

THE RELATIONSHIP BETWEEN UNIVERSITY SPORTS EXPERIENCES AND ACADEMIC PERFORMANCE IN STUDENT-ATHLETES

A RELAÇÃO ENTRE AS EXPERIÊNCIAS ESPORTIVAS UNIVERSITÁRIAS E O DESEMPENHO ACADÊMICO EM ESTUDANTES-ATLETAS

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Abstract

University sports, including events like the Brazilian University Games (JUBs), offer opportunities for personal and social development, but also require students to balance training and competitions with academic demands. Given this, the present study investigated the relationship between the experiences of university athletes and the academic performance of student-athletes. This cross-sectional, quantitative study involved 34 student-athletes from a higher education institution (HEI) who participated in the 2024 Pernambuco University Games. The instruments used were the Brazilian version of the University Sport Experiences Scale - Portuguese (USES-BR) and the semestral Academic Performance Coefficient (CRE). Data analysis was conducted using the Kolmogorov test and Pearson's correlation coefficient. The results showed that positive sports experiences, such as social skills, initiative, and interpersonal relationships, had higher scores compared to negative experiences (stress, social exclusion). Significant ($p < 0.05$), positive, and weak ($r < 0.40$) correlations were found between basic skills and interpersonal relationships from sports experiences and the semestral CRE ($r = 0.32$ and $r = 0.27$, respectively). It was also noted that the dimensions of positive sports experiences showed positive correlations among themselves (r between 0.28 and 0.51), while negative experiences also showed positive correlations among themselves (r between 0.21 and 0.39). Finally, it was observed that positive sports experiences showed negative correlations with the negative experiences (r between -0.32 and -0.52). It was concluded that certain sports experiences -especially those related to the development of basic skills and the quality of interpersonal relationships - are positively associated with academic performance.

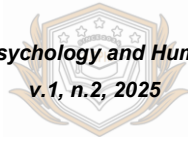
Keywords: College sports; Academic Performance; Student-Athletes; Sporting Experiences.

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Resumo

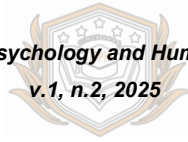
O esporte universitário, incluindo eventos como os Jogos Universitários Brasileiros (JUBs), oferece oportunidades de desenvolvimento pessoal e social, mas também exige que os estudantes conciliem treinos e competições com as demandas da vida acadêmica. Diante disso, este estudo investigou a relação entre as experiências de atletas universitários e o desempenho acadêmico em estudantes-atletas. Participaram deste estudo transversal e quantitativo 34 estudantes-atletas de uma Instituição de Ensino Superior (IES), participantes dos Jogos Universitários de Pernambuco em 2024. Como instrumentos foram utilizados a versão brasileira do *University Sport Experiences Scale - Portuguese* (USES-BR) e o Coeficiente de Rendimento Escolar (CRE) semestral. A análise de dados foi conduzida por meio do teste de *Kolmogorov* e coeficiente de correlação de *Pearson*. Os resultados evidenciaram que as experiências esportivas positivas, como as habilidades sociais, iniciativa e relações interpessoais, apresentaram escores superiores em detrimento às experiências negativas (estresse, exclusão social). Foram encontradas correlações significativas ($p < 0,05$), positivas e fracas ($r < 0,40$) das experiências esportivas de habilidades básicas e relações interpessoais com o CRE semestral ($r = 0,32$ e $r = 0,27$, respectivamente). Nota-se também que as dimensões de experiências esportivas positivas apresentaram correlações positivas entre si (r entre 0,28 e 0,51), enquanto as experiências negativas também apresentaram correlações positivas entre si (r entre 0,21 e 0,39). Por fim, observou-se que as experiências esportivas positivas apresentaram correlações negativas com as experiências negativas (r entre -0,32 e -0,52). Concluiu-se que determinadas experiências esportivas - especialmente as relacionadas ao desenvolvimento de habilidades básicas e à qualidade das relações interpessoais - apresentam associações positivas com o desempenho acadêmico.

Palavras-chave: Esporte universitário; Desempenho acadêmico; Estudantes-atletas; Experiências esportivas.

