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Original article

Sports motivation, academic motivation and academic performance in high school students

Motivación deportiva, motivación académica y rendimiento académico en estudiantes de bachillerato

Motivação esportiva, motivação acadêmica e desempenho acadêmico em estudantes do ensino médio

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ABSTRACT

In the educational sense, sport is a playful and recreational activity to develop motor skills and abilities that contribute to strengthening mental, emotional, motivational and affective processes that can be reflected in a healthy life. The objective of this research was to analyze the relationship between sports motivation, academic motivation and academic performance, in addition to the association between both motivations in high school students. A quantitative methodology of descriptive correlational design and cross-sectional scope was used. A total of 123 high school students enrolled in public and private educational institutions in the state of Tlaxcala participated. An instrument consisting of the Sports Motivation Scale and the Academic Motivation Scale was applied. The results showed that, in sports motivation, the highest values are associated with intrinsic

motivation, while in academic motivation they are associated with extrinsic motivation; In addition, they showed a significant correlation in the subscales of academic motivation with academic performance, but not with the scale of sports motivation. This research provides relevant information on how educational sport could be a mediator to promote academic motivation and, as a result, academic performance.

Keywords: self-determination; sport; motivation; academic performance.

RESUMEN

En el sentido educativo, el deporte es una acción lúdica y recreativa para desarrollar habilidades y destrezas motoras que contribuyen al fortalecimiento de los procesos mentales, emocionales, motivacionales y afectivos que pueden reflejarse en una vida saludable. El objetivo de esta investigación fue analizar la relación entre la motivación deportiva, la motivación académica y el rendimiento académico, además de la asociación entre ambas motivaciones en estudiantes del nivel bachillerato. Se empleó una metodología cuantitativa de diseño correlacional descriptivo y alcance transversal. Participaron 123 estudiantes de bachillerato, matriculados en instituciones educativas públicas y privadas del estado de Tlaxcala. Se aplicó un instrumento integrado por la Escala de Motivación Deportiva y la Escala de Motivación Académica. Los resultados mostraron que, en la motivación deportiva, los valores más altos se asocian con la motivación intrínseca, mientras que en la académica lo hacen con la motivación extrínseca; además, evidenciaron una correlación significativa en las subescalas de la motivación académica con el rendimiento académico, pero no así con la escala de motivación deportiva. Esta investigación aporta información relevante de cómo el deporte educativo podría ser un mediador para favorecer la motivación académica y, como consecuencia, el rendimiento académico.

Palabras clave: autodeterminación; deporte; motivación; rendimiento académico.

RESUMO

No sentido educacional, o esporte é uma ação lúdica e recreativa para desenvolver habilidades e capacidades motoras que contribuem para o fortalecimento de processos mentais, emocionais, motivacionais e afetivos que podem se refletir em uma vida saudável. O objetivo desta pesquisa foi

analisar a relação entre a motivação esportiva, a motivação acadêmica e o desempenho acadêmico, bem como a associação entre ambas as motivações em alunos do ensino médio. Foi utilizada uma metodologia quantitativa de projeto descritivo correlacional e escopo transversal. Participaram 123 alunos do ensino médio matriculados em instituições educacionais públicas e privadas no estado de Tlaxcala. Foi aplicado um instrumento composto pela Escala de Motivação Esportiva e pela Escala de Motivação Acadêmica. Os resultados mostraram que, na motivação esportiva, os valores mais altos estão associados à motivação intrínseca, enquanto na motivação acadêmica estão associados à motivação extrínseca; além disso, houve uma correlação significativa nas subescalas da motivação acadêmica com o desempenho acadêmico, mas não com a escala de motivação esportiva. Esta pesquisa fornece informações relevantes sobre como o esporte educacional pode ser um mediador para favorecer a motivação acadêmica e, consequentemente, o desempenho acadêmico.

Palavras-chave: autodeterminação; esporte; motivação; desempenho acadêmico.

INTRODUCTION

Sport is classified as a physical activity that is present in different social contexts; according to Antón (2011) it is a selective and exclusive practice. However, if it is used from an educational point of view, it can provide people with an increase in their physical, social and cognitive abilities because, from this perspective, educational sport, instead of its specialization in a technical nature, seeks to be open, flexible and inclusive and promotes the integral development of the person from the social, academic and attitudinal point of view. In addition to this, when sport is guided under the line of health care, it can contribute to aspects such as well-being, reflection, formation in values and the natural sense of personal improvement.

