity on premenstrual syndrome of physical education students at the Indonesian Education University, Sumedang area campus and to find out how big the relationship is between physical activity on premenstrual syndrome of physical education students at the Indonesian Education University, Sumedang area campus.

This study aims to determine the relationship between physical activity and premenstrual syndrome symptoms in female students and to determine the level of influence between physical activity on premenstrual syndrome. Based on the collection of data and the amount of information received, the first assumption of this study is a hypothesis that there is a relationship between physical activity and premenstrual syndrome experienced by female students of physical education at the Indonesian Education University, Sumedang area campus with a fairly visible level of correlation in the study.

Based on the identification of 2 phenomena that occur in women between physical activity and premenstrual syndrome, it can raise research questions such as whether there is an influence between physical activity on pre menstruation and how much influence occurs in the 2 phenomena that occur in elementary school teacher education students majoring in physical education at the Indonesian Education University. This is the formulation of the research problem that will be discussed in this paper.

In previous studies, there were several similar studies, namely research on the effect of physical activity with a therapeutic approach on premenstrual syndrome symptoms. The study aims to measure how much physical activity and movement affect the menstrual syndrome experienced by women. This study focuses on virtual exercise in the form of physical activity and monitoring of physical activity, The resulting influence between physical activity on premenstrual syndrome experienced by women does not appear to be very significant or in some cases has no influence from high or low levels of physical activity on premenstrual syndrome symptoms (Setyawan et al., 2023). In addition to this study, there is research on the effect of individual nutritional and physical activity intake on the occurrence of menstrual syndrome experienced by adolescent girls. This study focuses on the nutritional intake consumed by adolescent girls on the cycle and symptoms of premenstrual syndrome experienced by adolescent girls (Rahmawati et al., 2024). The two relevances of the study are a reference in this study that this study must be carried out in the form of re-exploring the symptoms of premenstrual syndrome that may occur among female PGSD physical education students at the Indonesian Education University, Sumedang area campus. Because there are many possible differences in premenstrual syndrome or PMS symptoms experienced by PGSD physical education students with various factors, such as the level of activity, form of activity and emotional burden experienced by PGSD physical education students.

METHODS

In this study using quantitative methods. This study uses quantitative methods because this study is identical to the use of numbers in collecting research data, and can be completed with quantitative research. The form of quantitative research contains quantitative elements such as numbers, frequency levels and presentations where each data is directed to test the truth of the hypothesis and other properties that are generally related to broad knowledge. Quantitative research is also used to check reliability and calculate the relationship between research variables (Suharsimi, 2010).

The research method used is descriptive with a cross-sectional approach. Descriptive research is a form of research method that describes all the results of data collection or the situation of the research object, to analyze and compare based on conditions in the field, and the information produced can be used as the development of science (Nurhaida and Susilastri, 2019). The cross-sectional approach is a type of research that refers to the collection process using a data collection period of only 1 time on the independent and dependent variables (Puspitasari et al., 2024).

Data collection techniques using questionnaires In the research design in collecting data using questionnaire research instruments, the questionnaire itself according to (Sugiono et al., 2014) is a data collection method carried out by giving a set of written questions or statements to respondents to be answered or providing opinions from the respondents regarding the questions and questions given. Data collection using a questionnaire collection tool provides freedom for respondents to provide opinions on questions or questions asked by researchers, this provides

an opportunity for each individual not to influence each other and create data of varying degrees. The questionnaire used is a physical activity questionnaire in the last 7 days adapted from the 2002 international physical activity questionnaire and a questionnaire that measures the level of premenstrual syndrome symptoms using the Shortened premenstrual assessment form (SPAF).

RESULTS AND DISCUSSION

Research on the effect of physical activity on premenstrual syndrome experienced by elementary school teacher education students majoring in physical education at the Indonesian Education University, Sumedang regional campus, which was conducted on February 10-13 by distributing questionnaires to respondents who met the criteria for filling out the research questionnaire, 66 respondents were obtained who were willing to become respondents consisting of the classes of 2021, 2022, 2023 and 2024.