1 INTRODUCTION

Brazilian university sports have unique characteristics, marked by a rich diversity of sports and an intense competitive calendar, which includes highly relevant events such as the Brazilian University Games (JUBs). These competitions, in addition to promoting sportsmanship and integration between educational institutions, play a fundamental role in the comprehensive development of students, offering opportunities for personal, social, and academic development (Quang, 2024).

This competitive routine, represented by events such as the Brazilian University Games (JUBs), not only promotes sportsmanship and academic integration, but also imposes on student-athletes the constant challenge of balancing their sports careers - with training and competitions - and academic demands, such as studies and internships (Corrêa, 2019). This delicate balance highlights the



importance of sports practice not only as an instrument of physical development, but also as a means of promoting mental and social health, contributing to the integral development of the individual (Melo *et al.*, 2022).

Studies show that regular participation in sports activities is associated with stress relief, increased self-esteem, social interaction, weight control, and improved physical fitness and overall well-being (Matsudo; Matsudo; Barros Neto, 2000; Eime *et al.*, 2013; Eather; Pankowiak; Eime, 2023). However, the university sports experience involves both positive and negative experiences, which can directly influence the academic performance of athletes (Zhou, 2024).

Positive sports experiences, such as building friendships, strengthening teamwork, overcoming challenges, and receiving recognition for effort, tend to promote a more balanced academic environment. These aspects contribute to emotional well-being and motivation, creating a virtuous cycle that favors concentration, time management, and commitment to studies (Cevada *et al.*, 2013).

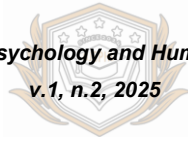
On the other hand, negative experiences, such as injuries, excessive competitive pressure, lack of institutional support, or difficulties balancing training and academic activities, can generate stress, anxiety, and fatigue, harming both athletic and academic performance (Agortey, 2023). This duality highlights the importance of support strategies that promote mental health and balance between the two spheres of university life (Martins; Rocha; Costa, 2020; Zhou, 2024).

Throughout undergraduate studies, understanding how these experiences shape student-athletes' academic careers is essential for developing policies and practices that ensure not only athletic success but also a solid and satisfying academic education. Therefore, this study sought to investigate the relationship between college athletic experiences and student-athletes' academic performance.

2 PROCEDURES AND METHODS

2.1 Type of study

This study was developed using the *Strengthening the Reporting of Observational guidelines Studies in Epidemiology* (STROBE) for observational studies (Malta *et al.*, 2010). This research will be characterized as quantitative,



analytical, observational, with a cross-sectional design, seeking to obtain information on the relationship between psychological variables, but without interfering with the reality of health professionals (Thomas; Nelson; Silverman, 2009).

2.2 Participants

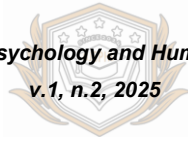
Male and female university athletes from sports teams selected for the Pernambuco University Games of a Higher Education Institution (HEI) in 2024 were invited to participate in this study. The athletes were evaluated at the end of the training period for the Pernambuco qualifying phase for the Brazilian University Games, which lasted four months (January to April 2024). The athletes were selected non-probabilistically and by convenience.

The inclusion criteria were as follows: 1) Be at least 18 years old; 2) Have been practicing the sport for at least three months; and 3) Be registered as an athlete in the Pernambuco University Games. In turn, the exclusion criterion established was the athlete not having answered at least one of the questionnaires. Only those who signed the Free and Informed Consent Form (FICF) participated in the study.

2.3 Instruments

A sociodemographic questionnaire created by the researchers was applied to collect data from the subjects such as: age, sex, course, modality, time practicing the modality, weekly training time.

To measure university sporting experiences, the University Sport Experiences was used Scale - Portuguese (USES-BR) developed by Rathwell and Young (2016) and validated for the Brazilian context by Rathwell *et al.* (2021). The scale consists of 39 items, aiming to measure sports experiences based on eight dimensions: initiative (e.g., "I am more committed"); basic skills (e.g., "I believe I have improved my creative abilities"); interpersonal relationships (e.g., "I value other people's social contexts more"); social skills and teamwork (e.g., "I am better at supporting others"); adult networks and social capital (e.g., "I feel more supported by the off-campus community"); stress (e.g., "I am often stressed"); social exclusion (e.g., "I often feel left out"); and inappropriate social behavior (e.g., "I am often exposed to leaders who



belittle me"). Participants responded on a 7-point Likert-type scale from 1 (Strongly Disagree) to 7 (Strongly Agree).

