



## Gender Differences in Physical Activity Levels among Male and Female Students in Extracurricular Sports Activities at Katolik St. Gabriel Senior High School, Maumere

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### ABSTRACT

The level of physical activity among adolescents in schools is a key indicator of physical health and socio-emotional development. However, participation and intensity of physical activity often differ significantly between male and female students. This study aims to determine the level of physical activity among male and female students participating in extracurricular sports activities, and to analyze the differences between the two groups. A quantitative comparative approach was employed, involving 60 high school students (30 males and 30 females) who actively participated in sports extracurricular programs. Data were collected using a modified IPAQ-based questionnaire, field observations, and semi-structured interviews. The results showed that male students had a higher physical activity score (mean = 82.4) compared to female students (mean = 64.7), with the t-test indicating a statistically significant difference ( $p < 0.05$ ). These findings suggest that social, motivational, and cultural factors influence physical participation, particularly by gender. Therefore, extracurricular sports programs should be designed to be more inclusive in order to enhance the engagement of female students.

**Keywords:** Physical Activity, High School Students, Extracurricular, Gender Differences, Sports

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### INTRODUCTION

Participation in physical activity plays a vital role in enhancing adolescents' physical and mental health while also supporting their social and emotional development. The World Health Organization (WHO) recommends that adolescents engage in at least 60 minutes of moderate-to-vigorous physical activity daily. However, global reports indicate that approximately 81% of adolescents fail to meet this recommendation, with a persistent gender disparity in which female adolescents are significantly less active than their male counterparts.

Physical activity is an essential component in supporting the physical, psychological, and social development of students. Through structured physical

activities, such as extracurricular sports programs, students have the opportunity to improve their motor skills, physical fitness, and internalize important values, including discipline, cooperation, and sportsmanship (Sukintaka, 2004). Nevertheless, previous studies have highlighted differences in participation levels between male and female students, particularly in school-based sports activities. Male students tend to exhibit higher levels of intensity and frequency in physical activity than female students (Baumgartner & Jackson, 2007). These differences are influenced by a variety of factors, including personal interest, motivation, self-perception, social norms, and environmental support.

Within the context of extracurricular sports activities, gender disparities may become even more pronounced due to social and cultural factors within schools. A longitudinal study conducted in Taiwan revealed that participation in extracurricular sports declined more rapidly among female adolescents compared to their male counterparts. This trend is consistent with findings from the United States, where male students were found to accumulate more minutes of moderate-to-vigorous physical activity (MVPA) during physical education classes than female students. In the context of physical education and extracurricular sports, this gap warrants serious attention. The lack of female students' engagement in physical activity may have long-term consequences for their physical and psychological health (Sukadiyanto & Tangkudung, 2011). Therefore, it is essential to conduct research that examines gender differences in physical activity levels, particularly within high school extracurricular sports programs.

Moreover, studies in Indonesia comparing physical fitness between male and female students using the Tes Kebugaran Siswa Indonesia (TKSI) have shown that male students consistently demonstrate significantly higher levels of physical fitness than their female peers. All of this evidence underscores the pressing need for research that examines gender-based disparities in physical activity participation within the context of school-based extracurricular sports programs.

Physical activity is defined as any bodily movement produced by skeletal muscles that requires energy expenditure. Includes daily activities, play, sports, physical labor, and recreational pursuits (Caspersen, Powell, & Christenson, 1985). Extracurricular sports activities refer to organized school-based programs

conducted outside regular academic hours, aimed at developing students' interests, talents, and potential in sports (Ministry of National Education [Depdiknas], 2003). Gender differences in physical activity refer to variations in participation levels, intensity, and types of physical activity between male and female students, influenced by both biological and sociocultural factors (Baumgartner & Jackson, 2007).

These disparities are shaped by a combination of biological, social, psychological, and cultural influences that determine the extent to which male and female students engage actively in sports. Various interrelated factors, including motivation, self-perception, and social experiences during physical activity, play a crucial role in shaping participation.

Several internal factors contribute to gender-based differences in physical activity among students, including: 1) Motivation: Research indicates that male students are generally motivated by competition and achievement, whereas female students are more driven by health and social aspects. However, they often display lower levels of intrinsic motivation. 2) Self-perception and confidence: Female students tend to experience feelings of inadequacy or embarrassment when engaging in physical activity in the presence of the opposite sex, which leads to lower participation levels.