The practice of sport can have different natures (Figure 1); namely, there is sport practiced to obtain rewards such as money or recognition from the public, to overcome individual records or those of other colleagues that were set through the improvement of technique, with the risk of causing injuries due to the level of demand required to achieve results. On the other hand, there is sport that is practiced as a habit for health care (Blázquez Sánchez, 1999). Between the two practices mentioned is educational sport, whose objective is to promote the integral and harmonious training of people.

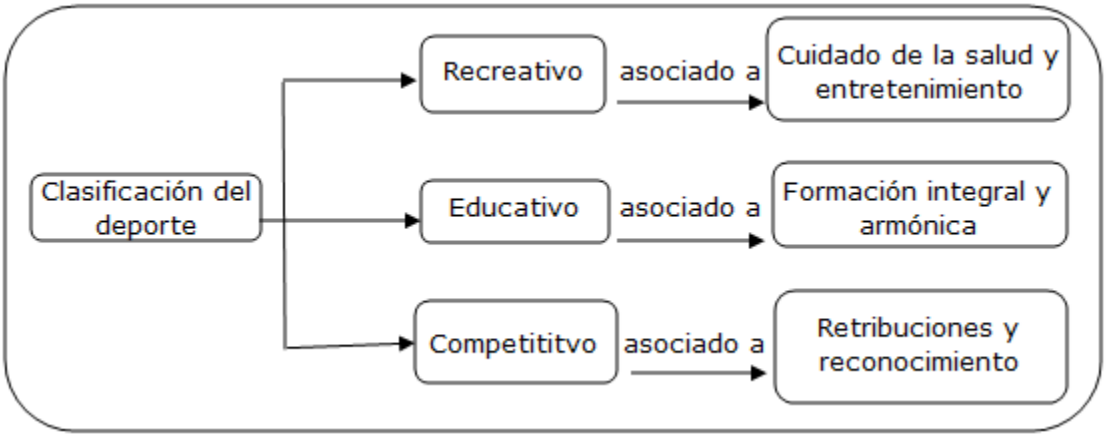

Figure 1. Sport classification
Source: Own elaboration based on Blázquez Sánchez (1999)

According to Restrepo-Segura *et al.* (2020), the epistemological origin of the word sport comes from the term "deport", which means to expel or exploit. In the educational field, it refers to the playful and recreational aspect; that is, to a practice that integrates fun, the development of capacities and talents of those who commit to doing it. Blázquez Sánchez (1999) points out that educational sport is a discipline responsible for providing motor skills and abilities to students, contributing with meaningful experiences that promote their mental processes and generate confidence and security, which can be reflected in other aspects of their lives.

Educational sport is not limited to the school context, but also encompasses the extracurricular environment, where it plays an important role in building healthy social relationships. In addition, it acts as a channel for emotional and affective impulses, facilitating the development of different tasks of daily life with harmony and skill. Therefore, its practice must be didactically oriented and adjusted so that the student understands the essence of the activity (Berriolo Balay, 2020).

The research carried out by Restrepo-Segura *et al.* (2020) provides evidence of a close relationship between the practice of sports to enhance, from different areas, the comprehensive development of students in the personal and social spheres, since it gives the possibility of improving physical development and contributing to the acquisition of healthy lifestyle habits, responsibility, commitment and an increase in satisfactory school results. Likewise, through the practice of educational sports, students can find new alternatives to achieve their goals and objectives, that is, motivate themselves for their personal achievements. The practice of sports could help regulate their

emotions and face situations that demand greater stability, thus overcoming challenges that could cause frustration and insecurity.

In addition, it has been shown that a person who practices sports reduces risky behaviors and, also, it generates greater motivation to take care of their health through their practice.

In order to achieve an authentic practice of educational sport, it is necessary to create learning environments that are ideal for the needs of each student. In the words of Pereyra (2020), a figure of great importance in creating them is the subject teacher or sports coach. In the study he carried out, in which 1,050 Mexican adolescents participated, it was observed that the levels of motivation for the practice came from athletes with whom their coaches were involved, to a greater extent, without intervening in the freedom of practice and decision-making. In contrast, the young participants did not find the same levels of motivation when they detected an environment of ego from the coach or when the coach himself wanted to gain greater relevance in the competition. Pereyra (2020) also mentions that the figure of the coach creates a link with the athlete if he shares his experience and, in this way, helps him shape a practice that will help him reach his goals.