To obtain data on the half-yearly School Performance Coefficient (CRE), each athlete's telephone number was requested so that researchers could contact them at the end of the first academic semester in July 2024 to request the CRE for each research participant.

2.4 Data collection and ethical aspects

This project is integrated into the institutional project entitled "Factors associated with the development of life skills in young sports practitioners," which was approved by the Research Ethics Committee (CEP) under opinion 6,723,610, in accordance with the standards of Resolution 466/2012 of the National Health Council on research involving human subjects. Data collection was conducted at the teams' training sites throughout April 2024, subject to each team's availability.

The researchers initially contacted coaches or university team managers to explain the research and establish a time and place for the study. After the study was explained, interested athletes were asked to sign an informed consent form (ICF). Only after signing the ICF were the athletes given access to the research questionnaires. The ethical principles of non-disclosure of study participants were respected during data collection, thus ensuring the confidentiality of the information.

2.5 Statistical analysis

Data analysis was conducted using SPSS version 29.0 software using descriptive and inferential statistics. Data normality was verified using the *Kolmogorov-Smirnov test*. *Bootstrapping procedures* (1000 re-samplings; 95% CI BCa) were performed to obtain greater reliability of the results, to correct deviations from normality of the sample distribution and differences between group sizes, and also to present a 95% confidence interval for the differences between means (Haukos; Lewis, 2005). The mean and standard deviation were used as measures of central tendency and dispersion. *Pearson's* correlation was used to assess the bivariate association between the dimensions of sports experiences and the semester CRE of university athletes.

3 RESULTS

All athletes from the sports teams selected for the Pernambuco University Games of a Higher Education Institution (HEI) were recruited for the research, totaling 53 individuals. However, 19 athletes were excluded from the research for not having made the CRE available at the end of the first semester of 2024. Therefore, 34 athletes (18 men and 16 women) from the futsal ($n = 13$), handball ($n = 6$), volleyball ($n = 11$) and basketball ($n = 4$) teams participated in the research. The athletes had a mean age of 23.26 ($SD = 3.55$) years, a mean practice time of 83.00 ($SD = 63.42$) months and a mean of 2.62 ($SD = 0.70$) training sessions per week.

Table 1 presents the means, standard deviations, and correlations for the dimensions of sport experiences and for the CRE of college athletes. The mean scores on the 1 to 7 response scale of the USES-BR R were as follows from highest to lowest: social skills ($M = 5.80$; $SD = 0.75$), initiative ($M = 5.69$; $SD = 0.73$), interpersonal relationships ($M = 5.55$; $SD = 0.92$), adult network ($M = 4.72$; $SD = 1.35$), basic skills ($M = 4.40$; $SD = 1.51$), stress ($M = 3.71$; $SD = 1.16$), social exclusion ($M = 2.84$; $SD = 1.19$), and inappropriate behavior ($M = 2.24$; $SD = 1.13$). Finally, the average CRE in the first academic semester of 2024 for athletes was 8.13 ($SD = 1.23$).

Table 1 – Descriptive statistics of the dimensions of sporting experiences and the academic performance coefficient (CRE) of university athletes

Variables	Average	Standard deviation
HV Domains		
Initiative	5.69	0.73
Skills basic	4.40	1.51
Relations interpersonal	5.55	0.92
Skills social	5.80	0.75
Adult network	4.72	1.35
Stress	3.71	1.16
Social exclusion	2.84	1.19
Behavior inappropriate	2.24	1.13
CRE	8.13	1.23

Source: Prepared by the authors, 2025

In the correlation analysis (Table 2), it is highlighted that significant ($p < 0.05$), positive and weak ($r < 0.40$) correlations were found between the sports experiences of basic skills and interpersonal relationships with the semiannual CRE ($r = 0.32$ and $r = 0.27$, respectively).