External and environmental factors also influence these differences, such as: 1) Social and cultural norms: The stereotype that sports are a "male domain" restricts the active involvement of female students in inclusive physical activities. 2) School facilities and time availability: Schools with limited policies or infrastructure often fail to provide adequate support for female students to participate as actively as their male counterparts.

While several studies have addressed the differences in physical fitness and physical activity levels between males and females, research focusing specifically on extracurricular sports activities at the senior high school level remains limited, particularly in local contexts such as SMAS Katolik St. Gabriel Maumere. This study is essential for the following reasons: 1) To provide an empirical picture of gender differences in students' physical activity during extracurricular sports activities. 2) To offer a solid foundation for inclusive interventions aimed at

increasing female students' participation. 3) To contribute to local literature regarding the impact of gender on health and physical education outcomes in schools.

The objectives of this study are as follows: to measure the physical activity levels of male students during extracurricular sports activities, to measure the physical activity levels of female students during extracurricular sports activities, to compare the physical activity levels between male and female students in the context of extracurricular sports programs at SMAS Katolik St. Gabriel Maumere, in order to obtain empirical data on gender differences in a local setting. The findings of this study are expected to serve as a basis for schools and stakeholders to design more inclusive sports programs that encourage the active participation of all students, regardless of gender, thereby potentially transforming the landscape of physical education in schools.

## **METHODS**

This study employed a quantitative comparative approach to identify differences in physical activity levels between male and female students participating in extracurricular sports activities. This approach was chosen because the study focused on measuring and comparing physical activity levels based on gender using numerical data that can be statistically analyzed.

The research design employed was a comparative design, in which the researcher compared two groups (male and female students) on a single measurable variable: physical activity level. Data collection involved the use of questionnaires, structured observations, and interviews to enrich the findings.

The study population consisted of all students at SMAS Katolik St. Gabriel Maumere who participated in extracurricular sports activities. The sample was selected using purposive sampling based on specific criteria: (1) active participation in extracurricular sports for at least the past three months, and (2) official registration as participants in the school's sports extracurricular program. The final sample consisted of 30 male students and 30 female students.

The research instruments used in this study included: 1) Physical Activity Questionnaire: The questionnaire was adapted from the student version of the International Physical Activity Questionnaire (IPAQ), with modified scales to

measure frequency and duration of physical activity during extracurricular sessions. 2) Field Observation: Observations were conducted over four extracurricular sessions. The observed aspects included attendance, participation in core training activities, and the intensity of physical movement during the sessions. 3) Semi-Structured Interviews: Interviews were conducted with a randomly selected group of 10 students (5 males and five females) to explore additional insights related to motivation, perceptions, and barriers in participating in extracurricular sports.

The data collection techniques were carried out in three stages: distributing the questionnaire to all respondents, conducting participatory observations during the activities, and conducting post-activity interviews to deepen the interpretation of the data.

Data analysis techniques included descriptive statistics (means and percentages) for questionnaire and observational data, as well as inferential statistics using independent sample t-tests with the aid of SPSS software to determine whether statistically significant differences existed between male and female students. The quantitative data analysis was conducted in two stages, description statistics and independent sample test.

Descriptive statistical analysis was used to identify the general trends of the data, including measures such as the mean (average), standard deviation, and percentage distribution of physical activity levels. The formula for the mean is as follows:

$$\bar{X} = \Sigma X / n$$

Explanation:

$\bar{X}$  = mean value

$\Sigma X$  = sum of all individual scores

$n$  = number of samples

To determine whether there were statistically significant differences in physical activity levels between male and female students, an independent samples t-test was conducted. The formula used is:

$$t = \frac{X1 - X2}{\sqrt{\frac{S1}{n1} + \frac{S2}{n2}}}$$

Explanation :

X1 = mean score of Group 1 (male students)

X2 = mean score of Group 2 (female students)

S1 = variance of group 1

S2 = variance of group 2

n1 and n2 = sample sizes of each group

If the significance value (p-value) is less than 0.05 ( $p < 0.05$ ), it indicates a statistically significant difference in physical activity levels between male and female students. Conversely, if the p-value is greater than or equal to 0.05 ( $p \geq 0.05$ ), it indicates that there is no statistically significant difference between the two groups.

