

Impact of sports enjoyment on academic resilience among student-athletes

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Authors' Contribution: A – Study design; B – Data collection; C – Statistical analysis; D – Manuscript Preparation; E – Funds Collection

Abstract

Background and Study Aim Previous studies have shown that students who enjoy participating in sports can improve their resilience in academic endeavors. However, such studies are predominantly conducted internationally. Few, if any, focus on the Philippine higher education setting. This study aimed to determine the direct influence of sports enjoyment on academic resilience.

Material and Methods The respondents in this study are student-athletes from different sports events, currently enrolled in the 1st Semester of the Academic Year 2023-2024 at Bulacan State University in the Philippines. Data were collected using an online survey questionnaire administered via Google Forms. This study employed three separate questionnaires. The first questionnaire gathered demographic characteristics of the respondents. The second part used the Physical Activity Enjoyment Scale-8 (PACES-8). The final part consisted of the Academic Resilience Scale-30 (ARS-30). The relationship between sports enjoyment and academic resilience was measured using Pearson-r. To determine the direct influence of sports enjoyment on academic resilience, simple linear regression was performed.

Results The findings indicate a positive and significant relationship between the two variables [$r(299) = .435$, $p < .05$]. This suggests that when athletes derive great pleasure from their sporting activities, their ability to persevere academically is enhanced. Thus, engaging in sports helps students overcome difficulties in their educational setting and improves their academic achievement. Additionally, sports enjoyment (SE) predicts academic resilience (ARS). This indicates that SE has a direct influence on ARS [$F(1, 229) = 53.528$, $p < .001$]. The $R^2 = .189$ suggests that the model accounts for 18.9% of the variance in ARS.

Conclusions Sports enjoyment (SE) can be considered a predictor of academic resilience. Based on the findings, participating in various sports events may significantly boost academic performance and lessen maladjustments in a challenging academic environment.

Keywords: academic resilience, higher education, sports enjoyment, student-athletes

Introduction

In today's competitive educational environment, students face increasing academic demands and pressures. Many struggle to maintain their performance and well-being under these challenging conditions. In this context, the concept of resilience has gained significant attention in recent years, especially in academic circles, due to its association with academic achievement and the ability to adjust to unfamiliar situations [1, 2, 3]. Students who flourish in the most demanding learning environments are those who can endure hardship and emerge stronger [4, 5]. Students with academic resilience demonstrate a higher level of commitment to their studies compared to their peers who lack this ability. They can utilize their internal resources to maintain motivation under challenging situations.

The research conducted by Xu et al. [6] investigated the association between physical

exercise, fulfillment of psychological needs, and resilience in college students. The study suggests that participating in physical activity positively impacts the resilience of college students by meeting their fundamental psychological needs, such as autonomy, competence, and relatedness. The results indicate that advocating for physical activity can effectively improve students' resilience and overall well-being. Furthermore, the study emphasizes the importance of considering the fulfillment of psychological needs as a mediating factor in the association between physical activity and resilience. This report provides valuable information for educators and health professionals aiming to assist college students in enhancing their mental health and resilience. This can be achieved through specific interventions that focus on encouraging physical exercise and psychological well-being [7].

The correlation between the enjoyment of sports and academic resilience is marked by mutual interaction. Participation in sports activities has a favorable impact on academic resilience, and

conversely, academic resilience can enhance the enjoyment of sports. Engaging in sports brings about a range of mental and physical advantages, such as decreased stress, elevated mood, and higher cognitive abilities, all of which can contribute to academic resilience [8]. Engaging in sports also fosters essential abilities like self-control [9], efficient use of time [10], and goal-setting [11], which are vital for achieving academic excellence. Moreover, participating in sports can provide social support and promote a sense of belonging, which can help mitigate academic stressors and enhance resilience [12]. Academic resilience, which involves traits such as tenacity, adaptability, and positive attitudes towards learning [13], can improve the enjoyment of sports by promoting internal motivation and psychological well-being. In summary, the correlation between the enjoyment of sports and academic resilience underscores the holistic aspect of student growth, highlighting the importance of maintaining a balance between physical activity and academic endeavors for overall health and achievement.

Previous studies have established a robust correlation between the enjoyment of sports and academic resilience. However, there is a lack of research and documentation regarding student-athletes in higher education, particularly in the Philippines. This study aims to further explore the correlation between the enjoyment experienced by student-athletes in sports and its influence on their ability to persevere in academic tasks.

Statement of the Problem

1. How may the respondents be described in terms of: a. Sex b. Age c. Sports events;
2. Is there a significant relationship between sports enjoyment and academic resilience?
3. Does sports enjoyment predict academic resilience?