In order to create favorable learning and motivation environments for students, both in sports and academic environments, Moreno-Murcia *et al.* (2007) highlight the importance of providing regular feedback on tasks. In this way, an environment focused on personal attention is fostered, which can generate greater motivation and favor meaningful learning. It is important to note that, in terms of motivation, both in sports and in the school environment, students do not always feel an intrinsic interest in participating. For this reason, it is important to note that the teacher is the key to transmitting the importance of the activities, seeking that the student finds long-term benefits and develops a genuine pleasure for the task.

Through the time, various theories have attempted to explain what drives motivation in a person. In this sense, Self-Determination Theory (TAD in Spanish), proposed by Deci and Ryan (2000), argues that motivation is divided into three levels, depending on the degree of self-determination: intrinsic motivation, extrinsic motivation and amotivation. The authors describe intrinsic motivation as what a person wants to do, with a sense of uncontrolled freedom, resulting from the person's autonomous regulation or from both external and internal pressures. In addition, they emphasize that in motivation the processes are more closely linked to the "self" than to the cognitive.

The TAD also highlights three fundamental psychological needs: competence, autonomy, and relationships with others. In this sense, Salazar-Ayala and Gastélum-Cuadras (2020) mention that self-determination is related to the ability to express preferences and have autonomy to make decisions, which can be influenced by the context, such as: family, school, friends, and various activities that can be controlled.

Moreno-Murcia *et al.* (2007) highlight that a climate that favors autonomy, in a lesser degree, extent sports specialization positively influences the development of self-determined motivation. In a study carried out by the same authors, a strong and significant correlation was found between task orientation and intrinsic motivation, while ego orientation was associated with extrinsic motivation. Furthermore, in a systematic review, Salazar-Ayala and Gastélum-Cuadras (2020) found that students experienced feelings of appreciation when developing skills with the intervention of teachers in the subject of Physical Education, which reflected a greater perception of appreciation in the participants.

Based on the TAD, the study carried out by Balaguer *et al.* (2007) on young Spanish people who practiced some sport, gave evidence of a higher level of Intrinsic Motivation (IM) in women, mainly oriented towards knowledge, while men presented an orientation towards Extrinsic Motivation (EM), oriented to a greater extent towards strengthening the ego, specifically in the external regulation dimension. The same study indicates that there is a significant difference between men and women in the IM subscales, but it also makes clear that men have a less self-determined profile than women. The researchers explain that the differences between the motivation of men and women can be determined by different factors, the main one being cultural. In the conclusions, the researchers mention that all the motivation subscales are positively related, showing the character of a continuum, as indicated by the TAD.

Ramírez *et al.* (2004) recognize the practice of physical activity as a valuable tool to improve academic performance. After analyzing various studies in Argentina, Japan and in some universities in the United States, the authors maintain that performing at least 30 minutes of daily exercise, preferably aerobic, contributes to improving cognitive functions, concentration levels, physical changes that increase self-esteem and performance in learning processes.

Tomás and Gutiérrez (2019) analyzed the support for autonomy by teachers regarding the academic satisfaction of university students and exposed the usefulness of TDA to explain motivation in relation

to sport and physical activity; however, the authors also emphasize the relevance that the theory has taken in academic contexts, emphasizing the importance of the satisfaction of primary psychological needs in different subjects, which have appeared as mediators of learning. In this sense, motivation in young people comes from the strategies used to achieve a desired result and meet an established goal. These strategies must be aligned with the requested tasks and be consistent with the skills of those who will execute them. In addition, Botella and Ramos (2019) point out that TAD has been the key to understanding the factors that influence academic motivation. Therefore, they argue that the development of active methodologies in the classroom, such as problem-based learning, can strengthen relationships between peers, as well as the skills and autonomy of students in school environments. In this sense, fostering a more autonomous extrinsic motivation through internalization can bring students closer to an interest in learning and, consequently, improve their academic performance.

Tacilla *et al.* (2019) defines academic performance as the result of the didactic and pedagogical interaction between the student and the teacher in a certain period of time and that is measurable qualitatively and quantitatively. In addition, academic performance is considered to be an estimated measure, it is the scope of knowledge and the quality of information that the student has after a period of instruction, reflected in a scale of expected learning and is evidenced through their class grades or grades.