From the results of the percentage of respondents who stated that they were willing and participated in filling out the questionnaire that had been distributed and facilitated by the researcher, there were 66 respondents who had met the respondent criteria in filling out the questionnaire. There were 15% of female students from the 2021 intake, 10% of female students from the 2022 intake, 25% of female students from the 2023 intake and 50% of female students from the 2024 intake. In the percentage of female respondents in the 2024 and 2023 intakes, they dominated with the assumption that in these intakes they still had a dominant and active level of activity on campus because they were in the regular lecture phase. Meanwhile, the researcher's assumption for respondents in the 2021 and 2022 intakes was less because routine activities on campus had begun to decrease for several reasons, such as there were no longer regular lectures on campus and activities that were campus programs that required female students to carry out activities outside campus.

With the percentage of data from 66 respondents in total, 70% of female students have a high level of physical activity, 20% moderate and 10% low. The data was obtained from the results of the physical activity questionnaire on female elementary school physical education teacher education students. And the overall data percentage regarding premenstrual syndrome symptoms was obtained through the premenstrual syndrome symptom questionnaire with 80% of respondents experiencing high premenstrual syndrome symptoms, 15% experiencing moderate premenstrual syndrome symptoms while the remaining 5% experienced low premenstrual syndrome symptoms.

Research in this study has similarities or similarity of results as in previous studies, namely research on the effect of physical activity with a therapeutic approach on premenstrual syndrome symptoms. The study aims to measure how much physical activity and movement affect menstrual syndrome experienced by women. This study focuses on virtual exercise in the form of physical activity and monitoring physical activity (Setyawan et al., 2023).

The balance of physical activity can reduce the impact of presto syndrome in increasing endorphin hormones and reducing estrogen and steroid hormones in the body (Link, 2018). Office physical activity has implications of having a regular and continuous frequency that contributes to the process of increasing and releasing endorphins, the energy hormone itself is a hormone produced by the body's system as a means of controlling stress and immunity (Renata et al., 2018), this can be a means of preventing one of the symptoms of menstruation, namely mood imbalance experienced by women during the Pera menstrual phase.

Basically, premenstrual syndrome symptoms are caused by an imbalance of estrogen and progesterone hormones that occurs in a woman's body and causes hormonal imbalance in the reproductive system (Kamilah et al., 2021). Premenstruation itself is caused by biological processes in the body, hormonal balance that occurs in the body is one of the biological processes or impacts that can be caused by the level of physical activity of an individual, therefore the occurrence of the menstrual process is in line with the physical activity carried out by the individual (Salsabil & Andriani, 2024). Hormonal imbalance can also be related to body mass index, namely the hormone estrogen is not only created from the reproductive system but can also come from a person's fat under the skin (Daiyah et al., 2021). the statement from the results of the study identified that the results of the physical activity process which is classified as less can increase fat levels in the body, this makes the production of the hormone estrogen which is not only produced by the ovaries but can also be obtained from the fat levels under the skin, this tells of hormonal imbalance in individuals who have low levels of physical activity.

The effect of physical activity on menstrual syndrome which is a finding in this study is that individuals who have low and unsustainable levels of physical activity have high levels of fat in

the body, this is one of the effects of lack of physical activity on premenstrual syndrome symptoms which will have a fairly high frequency. In addition, there are psychological symptoms of persuasion syndrome, namely stress and depression in individuals who lack physical activity have the creation of low levels of endorphins in the body, which also creates or increases the possibility of stress in the premenstrual phase. In addition, those in the field of deficiency and menstruation have hormonal imbalances in the body such as the creation of endorphins and progestogens as supporters of persuasion in the female reproductive system.

It can be stated that there is an influence of physical activity on premenstrual syndrome in line with research conducted by S Bahrun et al., which states that someone who has low levels or frequency of physical activity will produce more estrogen hormone than progesterone, which results in a very high possibility of premenstrual symptoms occurring.

CONCLUSION

From the results of the research and data collection that have been collected at a fairly high level of physical activity that occurs in the research respondents, it shows an impact on the percentage of moderate or non-achieving persuasion symptoms, which also states that there is little relevance or influence of physical activity on premenstrual syndrome experienced by elementary school physical education teacher education students at the Indonesian Education University, Sumedang area campus. This shows that there is an influence of physical activity on the premenstrual symptoms experienced. However, the level of influence of physical activity on premenstrual symptoms experienced by elementary school physical education teacher education students at the Indonesian Education University, Sumedang area campus is classified as not too great an influence that is relevant to the statement made by Rika Kawabe and colleagues in 2022 conducting research in Japan with the results of the study stating that young women or productive age with high levels of physical activity exceeding 3000 MET -minutes/week tend to have milder premenstrual symptoms.

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