Hypotheses formulation

Based on previously conducted studies, it was revealed that there is a significant relationship between sports enjoyment and academic resilience. In this regard, the present study focuses on testing the following hypotheses: H1: There is a positive and significant relationship between sports enjoyment and academic resilience. H2: Sports enjoyment positively predicts academic resilience.

This study aimed to determine the direct influence of sports enjoyment on academic resilience.

Materials and Methods

Participants

The respondents in this study are student-athletes from different sports events, currently enrolled in the 1st Semester of the Academic

Year 2023-2024 at Bulacan State University in the Philippines. Participants were selected using purposive sampling, a non-probability method where the researcher selects respondents based on characteristics particularly well-suited for the study. Table 1 presents the demographic characteristics of the participants. The majority of the respondents are male. Most student-athletes are between the ages of 19 and 21. Among all sporting events, most student-athletes involved in this study participate in diverse combative sports.

Ethical statement

The respondents were provided with information regarding the objectives of the research, as well as the specific measures and variables of concern. The researcher communicated the study's implications to the higher education institution and the wider scientific community. Respondents expressed their consent by selecting an agreement incorporated into the Google Forms. They were given the choice to participate or decline. The potential unease associated with answering personal and sensitive survey questions was highlighted as a minor risk for participants to consider prior to consenting. Respondents were allowed to withdraw or be debriefed at any time, subject to these conditions.

Table 1. Respondents' Demographic Background

Demographic characteristic	Items	N(%)
Sex	Male	126(54.55%)
	Female	105(45.45%)
Age	19-21 years old	195(84.42%)
	22-24 years old	29(12.55%)
	25 years old and above	7(3.03%)
Sports event	Basketball	23(9.96%)
	Volleyball	38(16.45%)
	Swimming	34(14.72%)
	Table Tennis	4(1.73%)
	Combative Sports	42(18.18%)
	Badminton	10(4.33%)
	Archery	14(6.06%)
	Baseball	4(1.73%)
	Lawn Tennis	2(0.87%)
	Athletics	9(42.86%)
	Softball	1(0.43%)
	Boxing	4(1.73%)
	Chess	13(5.63%)
	Sepak Takraw	8(3.46%)
	Dance sports	22(9.52%)
	E-games	2(0.87%)
	Total	231(100.00%)

Research Design

This study is quantitative in nature and utilizes a predictive method. Data collection from respondents was conducted using an online survey questionnaire administered via Google Forms. Online data collection allows for the efficient acquisition of large volumes of data with minimal resources, cost, and time commitment [14]. This study employed three separate questionnaires. The first questionnaire was used to obtain the demographic characteristics of the respondents. The second part is the Physical Activity Enjoyment Scale-8 (PACES-8) developed by Mullen et al. [15]. It is a self-report questionnaire designed to evaluate an individual's level of enjoyment in engaging in physical activities, such as sports events. The scale comprises eight items that encompass different facets of enjoyment encountered during physical activity, including gratification from exercise, the element of amusement, and overall contentment with the activity. Respondents evaluate each item using a Likert-type scale, ranging from 1 (strong disagreement) to 7 (strong agreement). The Academic Resilience Scale-30 (ARS-30) by Cassidy [16] was also used. It consists of 30 items that measure different aspects of academic resilience, such as students' capacity to recover from academic setbacks, manage stress, sustain motivation and concentration, and seek assistance when necessary. Respondents' answers are recorded on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

Statistical Analysis

In order to analyze the data, Statistical Package for the Social Sciences (SPSS) version 29 using MacOS was utilized. A factor analysis using SmartPLS4 was performed to determine if the questionnaires are suitable for this particular cultural context and to assess the reliability of the instruments. According to Hair et al. [17], the loading value of each item should be >0.70 . After excluding all items with a reliability score of <0.70 from the model, all remaining items exhibited an acceptable reliability value. The Cronbach's Alpha value (α) and composite reliability score should also exceed >0.70 . The assessment of constructs requires the use of the Average Variance Extracted (AVE) metric, which is the average value of the squared loadings of the items associated with the construct. This metric is commonly used to evaluate the presence of convergent validity. According to Hair et al. [17], the AVE should be >0.50 . The associated p-value must be ≤ 0.05 . Finally, a full collinearity assessment was conducted to ascertain no evidence of common method bias (CMB), with values needing to be <3.3 [17].