## RESULTS AND DISCUSSION

This study involved 60 students from St. Gabriel Catholic Senior High School in Maumere, who participated in extracurricular sports activities, comprising 30 male and 30 female students. Data were collected through physical activity questionnaires, field observations during the extracurricular sessions, and interviews with selected participants from each group.

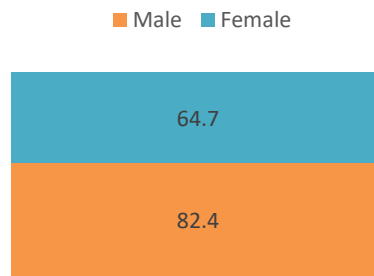
The questionnaire was adapted from the International Physical Activity Questionnaire (IPAQ) and modified to fit the context of school-based extracurricular activities. The average scores of students' physical activity levels are presented in Table 1.

**Table 1.** Average Scores of Students' Physical Activity

Student Group	Average Score	Category
Male Students	82.4	High
Female Students	64.7	Moderate

Based on the data, male students had a higher average score compared to female students. Indicates that male students were more physically active during extracurricular sports activities.

### Average Physical Activity Scores of Students



**Figure 1.** Average Physical Activity Scores of Students

The following bar graph illustrates the comparison between male and female students in terms of their physical activity levels. Male students scored an average of 82.4 (categorized as high), while female students scored an average of 64.7 (categorized as moderate).

Field observations were conducted over four extracurricular sessions, recording student engagement intensity based on three aspects: training frequency, duration of active movement, and involvement in the core training session. Key findings from the observations include: 1) Male students demonstrated active participation throughout all training phases, including warm-up, core drills, and cool-down. They frequently took initiative and leadership roles during group exercises or games, and 2) Female students tended to be more active during the initial warm-up phase but showed decreased participation during the more competitive core training sessions. Some female students preferred to observe rather than take part in the game activities. A t-test analysis revealed a statistically significant difference with a p-value  $< 0.05$ , indicating that the physical activity levels between male and female students differ significantly.

Interviews were conducted with 10 students (5 male and five female). Several factors influencing the differences in physical activity levels emerged from the interviews: 1) Motivation: Male students were generally driven by competition and performance, while female students were more motivated by health benefits and social interaction, 2) Self-confidence: Some female students reported lower confidence, expressing concerns about not keeping up with the training pace or being judged by male peers, and 3) Environment: Peer and coach support were felt

more strongly by male students compared to females, influencing their willingness to engage more actively.

The research findings reveal a significant difference in physical activity levels between male and female students participating in extracurricular sports activities. This result aligns with previous studies by Sallis and Owen (1999), who stated that males tend to exhibit higher physical activity levels during adolescence. Several internal and external factors contribute to this disparity. Internally, biological and psychological differences, such as competitive motivation and interest in physical activity, play a significant role in shaping these behaviors. Externally, social constructs regarding gender roles continue to be a barrier to active participation among female students.

Moreover, the influence of stereotypes that associate sports with masculinity also hinders the full participation of female students in physically demanding and competitive extracurricular sports. The interview findings support Hargreaves' (2000) argument that body image concerns and social pressures may cause discomfort among female students when engaging in sports in public or open settings.

From the observational data, male students generally demonstrated higher initiative and confidence in group activities, which reinforced their physical engagement during extracurricular sessions. Meanwhile, although some female students showed enthusiasm, their physical involvement was limited due to a lack of active roles during the core training sessions.

Therefore, these findings highlight the need for a more inclusive and gender-sensitive approach in organizing school-based extracurricular sports activities. Teachers and coaches should foster a training environment that is not only competitive but also provides a psychologically safe and supportive space for female students to engage fully.

## **CONCLUSIONS**

This study concludes that there is a significant difference in physical activity levels between male and female students participating in extracurricular sports activities at school. Male students tend to exhibit higher levels of physical activity. Psychosocial factors, including motivation, gender perceptions, and self-

confidence, influence this disparity. Strategic efforts are necessary for schools to encourage greater participation among female students through gender-sensitive approaches, including the selection of suitable sports types, supportive coaching, and the provision of a safe and inclusive environment.

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