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Gender Differences in Sport and Physical Activity Motivation among University Students

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Abstract

This study aimed to describe university students' motivation to participate in sport and physical activity and to examine whether such motivation differed by gender. A descriptive-comparative quantitative survey design was employed. The participants consisted of 386 undergraduate students from the 2021 cohort at Universitas Pendidikan Indonesia, selected through simple random sampling. Data were collected using the Indonesian versions of the International Physical Activity Questionnaire (IPAQ) and the Sport Motivation Scale-II (SMS-II). Descriptive statistics were used to summarize the response achievement level, while the Kolmogorov–Smirnov test and Mann–Whitney U test were applied for inferential analysis. The results showed that both male and female students demonstrated good motivation toward sport participation, with response achievement levels of 75.62% and 75.43%, respectively. However, motivation toward physical activity showed a more evident difference: male students reached the good category (68.51%), whereas female students were classified in the moderate category (63.11%). The Mann–Whitney U test indicated no significant gender difference in sport motivation (U = 6,280.000, p = 0.855, r = 0.01) but revealed a significant difference in physical activity motivation (U = 2,029.000, p = 0.002, r = 0.25). These findings highlight the need to distinguish sport from physical activity when designing gender-sensitive campus-based health promotion programs.

Keywords: gender, motivation, physical activity, sport participation, university students

Introduction

Physical activity and sport are closely related concepts, yet they are not identical. According to Bull et al. (2020) and the World Health Organization (2020), physical activity refers to any bodily movement produced by skeletal muscles that increases energy expenditure above resting levels and may occur through daily routines, transportation, household tasks, recreational activities, or structured exercise. In contrast, sport represents a more organized form of physical activity characterized by rules, specific skills, performance goals, and often a competitive element; therefore, participation in sport may generate psychological and social benefits beyond those associated with general movement behavior (Eime et al., 2013). This conceptual distinction is important because motivation toward physical activity and motivation toward sport may arise from different psychological and social mechanisms (Kilpatrick et al., 2005).

University students are a population vulnerable to declining levels of physical activity. Keating et al. (2005) reported that a large proportion of university students do not achieve adequate levels of physical activity, while Guthold et al. (2018) showed that physical inactivity remains a global public health concern among adolescents and adults. The transition from secondary school to higher education is commonly accompanied by increased academic demands, greater screen time, changes in social networks, and more sedentary behavior (Keating et al., 2005). During and after the COVID-19 period, movement restrictions and home confinement further contributed to reduced physical activity and increased sedentary behavior across many populations (Ammar et al., 2020; Sallis et al., 2020).

Motivation is a key psychological determinant of sustained participation in sport and physical activity. Within Self-Determination Theory, Ryan and Deci (2017) explain that motivation exists along a continuum ranging from amotivation to controlled motivation and autonomous motivation. Autonomous motivation, including intrinsic motivation and identified regulation, is associated with more persistent and self-endorsed behavior because it is supported by the basic psychological needs for autonomy, competence, and relatedness (Deci & Ryan, 1985; Ryan & Deci, 2017). In the sport context, Pelletier et al. (2013) developed the revised Sport Motivation Scale-II to assess different forms of motivation based on the Self-Determination Theory framework.

A gender perspective is important because participation in sport and physical activity is shaped not only by individual interest but also by social norms, stereotypes, access to facilities, perceived competence, safety, peer support, and cultural expectations (Bauman et al., 2012; Espada et al., 2023). Male students are often socialized into competitive and performance-oriented sport environments, whereas female students may encounter stronger social evaluation, body image concerns, safety issues, or lower perceived competence in public movement spaces (Egli et al., 2011; Walker & Melton, 2022). These gendered patterns may produce different motivational profiles between sport participation and general physical activity (Kilpatrick et al., 2005; Espada et al., 2023).

Previous studies have examined sport motivation or physical activity behavior among university students; however, relatively few studies have simultaneously compared motivation toward sport and physical activity from a gender perspective in Indonesian higher education. Kilpatrick et al. (2005) distinguished motives for sport participation and exercise among college students and found that competitive and appearance-related motives may differ by gender and activity domain. Egli et al. (2011) also showed that age, sex, and race were associated with exercise motivation among college students, while Espada et al. (2023) identified gender differences in university students' physical activity levels and motivation. These differences are important because sport may provide structured skills, competition, and affiliation, whereas physical activity may be more closely related to health maintenance, lifestyle, and everyday movement (Eime et al., 2013; Bull et al., 2020).

Based on this research gap, this study aimed to describe university students' motivation toward sport participation and physical activity and to examine gender-based differences in both domains. The contribution of this study lies in clarifying how male and female students differ in their motivation toward sport and physical activity within the Indonesian university context, using internationally recognized instruments such as the IPAQ and SMS-II (Craig et al., 2003; Pelletier et al., 2013).

Methods

Research Design

This study used a descriptive-comparative quantitative survey design. The descriptive approach presented students' motivation toward sport participation and physical activity, while the comparative approach examined gender-based differences. A survey design was chosen to collect standardized responses from a large population and systematically describe existing conditions (Fraenkel et al., 2012).