Results

Table 2 presents the achievement of threshold values for Cronbach's Alpha, composite reliability, and average variance extracted: Academic Resilience (CA: 0.932, CR: 0.937, AVE: 0.595) and Sports Enjoyment (CA: 0.897, CR: 0.919, AVE: 0.658). In this regard, convergent validity has been established. An examination using the Fornell-Larcker criterion,

Table 2. Measurement model

Constructs	Items	Loadings	CA (α)	CR	AVE	VIF
Academic resilience	ARS11	0.770	0.932	0.937	0.595	2.156
	ARS13	0.742				2.158
	ARS16	0.720				2.404
	ARS18	0.734				2.123
	ARS20	0.775				2.414
	ARS21	0.736				2.162
	ARS22	0.822				2.916
	ARS24	0.726				1.988
	ARS25	0.808				2.988
	ARS27	0.843				3.127
	ARS30	0.800				2.545
Sports enjoyment	PACES1	0.756	0.897	0.919	0.658	1.743
	PACES2	0.761				2.195
	PACES3	0.850				2.774
	PACES4	0.796				2.789
	PACES6	0.872				3.687
	PACES8	0.825				2.160

cross-loadings, and Heterotrait-Monotrait ratio (HTMT) was performed to assess discriminant validity. The square root of the AVE exceeded the correlation between latent variables (Academic Resilience: 0.772, Sports Enjoyment: 0.811), confirming discriminant validity. Additionally, the HTMT ratio was found to be 0.484, which is below the threshold of 0.90, further establishing discriminant validity. Table 3 illustrates the cross-loading results, where each indicator surpassed the loadings of the indicators for the corresponding constructs. Most items have VIF values <3.3, indicating that the model is free from common method bias (CMB).

Table 3. Cross-loading

Items	Academic Resilience	Sports Enjoyment
ARS11	0.770	0.342
ARS13	0.742	0.347
ARS16	0.720	0.365
ARS18	0.734	0.424
ARS20	0.775	0.321
ARS21	0.736	0.268
ARS22	0.822	0.369
ARS24	0.726	0.307
ARS25	0.808	0.358
ARS27	0.843	0.449
ARS30	0.800	0.353
PACES1	0.363	0.756
PACES2	0.290	0.761
PACES3	0.365	0.850
PACES4	0.280	0.796
PACES6	0.382	0.872
PACES8	0.509	0.825

A normality test was performed for both questionnaires used in the present study. The findings show that the skewness and kurtosis values of all scales fall within the acceptable range [-2, 2] (Academic Resilience: Skew = -1.401, Kurt = 2.385; Sports Enjoyment: Skew = -1.098, Kurt = 1.006). Therefore, it can be postulated that the data are normally distributed, allowing the use of parametric tests to determine the association between the two variables.

To determine the direct influence of sports enjoyment on academic resilience, simple linear regression was performed. This statistical technique models and examines the association between a single independent variable and a single dependent variable using a linear equation.

The correlational analysis results show a positive and significant relationship between sports enjoyment and academic resilience [$r(299) = .435$, $p < .05$]. This suggests that when athletes highly enjoy

their sports endeavors, their academic resilience also increases. Therefore, enjoyment of sports may help students adjust to their educational environment and bolster their academic performance amidst challenges. H1 is supported.

The results of the linear regression analysis indicate that sports enjoyment predicts academic resilience [$F(1, 229) = 53.528$, $p < .001$], with an R^2 value of 0.189, suggesting that the model accounts for 18.9% of the variance in academic resilience. This finding supports the hypothesis that sports enjoyment can be considered a predictor of academic resilience (H2).

Discussion

The objective of this study was to explore the correlation between sports enjoyment and academic resilience among student-athletes. The results demonstrated a positive and significant relationship between these variables, indicating that higher levels of enjoyment in sports are associated with increased academic resilience. Furthermore, linear regression analysis revealed that sports enjoyment predicts academic resilience, accounting for 18.9% of the variance. These findings suggest that promoting sports enjoyment can enhance students' ability to cope with academic challenges.

In this context, many studies indicate that the correlation between sports enjoyment and academic resilience is established by various psychological and physiological mechanisms. The enjoyment of sports serves as a catalyst for promoting internal motivation, self-worth, and belief in one's abilities, all of which are essential elements of academic resilience [18,19]. When student-athletes find enjoyment and fulfillment in participating in sports activities, they are more inclined to feel a sense of proficiency and expertise [20], which in turn boosts their confidence in their capacity to overcome academic obstacles [21, 22]. Additionally, engaging in sports offers opportunities for social interaction, collaboration, and skill enhancement, all of which contribute to the establishment of supportive relationships and social networks [23, 24]. These interpersonal relationships act as protective factors against academic stressors, enhancing students' ability to recover by offering emotional assistance, motivation, and a sense of inclusion.