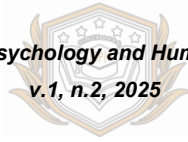
It is also noted that the dimensions of positive sports experiences presented positive correlations with each other (r between 0.28 and 0.51), while negative experiences also presented positive correlations with each other (r between 0.21 and 0.39). Finally, it was observed that the dimensions of positive sports experiences presented negative correlations with the dimensions of negative experiences (r between -0.32 and -0.52).

Table 2 - Correlations between the dimensions of sporting experiences and the academic performance coefficient (CRE) of university athletes

Variables	1	2	3	4	5	6	7	8	9
1. Initiative	-	0.28*	0.44**	0.51**	0.39**	-0.14	-0.42**	-0.52**	-0.17
2. Basic skills		-	0.50**	0.38**	0.35**	0.19	-0.21	0.04	0.32*
3. Interpersonal Relations			-	0.60**	0.30*	-0.04	-0.22	-0.33*	0.27*
4. Social skills				-	0.09	0.08	-0.14	-0.18	0.07
5. Adult network					-	-0.04	-0.32*	-0.35*	0.24
6. Stress						-	0.41*	0.21	0.12
7. Social exclusion							-	0.39*	0.05
8. Inappropriate comp.								-	0.20
9.CRE									-

Legend: *Pearson* Correlation. ** $p < 0.01$. * $p < 0.05$

Source: Prepared by the authors, 2025



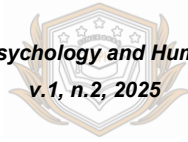
4 DISCUSSION

The results of this study reveal important insights into the relationship between university sports experiences and the academic performance of participating athletes. The sample, composed of 34 athletes from different sports at the Pernambuco University Games, demonstrated an average Academic Performance Coefficient (SPC) of 8.13, considered an indicator of good academic performance and consistent with the standards of excellence expected in Brazilian higher education. This finding suggests that, despite the demands associated with competitive sports, student athletes are able to maintain satisfactory academic performance.

The dimensions of sports experiences were assessed using the USES-BR Questionnaire, showing that, on average, athletes perceive high social skills, initiative, and quality of interpersonal relationships provided by sports. These results point to the potential of the sports environment as a space for socioemotional development, which is in line with previous studies that highlight college sports as a favorable context for the cultivation of psychosocial skills (Gould; Carson, 2008; Camiré *et al.*, 2012; Moreland; Coxé; Yang, 2018).

It is also worth highlighting experiences considered "negative," such as stress, social exclusion, and inappropriate behavior, which presented lower averages, indicating that, in general, athletes experience more positive than negative aspects in the university sports context. This predominance of positive experiences may be related to factors such as adequate mediation by coaches, institutional support offered by universities, and the motivation of athletes themselves, who often participate in sports by autonomous choice, according to Davis and Jowett (2014).

Correlation analysis revealed positive associations between the variables "basic skills" and "interpersonal relationships" and the semester CRE. This suggests that the perception of improvement in sports skills and the quality of interpersonal relationships built in the sports environment may be positively related to better academic performance. Basic skills, which encompass aspects such as organization, communication, and strategic thinking, are transferable to the academic context and can facilitate the completion of school tasks more effectively (Bean; Eaton, 2000; Laureys *et al.*, 2023). Improving basic skills can lead to increased self-confidence and discipline, qualities that are highly important for academics (Jesus Ferreira, 2024). Similarly, good interpersonal relationships can provide greater social and emotional



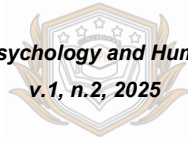
support, factors that contribute to well-being and, indirectly, to academic success (Fredricks *et al.*, 2004). These findings corroborate theories such as Self-Determination (Ryan; Deci, 2017), which emphasize the importance of social integration and perceived competence as facilitators of engagement and performance in different domains of life.

Interestingly, the positive dimensions of sports experiences correlated positively with each other, indicating that athletes who report greater initiative also tend to perceive better social skills and interpersonal relationships. Similarly, the negative dimensions also correlated positively, suggesting that athletes who experience less stress are less prone to social exclusion and inappropriate behavior. This pattern of correlations suggests that sports experiences function in an integrated manner, such that strengthening positive aspects can mitigate or prevent the emergence of negative experiences, fostering a healthier and more formative sports environment (Teuber *et al.*, 2024).