Table 1

Respondent Characteristic by Gender

Gender	N	Percentage (%)
Male	198	51,3
Female	188	48,7
Total	386	100

Table 2

Response Achievement Level (RAL) Interpretation Criteria

RAL Range (%)	Criteria
0,00-40,99	Very Low
41,00-55,99	Low
56,00-65,99	Moderate
66,00-80,99	Good
81,00-100,00	Very Good

Participants

The population comprised undergraduate students from the 2021 cohort at Universitas Pendidikan Indonesia. A total of 386 students participated in the study, including 198 males (51.3%) and 188 females (48.7%). The sample size was calculated using the Slovin formula with a 5% margin of error. Simple random sampling was applied to ensure that all population members had an equal chance of selection, in line with probability sampling principles in survey research (Fraenkel et al., 2012).

Instrument

Two instruments were used in this study. The International Physical Activity Questionnaire (IPAQ) was used to obtain information on students' physical activity over the previous seven days; this instrument has been widely used to estimate the intensity and duration of physical activity and has been tested across various countries (Craig et al., 2003; Lee et al., 2011). Sport motivation was measured using an adapted Indonesian version of the SMS-II. The original SMS-II consists of 24 items (Pelletier et al., 2013), whereas the version used in this study included 18 items. The Sport Motivation Scale-II (SMS-II) measures sport motivation based on the Self-Determination Theory continuum, including intrinsic motivation, identified regulation, introjected regulation, external regulation, and amotivation (Pelletier et al., 2013). The adaptation and modification of the Indonesian version of the Sport Motivation Instrument have also been reported in previous national research (Islami & Tomoliyus, 2020).

Procedure

Data were collected by distributing questionnaires to students who met the population criteria. Participants were informed about the purpose of the study and were asked to complete the questionnaires voluntarily and honestly. Prior to completing the questionnaires, all respondents provided informed consent after receiving an explanation of the study objectives, data confidentiality, and their right to participate voluntarily. Both research instruments, namely the IPAQ and SMS-II, were administered to examine the motivation of male and female students at Universitas Pendidikan Indonesia toward sport and physical activity. The collected responses were screened and tabulated before statistical analysis. Respondents' identities were kept confidential, and the data were used solely for academic purposes.

Data Analysis

Data analysis was performed using SPSS version 25. Descriptive statistics were used to calculate frequencies, percentages, scores, means, and response achievement levels. The Kolmogorov–Smirnov test was applied to assess data normality. Since several variables were not normally distributed, the Mann–Whitney U test was used to compare motivation between male and female students. The use of non-parametric procedures is appropriate when the distributional assumptions required for parametric testing are not met (Fraenkel et al., 2012).

Results

Respondent characteristics showed a relatively balanced gender distribution. As presented in Table 1, male students represented 51.3% of the sample, while female students represented 48.7%, providing an adequate basis for gender-based comparison.

Table 3

Description of Sport Motivation

Group	N	Score	Mean	Response Achievement Level	Category
Female	93	5,051	3.02	75.43%	Good
Male	137	7,459	3.02	75.62%	Good
Combined	230	12,510	3.02	75.54%	Good

Table 4

Description of Physical Activity Motivation

Group	N	Score	Mean	Response Achievement Level	Category
Female	95	4,317	2.52	63.11%	Moderate
Male	61	3,009	2.74	68.51%	Good
Combined	156	7,326	2.61	65.22%	Moderate

Table 5

Mann-Whitney Test Results

Variable	Sig. (2-tailed)	Decision
Sport Motivation by Gender	0.855	Not significant
Physical Activity Motivation by Gender	0.002	Significant

The Response Achievement Level (RAL) was used to express motivation scores as percentages of the maximum scale score. RAL was calculated using the formula: RAL = [actual score / (N × number of items × maximum item score)] × 100, or equivalently, RAL = (mean / 4) × 100. Since both instruments used a 1–4 Likert scale, the maximum item score was 4.

The RAL interpretation criteria are presented in Table 2. An RAL of 66.00–80.99% was categorized as good, while 56.00–65.99% was categorized as moderate. These criteria were used to classify the results in Tables 3 and 4.

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Table 2 shows that, based on sport participation orientation, male students more frequently reported performance-oriented sport participation, whereas female students were relatively more represented in recreational physical activity. This pattern indicates that gender may be associated with the type and purpose of movement participation.

Motivation toward sport participation is presented in Table 3 and was categorized as good for both male and female students. Male students obtained a response achievement level of 75.62%, while female students obtained 75.43%. The combined response achievement level was 75.54%, indicating that students generally demonstrated good motivation when the activity was framed as sport.

Motivation toward physical activity showed a different pattern. As presented in Table 4, male students obtained a response achievement level of 68.51%, which was categorized as good, whereas female students obtained 63.11%, which was categorized as moderate. The combined response achievement level was 65.22%, which was categorized as moderate. These results suggest that gender differences were more apparent in motivation toward general physical activity than in sport motivation.

