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EXTENDED ABSTRACT

The Relationship Between Physical Activity and Sleep Quality Among Gamers at UiTM Seremban 3

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I. Introduction

The rise of gaming as a dominant form of entertainment among university students has contributed to sedentary lifestyles and potential disruptions in sleep quality [1][2]. Gamers often experience reduced physical activity (PA) and irregular sleep patterns due to prolonged screen exposure and nighttime gaming habits [3]. Sleep quality (SQ) is crucial for cognitive performance, mental well-being, and overall health, especially for gamers who rely on focus and endurance [1]. This study aimed to examine the relationship between PA and SQ among gamers at UiTM Seremban 3. By understanding this relationship, the study seeks to promote healthier habits among student gamers.

II. Methods

This quantitative, non-experimental study employed a correlational survey design. A total of 103 respondents were purposively sampled from among UiTM Seremban 3 students who self-identified as gamers, defined as individuals engaging in gaming for at least three sessions per week. Two validated instruments were used: the International Physical Activity Questionnaire (IPAQ-SF) to assess physical activity levels [4], and the Pittsburgh Sleep Quality Index (PSQI) to evaluate sleep quality [1]. Descriptive statistics (mean, SD) were used to identify PA and SQ levels, while inferential statistics (Chi-square and Independent Samples t-test) were used to test relationships and gender differences using Jamovi software.

III. Results and Discussion

A. Physical Activity Levels

As shown in Table I, most respondents (n = 56) had high physical activity levels (M = 3.00, SD = 0.00), followed by low (n = 26, M = 1.00) and moderate (n = 21, M = 2.00) levels. This indicates that most student gamers were physically active, likely influenced by their sports-related academic background [2].

Table I
Physical Activity Level Among Gamers At UiTM Seremban 3

Physical Activity Level	N	Mean	SD
High	56	3.00	0.00
Moderate	21	2.00	0.00
Low	26	1.00	0.00

B. Pittsburgh Sleep Quality Index

Despite high PA levels, 83.5% of respondents were classified as having poor sleep quality, with a mean PSQI score of 8.38 (SD = 2.56), indicating that PA alone may not ensure better sleep outcomes in gaming populations [1][3].

Table II
Sleeping Quality Among Gamers At UiTM Seremban 3

		N	Mean	Median	SD
Global PSQI Scores	Poor	86	8.38	8.00	2.563
	Good	17	3.12	3.00	0.993

C. Relationship Between PA and SQ

The as chi-square test showed no statistically significant association between physical activity level and sleep quality (χ^2 = 2.89, p = .235). This implies that although physical activity is known to benefit sleep, other behavioural or environmental factors—such as gaming late at night—may override these benefits [3][5].

Table III
Relationship Between Physical Activity And Sleeping Quality

	Value	df	p
X^2	2.89	2	0.235
N	103		

D. Gender Differences

An Independent Samples t-test revealed no significant difference in sleep quality between male and female gamers (t (101) = -1.95, p = .054), although the result was marginal. Both genders were similarly affected in terms of poor sleep outcomes, suggesting a shared pattern of gaming-related habits [2][5].

Table IV
Comparison Between Gender On Sleeping Quality

		Statistic	df	p
Global PSQI Score	Student;s t	-1.95	101	0.054

IV. CONCLUSIONS

Although most of the gamers from this research displayed high levels of physical activity, a significant number still showed poor sleep quality. This indicates that physical activity can be a positive contributor to sleep but may not completely mitigate the negative effects of excessive screen time, gaming-related cognitive stimulation, and inconsistent sleeping patterns seen in many gamers. Such activity or behaviors can negatively influence circadian rhythms, potentially decrease melatonin production due to blue light exposure, and heighten mental arousal, which may interfere with sleep even when a person is active [1][3][5].

Similar results were found by [6] in that high screen time and irregular sleep-wake patterns had a negative impact on the positive effects of physical activity on sleep quality of the university students [6]. Based on the same idea, [7] also found that media use, particularly gaming, negatively influenced sleep quality, even in physically active participants [7]. Collectively, the evidence suggests that physical activity alone is not a protective factor in populations undertaking high amounts of screen-based behaviours. Interventions focused on physical activity alone should not be expected to be successful on its own because a comprehensive intervention—including sleep hygiene education, screen time management, blue light reduction (e.g., night mode filters or reductions in evening gaming), and behavioural interventions—would be needed to improve sleep outcomes in this population.

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