Although there are several studies that positively relate academic motivation with academic performance, this is not the case with sports motivation and between both motivations. Therefore, in this research the questions were raised: What is the relationship between sports motivation, academic motivation and academic performance? Is there any association between sports motivation and academic motivation? To answer the questions, the general objective was to analyze the relationship between sports motivation, academic motivation and academic performance, as well as the association between both motivations in high school students.

MATERIALS AND METHODS

In the research, a quantitative method was used, with a descriptive correlational design and a cross-sectional scope. The sample was by convenience and students who were enrolled in high school and taking the subject Physical Education was invited to participate. To meet the objective of the research, to analyze the relationship between sports motivation, academic motivation and academic

performance, as well as the association between both motivations in high school students, four specific objectives were proposed:

1. Identify the level of sports motivation in high school students.
2. Identify the level of academic motivation in high school students.
3. Describe the association between sports motivation, academic motivation and academic performance.
4. Identify the association between sports motivation and academic motivation.

The hypotheses to be tested were:

1. There is a significant relationship between motivation, both academic and athletic, and academic performance in high school students.
2. There is a significant association between sports motivation and academic motivation.

Participants

For this research, 123 high school students enrolled in public (n=34) and private (n=89) educational institutions where educational sports are practiced participated. Of these, 53.7% (n=66) were women and 46.3% (n=57) men, with an average age of 16.7 years (SD=1.41). Of these students, 87 participants showed a high average (8.5-10); 28 a medium average (7.5-8.4) and only eight participants reported a low average (6.5 to 7.4). Most of the participants responded that they play volleyball (n=76), followed by weightlifting (n=20), soccer (n=15), swimming (n=7) and basketball (n=5).

Variables

Sports motivation is an independent variable and is defined as the student's desire to engage in physical activities that require the responsible implementation of their physical, cognitive and attitudinal abilities.

Academic motivation is an independent variable; it is considered as a person's desire to see a task completed, finding feelings, ideas, desires and satisfaction in the process.

The dependent variable is academic performance; it refers to the grades obtained (qualifications). In this study, the cumulative academic average up to the end of the fourth semester was considered

for the purposes of analysis and four scales were established: high average (108.5), medium (8.47.5), low (7.46.5) and very low (6.45.5).

Instruments

To collect the information, an instrument consisting of three sections was used. The first one was to investigate sociodemographic aspects (gender, age, average, sport practiced). The second corresponded to Pelletier's Sports Motivation Scale (EMD). In this research, the Spanish translation made by Balaguer was used, who validated this scale in Spanish athletes, demonstrating its reliability. And the third corresponded to the Academic Motivation Scale (EMA), designed and validated by Vallerand and translated into Spanish by four bilingual experts.

Both the EMD and the EMA are measured with a seven-point Likert scale (1 = has nothing to do with me, 7 = fits me completely) and consist of 28 items divided into three dimensions: intrinsic motivation, which in turn is made up of three subscales (Intrinsic Motivation for Execution, Intrinsic Motivation for Knowledge, Intrinsic Motivation for Stimulation); extrinsic motivation, also made up of three subscales (Extrinsic Motivation for Identification, Extrinsic Motivation for External Regulation, Extrinsic Motivation for Introjection) and a subscale for amotivation .

Intrinsic Execution Motivation (IEM) occurs when an activity is performed for pleasure and the satisfaction of experiencing the achievement of a proposed goal. Intrinsic Knowledge Motivation (IKM) is experienced when having curiosity or a desire to learn about a certain topic. Intrinsic Stimulation Motivation (ISM) occurs when a person engages in activities to have fun or experience positive feelings.

Regarding the extrinsic motivation dimension, the Extrinsic Identification Motivation (EIM) subscale refers to when a person sees themselves linked to an activity without choice; however, they recognize that it is necessary for their personal growth and they assume it as their own choice. The Extrinsic Motivation of External Regulation (ERM) is linked to obtaining rewards and/or avoiding punishment. As for the Extrinsic Introjection Motivation (INM), it appears when an external objective is internalized as important. Amotivation (AMOT) occurs when people do not feel motivated to perform a task.

Procedure

Permission was requested from educational institutions and consent was obtained from all students whose participation was voluntary. At the beginning of the test, they were informed that the information provided would be anonymous and for exclusively academic purposes. The confidentiality of the data of all participants was respected. The form was subsequently shared via email; it remained open for a period of 15 days.