Moreover, the physiological advantages of engaging in physical activity are essential in improving academic resilience. Participating in sports stimulates the secretion of endorphins and neurotransmitters such as dopamine and serotonin, which are linked to enhanced mood control, decreased stress, and overall psychological welfare [25,26]. These alterations in neurochemicals not only alleviate adverse emotions but also enhance cognitive function, attention, and memory, which

are crucial for academic achievement. Hence, individuals who find pleasure in sports are more inclined to demonstrate enhanced emotional resilience, adaptability, and persistence when confronted with academic difficulties [27]. The correlation between the enjoyment of sports and academic resilience emphasizes the comprehensive aspect of student well-being and the significance of incorporating sports activities into educational settings to enhance students' overall resilience and academic achievements.

Research suggests that engaging in sports could lead to favorable psychological effects, including enhanced self-esteem and decreased stress levels, which are essential elements of academic resilience. Miller et al. [28] found that participating in sports enhances students' perception of competence and achievement, thereby improving their capacity to handle academic difficulties. Similarly, Eime et al. [29] discovered that adolescents who derive pleasure from sports exhibit elevated levels of mental well-being, enabling them to efficiently cope with academic stress and challenges. Moreover, engaging in sporting activities promotes a feeling of accomplishment and proficiency, which can be transferred to academic environments. Marsh and Kleitman [30] found that students who achieve success and derive pleasure from participating in sports are more inclined to transfer the same perseverance and dedication to their academic endeavors.

Moreover, involvement in sports frequently leads to the formation of robust social connections, which are essential for academic resilience. Husain et al. [31] discovered that social support from peers and coaches in sports settings can help students manage academic stress and negative experiences. Participation in sports enhances self-regulation skills [32], such as time management and discipline, which are crucial for developing resilience. Lastly, sports enjoyment can boost intrinsic motivation. Scholars have proposed that intrinsic motivation, driven by the enjoyment of activities, leads to greater persistence and resilience in the face of academic challenges [33, 34, 35].

The findings collectively demonstrate that the enjoyment of sports plays a substantial role in academic resilience through various interconnected pathways. Participating in sports promotes psychological well-being, improving mental health and providing students with the emotional tools necessary to effectively manage academic stress and challenges. Additionally, the sense of accomplishment and proficiency gained from succeeding in sports can be transferred to academic environments, as individuals utilize the same determination and perseverance in their academics. Moreover, the social support networks formed through participating in sports, such as

bonds with fellow athletes and motivation from coaches, play a crucial role in mitigating the stress of academic demands. Engaging in sports also fosters the development of self-regulation abilities, including time management and discipline, which are essential for sustaining academic achievement and resilience. The inherent drive to engage in athletic activities, fueled by the pleasure derived from them, results in increased determination and ability to overcome challenges in academic endeavors. Therefore, participating in sports not only improves student-athletes' physical well-being but also cultivates crucial psychological and social abilities that support their academic resilience, making it an indispensable aspect of holistic growth and achievement.

The significance of this study is heightened by its focus on the immediate influence of sports enjoyment on academic resilience among student-athletes in the Philippines, an area that has received less attention in the literature. This study provides a distinctive perspective on how the academic resilience of Filipino student-athletes is influenced by the enjoyment they derive from sports activities, thereby addressing a gap in this dynamic in a non-Western context.

Conclusions

A substantial amount of literature investigating the correlation between sports enjoyment and academic resilience highlights the diverse advantages of participating in sports for the well-being and academic achievement of students. The correlation between the enjoyment of sports and academic resilience is both beneficial and noteworthy, underscoring the interdependence of physical activity and psychological resilience. Sports enjoyment enhances intrinsic drive, confidence, relationships, and psychological well-being through a range of psychological and physiological mechanisms. These factors collectively empower students to effectively handle learning difficulties and excel in educational environments. The results indicate that incorporating sports activities into learning environments can be an effective approach to fostering student resilience and improving overall academic performance. By acknowledging the comprehensive nature of student growth and the beneficial influence of sports involvement on academic perseverance, educators and policymakers can establish focused interventions and initiatives aimed at nurturing student well-being and achievement.

Future Research Directions

It is recommended that future research investigates the correlation between sports enjoyment and academic resilience using diverse

methodologies. Approaches such as qualitative and mixed-methods can provide a deeper understanding of individual experiences and psychological processes. These methods can provide in-depth understanding of how sports participation influences academic resilience through individual experiences and psychological processes. Expanding studies to diverse groups of student-athletes and examining factors like gender, age, and type of sport can further elucidate the connection. This comprehensive approach can help design targeted interventions to enhance student well-being and academic achievement.

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