Therefore, the Mann–Whitney U test was used to examine gender differences in motivation toward sport participation and physical activity. The results showed no significant gender difference in sport motivation, U = 6,280.000, Z = -0.183, p = 0.855, r = 0.01. This effect size indicates

that the difference in sport motivation between male and female students was very small.

In contrast, a significant gender difference was found in physical activity motivation, U = 2,029.000, Z = -3.158, p = 0.002, r = 0.25. This effect size indicates a small-to-moderate difference in physical activity motivation. Thus, gender differences were not statistically evident in sport motivation but were evident in physical activity motivation.

Discussion

The first finding showed that both male and female students had good motivation toward sport participation, with no statistically significant difference between them. This result suggests that when movement behavior is organized as sport, motivational structures may become relatively similar across genders because sport provides clear goals, rules, peer interaction, skill learning, and opportunities for achievement (Eime et al., 2013; Moradi et al., 2020). This interpretation is consistent with Self-Determination Theory, which states that motivation is strengthened when activities support competence, autonomy, and relatedness (Ryan & Deci, 2017).

The non-significant gender difference in sport motivation may also be influenced by the university context. Universitas Pendidikan Indonesia provides sport-related facilities, an academic environment, and a social culture that may normalize sport participation among both male and female students. Research on sport participation indicates that supportive environments, peer relationships, and structured activity settings can enhance psychosocial benefits and motivation to participate (Bean et al., 2018; Eime et al., 2013). Therefore, the availability of structured sport opportunities may reduce gender differences in sport motivation.

The second finding revealed a significant gender difference in physical activity motivation. Male students demonstrated higher motivation toward physical activity than female students. This difference may be explained by broader social and environmental factors. Unlike sport, physical activity is less structured and may depend more strongly on individual lifestyle, perceived safety, social support, time availability, and cultural expectations (Bauman et al., 2012; Berliana et al., 2021; Guthold et al., 2018). Previous studies have also reported gender differences in physical activity motivation among university students, with male students often showing stronger motives related to competence, competition, and challenge, whereas female students may report motives related to appearance, health, or social affiliation (Egli et al., 2011; Espada et al., 2023; Kilpatrick et al., 2005).

This finding is also consistent with Indonesian sport sociology research. Berliana et al. (2021) showed that women's participation in masculine sports is shaped by body image concerns, hegemonic masculinity, and family-related factors. In the context of the present study, this evidence helps explain why female students' physical activity motivation may be more sensitive to social evaluation and cultural expectations than their motivation toward structured sport participation.

From the perspective of Self-Determination Theory, lower physical activity motivation among female students may indicate that their basic psychological needs are not equally fulfilled in everyday movement contexts. Physical activity programs that do not provide meaningful choice, social connection, perceived competence, or a safe environment may be less effective in developing autonomous motivation (Deci & Ryan, 1985; Komarudin, 2015; Ryan & Deci, 2017). Therefore, gender-sensitive physical activity promotion should not only provide facilities but also create inclusive, supportive, and autonomy-enhancing activity experiences for female students (Bauman et al., 2012; Espada et al., 2023).

Komarudin (2015) emphasized that motivation in sport is closely related to persistence, self-confidence, goal setting, and mental readiness. This perspective reinforces the interpretation that motivation is not merely a preference for being active, but a psychological resource that enables students to initiate, sustain, and regulate sport or physical activity behavior.

The distinction between sport motivation and physical activity motivation confirms the importance of separating these two constructs. If sport and physical activity are combined into a single variable, important differences may be overlooked. In this study, sport motivation was good and did not differ significantly by gender, whereas physical activity motivation was moderate and differed significantly by gender. These findings support the view that sport and physical activity have distinct motivational characteristics and should be analyzed separately in student health promotion and sport development research (Kilpatrick et al., 2005; Eime et al., 2013; Bull et al., 2020).

The practical implication of this study is that universities should design gender-sensitive physical activity promotion programs. For male students, programs may incorporate healthy competition, challenges, and performance feedback. For female students, programs should emphasize autonomy, safety, enjoyment, social support, positive body-related messages, and gradual competence development. Such strategies are aligned with Self-Determination Theory and with evidence that social and environmental

correlates influence physical activity participation (Bauman et al., 2012; Ryan & Deci, 2017).

This study has several limitations. First, the cross-sectional survey design cannot establish a causal relationship between gender and motivation. Second, the study relied on self-report questionnaires, which may be influenced by recall bias and social desirability. Third, the sample was limited to one university; therefore, the findings should be generalized with caution. These limitations are common in survey-based physical activity research and should be addressed in future studies through longitudinal designs, mixed methods, and multi-campus sampling (Fraenkel et al., 2012; Lee et al., 2011).

Conclusions

This study concludes that students' motivation toward sport participation was categorized as good and did not differ significantly between male and female students. In contrast, students' motivation toward physical activity showed a significant gender difference, with male students demonstrating a higher response achievement level than female students. These findings indicate that sport and physical activity should be treated as related but distinct domains when analyzing motivation. The results support the need for campus-based programs that are not only health-oriented but also gender-sensitive, inclusive, and capable of strengthening students' autonomous motivation to maintain an active lifestyle.

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