Once the information provided by the participants was obtained, the statistical analysis was carried out, first descriptive (frequencies, arithmetic mean, standard deviation) and then inferential (normality test, correlations); for this purpose the statistical software SPSS v.27 was used.

RESULTS

The instrument showed a reliability index with a Cronbach's Alpha value of .897 for the EMD and a Cronbach's Alpha of .822 for the EMA. Tables 1 and 2 show the indices for each of the subscales.

Table 1. EMD dimensions and reliability index

Dimensions	Number of items	Cronbach's alpha
Intrinsic Motivation of Stimulation	4	.770
Intrinsic Knowledge Motivation	4	.855
Intrinsic Motivation for Performance	4	.868
Extrinsic Motivation of External Regulation	4	.787
Extrinsic Motivation of Introjected Regulation	4	.758
Extrinsic Identification Motivation	4	.794
Amotivation	4	.519

Table 2. EMA dimensions and reliability index

Dimensions	Number of items	Cronbach's alpha
Intrinsic Motivation of Stimulation	4	.792
Intrinsic Knowledge Motivation	4	.834
Intrinsic Motivation for Performance	4	.897
Extrinsic Motivation of External Regulation	4	.812
Extrinsic Motivation of Introjected Regulation	4	.839
Extrinsic Identification Motivation	4	.870
Amotivation	4	.915

In accordance with the specific objectives proposed, the students' level of sporting motivation and academic motivation were first identified through descriptive statistics. Thus, when performing a frequency analysis of each of the scales, it was observed that in the EMD (Figure 2), the lowest mean value was shown by the sporting AMOT (M=10.17) and the highest mean value was shown by the sporting MIES (M=16.70), followed by the sporting MIEJ (M=16.66).

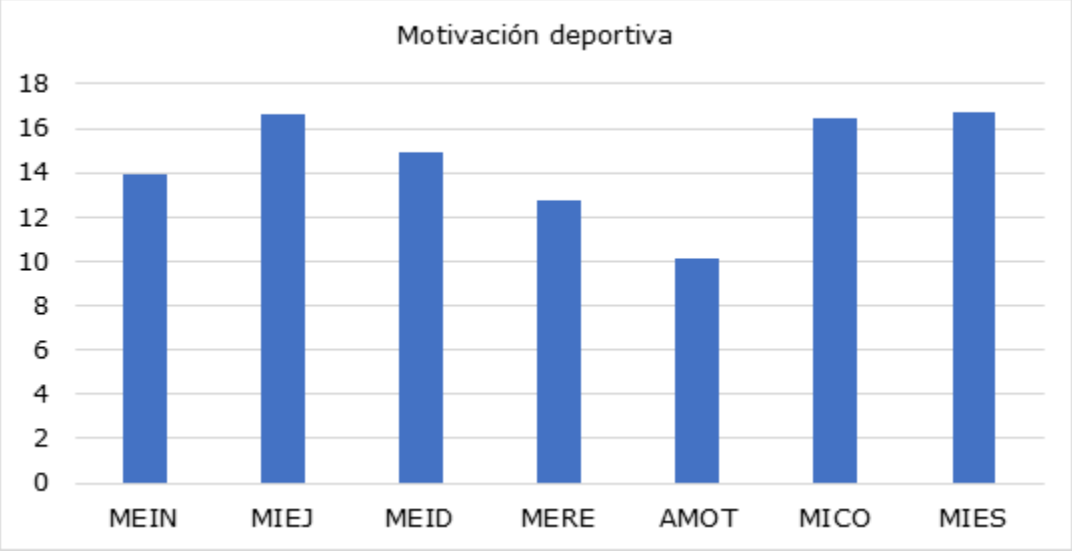

Figure 2. Arithmetic mean in the dimensions of sports motivation

Note: MEIN=Extrinsic Introjection Motivation; MIEJ=Intrinsic Execution Motivation; MEID=Extrinsic Identification Motivation; MERE=Extrinsic External Regulation Motivation; AMOT= Amotivation; MIES=Intrinsic Stimulation Motivation

For the EMA (Figure 3), the lowest value was that of academic AMOT (M=8.56) and the highest value was reported by the academic MEID (M=16.52), followed by academic MERE (M=15.90)