Furthermore, the negative correlation observed between the positive and negative dimensions of sporting experiences reinforces the idea that a healthy and positive sporting environment tends to minimize negative experiences, corroborating the literature that highlights the importance of institutional support and a positive climate for athlete well-being (Zhou, 2024). These results also align with the literature on motivational climate (Ames, 1992), suggesting that mastery-oriented contexts - in which individual progress is valued - are associated with lower rates of stress, exclusion, and dysfunctional behaviors among athletes (Duda; Appleton, 2016).

The significant correlations between other dimensions of sports experiences and RSC can be explained by the complexity of the relationship between sports practice and academic performance. Factors such as time management, individual study strategies, family and institutional support, as well as the intensity and specific demands of each sport, can modulate this relationship in different ways (Corrêa, 2019).

Furthermore, it is possible that the predominant type of motivation (intrinsic or extrinsic), engagement with academic activities and the perception of compatibility between sporting and educational demands play mediating or moderating roles in this association, as indicated by recent research in the field of sport and educational psychology (Kegelaers *et al.*, 2024).



The study clearly demonstrates the positive impact of sports activities, particularly team sports, on improving the academic performance of university students. This influence can be explained by several mechanisms. First, team sports indirectly improve students' academic performance by promoting teamwork and social skills (Bruner *et al.*, 2022). In team sports, students learn to communicate effectively and collaborate in problem-solving, skills that are equally important in the academic environment. Furthermore, such sports encourage co-responsibility, active listening, and empathy, fundamental characteristics for building a collaborative learning environment (Jesus Ferreira, 2024).

Furthermore, sports activities, especially team sports, can improve students' physical health and mental well-being, which directly contributes to better academic performance. Students who regularly participate in sports often have higher energy levels and better emotional management skills, which helps them maintain higher levels of focus and efficiency in their studies (Oja. *et al.*, 2015). Regular sports practice can also act as a protective factor against symptoms of anxiety and depression, conditions that negatively affect the ability to concentrate and school performance (Biddle *et al.*, 2019).

Finally, participating in sports also helps students better manage time and stress. Such activities act as an effective stress-relief mechanism, helping students cope with academic challenges, while good time management skills are crucial for academic success. These benefits are even more evident in university environments that value the balance between sports and study, with institutional policies that recognize and support the dual role of the student-athlete (Teuber *et al.*, 2024). Despite the promising findings, this study has some limitations that should be considered. The main one concerns the small sample size ($n = 34$), which may limit the generalizability of the results to other contexts and populations. Furthermore, the use of a cross-sectional design prevents the inference of causality between the variables analyzed.

Another limitation is the predominance of team sports in the sample, which may influence the perception of sports experiences and their effects on academic performance. Future studies could expand the sample, include participants from different regions, and consider longitudinal designs, in addition to considering mediating and moderating variables in the relationship between sports experience and academic performance.



5 CONCLUSION

This study expanded our understanding of sports experiences in the Brazilian university context by demonstrating that certain dimensions of these experiences - especially those related to the development of basic skills and the quality of interpersonal relationships - are positively associated with academic performance, as measured by the Academic Performance Coefficient (APC). These findings support the hypothesis that college sports, when conducted in psychosocially healthy environments, can foster not only athletic development but also transversal skills that positively impact the academic trajectory of student-athletes.

The strengthening of skills such as self-confidence, discipline, and interpersonal communication, promoted by sports, appears to contribute to a more adaptive behavioral repertoire in the face of academic demands. Furthermore, the negative correlation between the positive and negative dimensions of sports experiences reinforces the importance of fostering sports climates oriented toward support, inclusion, and well-being.

However, the variability of results indicates that the relationship between sports experience and academic performance is multifaceted and mediated by several other individual and contextual factors, such as personal study strategies, institutional support, the type and demands of the sport, and socioeconomic conditions. Therefore, it is recommended that higher education institutions invest in sports policies that integrate pedagogical, psychological, and social initiatives, aiming to maximize the benefits of sports for students' overall development.

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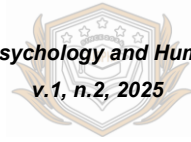
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