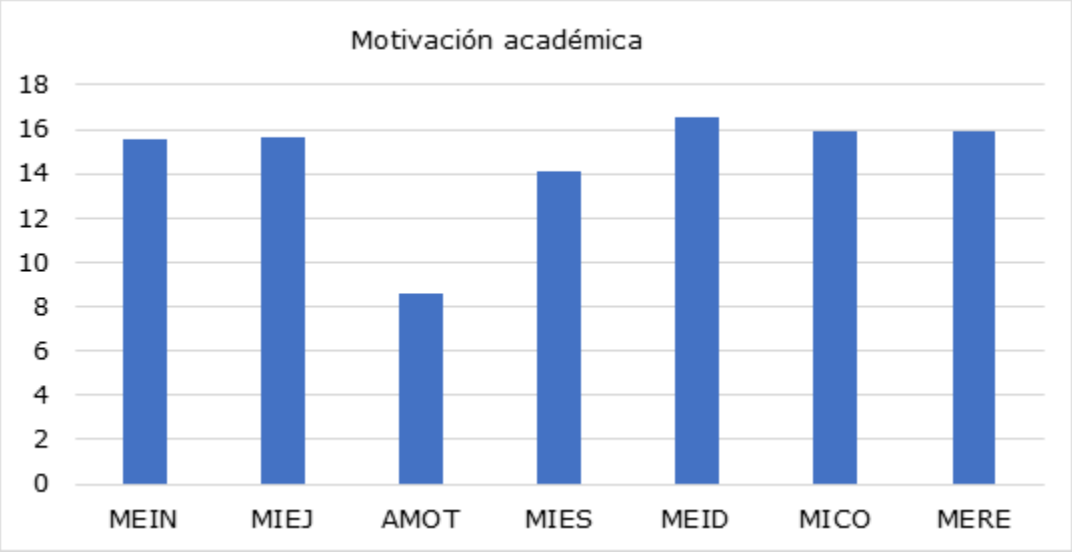

Figure 3. Arithmetic mean in the dimensions of academic motivation
Note: MEIN=Extrinsic Introjection Motivation; MIEJ=Intrinsic Execution Motivation; AMOTA= Amotivation; MIES=Intrinsic Stimulation Motivation; MEID=Extrinsic Identification Motivation; MICO=Intrinsic Knowledge Motivation; MERE=Extrinsic External Regulation Motivation

In order to meet the third specific objective, to describe the relationship between sports motivation, academic motivation and academic performance, a Spearman correlation was carried out after the normality analysis of the data ($p < .05$), where it was observed that academic performance correlated positively with Extrinsic Motivation for Sports Introjection (MEIND), Extrinsic Motivation for Academic External Regulation (MEREA), Extrinsic Motivation for Academic Identification (MEIDA), Academic Amotivation (AMOTA), Intrinsic Motivation for Academic Stimulation (MIESA), Intrinsic Motivation for Academic Execution (MIEJA) and Extrinsic Motivation for Academic Introjection (MEINA) (Table 3).

Table 3. Correlation between EMD and EMA and academic performance (n=123)

Subscales	r	p
MIESD	0.082	0.366
MICOD	0.059	0.520
AMOTD	0.008	0.929
MERED	-0.071	0.435
MEIDD	0.009	0.922
MIEJD	0.165	0.068
MEIND	.178 *	0.049
MEREA	.327 **	0.000
MICOA	0.16	0.076
MEIDA	.262 **	0.003
MIESA	.246 **	0.006
AMOTA	-.231 *	0.010
MIEJA	.281 **	0.002
MEINA	.243 **	0.007

Note: MIED=Intrinsic Motivation for Sports Stimulation. MICOD=Intrinsic Motivation for Sports Knowledge. MERED=Extrinsic Motivation for Sports External Regulation. MEIDD=Extrinsic Motivation for Sports Identification. MIEJD=Intrinsic Motivation for Sports Execution. MEIND=Extrinsic Motivation for Sports Introjection. AMOTD= Sports Amotivation. MIESA=Intrinsic Motivation for Academic Stimulation. MICOA=Intrinsic Motivation for Sports Knowledge. MEREA=Extrinsic Motivation for Academic External Regulation. MEIDA=Extrinsic Motivation for Academic Identification. MIEJA=Intrinsic Motivation for Academic Execution. MEINA=Academic Introjection Extrinsic Motivation. AMOTA= Academic Amotivation

To meet the fourth specific objective, to identify the association between sport motivation and academic motivation, the correlation between all the EMD and EMA subscales was carried out. Table 4 shows the results obtained.

Table 4. EMD and EMA correlation (n=123)

		MIESD	MICOD	AMOTD	MERED	MEIDD	MIEJD	MEIND	MEREA	MICOA	MEIDA	MIESA	AMOTAA	MIEJA	MEINA
MIESD	r	1													
	p	0.000													
MICOD	r	.733 **	1												
	p	0.000	.												
AMOTD	r	-.300 **	-.268 **	1											
	p	0.001	0.003	.											
MERED	r	.399 **	.435 **	.193 *	1										
	p	0.000	0.000	0.033	.										
MEIDD	r	.699 **	.677 **	-0.058	.547 **	1									
	p	0.000	0.0000	0.528	0.000	.									
MIEJD	r	.771 **	.805 **	-.353 **	.335 **	.702 **	1								
	p	0.000	0.000	0.000	0.000	0.000	.								
MEIND	r	.540 **	.477 **	0.082	.561 **	.506 **	.490 **	1							
	p	0.000	0.000	0.369	0.000	0.000	0.000	.							
MEREA	r	.189 *	.213 *	-0.062	.199 *	.189 *	0.176	.237 **	1						
	p	0.037	0.018	0.496	0.028	0.036	0.051	0.008	.						
MICOA	r	.291 **	.485 **	-0.103	.192 *	.442 **	.406 **	.178 *	.434 **	1					
	p	0.001	0.000	0.259	0.034	0.0000	0.000	0.049	0.000	.					
MEIDA	r	.278 **	.347 **	-0.052	.188 *	.291 **	.323 **	.243 **	.584 **	.681 **	1				
	p	0.002	0.000	0.568	0.037	0.001	0.000	0.007	0.000	0.000	.				
MIESA	r	.236 **	.371 **	0.068	.251 **	.376 **	.284 **	.284 **	.396 **	.704 **	.615 **	1			
	p	0.008	0.000	0.452	0.005	0.0000	0.001	0.001	0.000	0.000	0.000	.			

AMOTA	r	-0.062	-0.071	.346 **	.306 **	0.051	-0.155	0.121	-.238 **	-.416 **	-.376 **	-.184 *	1		
	p	0.493	0.437	0.000	0.001	0.574	0.087	0.182	0.008	0.000	0.000	0.041	.		
MIEJA	r	.247 **	.425 **	-0.051	0.138	.348 **	.393 **	0.167	.395 **	.773 **	.648 **	.722 **	-.368 **	1	
	p	0.006	0.000	0.579	0.128	0.000	0.000	0.066	0.000	0.000	0.000	0.000	0.000	.	
MEINA	r	.251 **	.338 **	0.082	.279 **	.281 **	.354 **	.221 *	.560 **	.588 **	.625 **	.602 **	-0.133	.719 **	1
	p	0.005	0.000	0.366	0.002	0.002	0.000	0.014	0.000	0.000	0.000	0.000	0.143	0.000	.

Note: MIED=Intrinsic Motivation for Sports Stimulation. MICOD=Intrinsic Motivation for Sports Knowledge. MERED=Extrinsic Motivation for Sports External Regulation. MEIDD=Extrinsic Motivation for Sports Identification. MIEJD=Intrinsic Motivation for Sports Execution. MEIND=Extrinsic Motivation for Sports Introjection. AMOTD= Sports Amotivation. MIESA=Intrinsic Motivation for Academic Stimulation. MICOA=Intrinsic Motivation for Sports Knowledge. MEREA=Extrinsic Motivation for Academic External Regulation. MEIDA=Extrinsic Motivation for Academic Identification. MIEJA=Intrinsic Motivation for Academic Execution. MEINA=Academic Introjection Extrinsic Motivation. AMOTA= Academic Amotivation

DISCUSSION

Regarding the results obtained from the application of the EMD and EMA in 123 students enrolled in high school, with respect to the first specific objective which was to identify the level of sports motivation in high school students, it was found that, in the EMD, the dimensions of the MIES and the MIEJ are the highest, which suggests that students participate in educational sport for pleasure and the desire to increase their knowledge in the physical activity that is attractive to them.

In this regard, Moreno-Murcia *et al.* (2007) point out that, during a sports task, students can generate a favorable environment for the development of physical games and practices ideal for the acquisition of skills that promote feelings of satisfaction and well-being.

In addition, Pereyra (2020) indicates that those who play an important role in the generation of such environments are teachers or coaches, who through active strategies and methodologies create links in which there is commitment to achievement, which is perceived by students as an agent of satisfaction and security. These aspects can also be transferred to the academic field.

When determining the level of academic motivation with the EMA in high school students, as established by the second specific objective, it was observed that the MEID showed a higher frequency in the students' response, followed by the MERE, which shows that young people consider school activity as something important and relevant in achieving their personal goals, but it is not out of self-interest; they also require a reward or try to avoid punishment.

Although extrinsic motivation is not linked to autonomy, in the first case there is acceptance by the student, while in the second it is more related to obedience. In this sense, Botella and Ramos (2019) suggest developing a more autonomous extrinsic motivation through internalization to bring interest in learning closer and, consequently, improve academic performance.

The results showed that, in sports motivation, the highest values are associated with intrinsic motivation, while in academic motivation with extrinsic motivation. It is notable that in neither of the two scales the results showed high values in intrinsic motivation for knowledge, which may indicate a warning to establish actions that motivate students to get closer to the pleasure of knowing and learning new things. Therefore, it is important to consider the figure of the teacher as an agent to look for alternatives that allow the student to find benefits in the tasks and satisfaction in carrying them out.

Regarding the third specific objective, to describe the relationship between sports motivation, academic motivation and academic performance, it was observed that academic performance correlated strongly and significantly with the intrinsic and extrinsic motivations of the EMA. However, there was no correlation with the MICO. This indicates an alert for teachers, because students do not seem to show interest or curiosity about learning; therefore, there is the possibility of promoting strategies and methodologies in the classroom that encourages active participation to increase motivation in students (Botella and Ramos, 2019).

The EMD only had one subscale that correlated in a moderate positive way with academic performance. The MEIN sports refers to internalizing an external objective as important, which may mean that the sporting activity is carried out because it is believed to have a benefit for obtaining a favorable academic performance; thus, this activity is associated with awareness to achieve a future expectation. This result can be associated with the contributions of Ramírez *et al.* (2004), who recognize the practice of physical activity as a valuable tool for academic performance.

These results reject the first hypothesis: there is a significant relationship between motivation, both academic and sporting, and the academic performance of high school students. Although there is a correlation in the EMA, as has been found in different empirical studies, this does not happen with respect to the EMD.

When identifying the association between sports motivation and academic motivation, as established in the fourth specific objective, the subscales that make up the EMD presented strong significant correlations with most of the EMA subscales. Only the academic MERE presented moderate correlations with the sports motivation subscales and did not present significant results with the sports MIEJ. If it is taken into account that extrinsic motivation is related to a reward or avoiding a punishment and intrinsic motivation, related to sports performance, with carrying out an activity for pleasure, students are showing a liking for sports, in contrast to academic motivation, where they need an external incentive to get involved in their tasks. With the results presented, the second hypothesis is rejected: there is a significant association between sports motivation and academic motivation, since one of the sports MIEJ subscales had no association with the academic MERE subscale.

Reflecting on how coaching is carried out by a coach or teacher in educational sports, as well as analyzing the integration of a sports team, can provide strategies to be carried out in any subject and encourage students to create a commitment to collaborative work on academic tasks. Also, take into account that the methodologies implemented by the teacher in the classroom reinforce autonomy when the student is allowed to give an opinion, choose and participate; however, it is diminished when they are given homework without alternatives. Therefore, in educational practice, considering a context of constructive relationship between students and teachers will favor curiosity for learning and motivation.

The above leaves as a background, according to empirical studies, that educational sport acts as a very valuable means for students to form healthy lifestyle habits, improve study habits, improve the organization of their time, promote self-determination to achieve goals, improve the management of their social relationships to exchange academic and sports strategies, without leaving aside the fact of contributing to the elimination of habits of little rest that lead to anxiety, depression and consumption of substances harmful to the body, current problems in health systems.

This study is based on the desire to provide information that supports Physical Education teachers and teachers of different subjects to carry out work in front of a group with the intention of promoting comprehensive development, aimed at enhancing cognitive and physical health skills, in order to achieve better academic performance. This research provides relevant information on how educational sport, although not directly related to academic performance, could be a mediator to promote academic motivation and, consequently, academic performance.

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Conflict of interest

Authors declare no conflict of interests.

Authors' contribution

The authors participated in the design and writing of the article, in the search and analysis of the information contained in the consulted bibliography.