2024, Retos, 59, 602-607

Moderation of empathy in sport on athletes' education and performance: a systematic review

Moderación de la empatía en el deporte sobre la educación y el rendimiento de los deportistas: una revisión sistemática

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Abstract. This research aims to find out how empathy is moderated in sports. This research uses techniques that refer to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Data was collected using search engines through indexing bases, namely Scopus and Web of Science. Articles are selected based on the keywords"empathy AND sports" listed in the title, keywords, and abstract published in 2024 until 8 June. So we got 28 articles on Scopus and 25 articles on WoS. To anticipate duplication, Mendeley was used to prevent duplicate files, resulting in 48 articles. Inclusion and exclusion criteria were used to screen further, and 10 articles were obtained that met the criteria. Results confirm that empathy is a dynamic and complex process involving multiple temporal phases and neurophysiological responses, and can be enhanced through interactive media. In education, empathy can be enhanced through sensitive teaching, appropriate feedback, innovative programs such as "KorriCan," and quality services, all of which support social justice and a more humane learning environment. In sports, empathy improves athletes' mental toughness and performance, with higher levels of education also supporting the development of important social-emotional skills. The implication of these findings is that the development of empathy must be the main focus in education and achievement strategies for athletes to achieve optimal results and create an inclusive and supportive environment.
Keywords: empathy, attitudes, behavior, sports, physical education, achievement

Resumen. Esta investigación tiene como objetivo descubrir cómo se modera la empatía en el deporte. Esta investigación utiliza técnicas que se refieren a los Elementos de Reporte Preferidos para Revisiones Sistemáticas y Meta-Análisis (PRISMA). Los datos se recopilaron utilizando motores de búsqueda a través de bases de indexación, a saber, Scopus y Web of Science. Los artículos se seleccionan en función de las palabras clave "empatía Y deportes" listadas en el título, las palabras clave y el resumen publicados en 2024 hasta el 8 de julio. Así, obtuvimos 28 artículos en Scopus y 25 artículos en WoS. Para anticipar la duplicación, se utilizó Mendeley para prevenir archivos duplicados, resultando en 48 artículos. Se utilizaron criterios de inclusión y exclusión para una mayor selección, y se obtuvieron 10 artículos que cumplieron con los criterios. Los resultados confirman que la empatía es un proceso dinámico y complejo que involucra múltiples fases temporales y respuestas neurofisiológicas, y puede mejorarse a través de medios interactivos. En la educación, la empatía puede mejorarse a través de una enseñanza sensible, retroalimentación adecuada, programas innovadores como "KorriCan" y servicios de calidad, todo lo cual apoya la justicia social y un entorno de aprendizaje más humano. En los deportes, la empatía mejora la resistencia mental y el rendimiento de los atletas, con niveles más altos de educación que también apoyan el desarrollo de importantes habilidades socioemocionales. La implicación de estos hallazgos es que el desarrollo de la empatía debe ser el enfoque principal en las estrategias de educación y logro para que los atletas logren resultados óptimos y creen un entorno inclusivo y de apoyo.
Palabras clave: empatía, actitudes, comportamiento, deportes, educación física, logro

Fecha recepción: 08-07-24. Fecha de aceptación: 23-07-24
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Introduction

Empathy is the ability to understand and feel the feelings and experiences of others(Novianti & Romi, 2021). Empathy plays an important role in creating an inclusive, supportive, and motivating environment(Lapanda et al., 2022). In the context of humanism, emphasizing respect for human dignity in the context of education is important. Individuals with high levels of empathy often demonstrate good emotional regulation mechanisms, allowing them to provide immediate assistance to those in need(Lapanda et al., 2022). In the context of sports and physical education activities, empathy acts as an idealistic basis to encourage someone to create an environment where everyone has the same opportunity to develop and achieve their maximum potential without discrimination or unfair treatment(Kalkan, 2022).

When engaging empathy in sporting activities, coaches and teammates can be more sensitive to individual needs, feelings, and challenges. Having a coach's servant attitude can help create a team climate that supports personal growth, strengthens relationships between team members, and improves overall performance(Hu & Liden, 2011). In competitive sports, competition and the pressure to win often obscure the values of empathy and fairness(Kavussanu & Stanger, 2017). On the other hand, in a school physical education environment, there are varying levels of skills, interests, and fitness among students that can influence how empathy is applied and understood(Şinoforoğlu & Balçıkanlı, 2020). Thus, incorporating empathy in the context of sports and physical education activities is not only about improving physical performance but also strengthening human relationships and improving the psychological well-being of individuals(Martinez-Lorca et al., 2023). This creates an environment where everyone feels supported, valued, and able to grow both physically and emotionally(Lorca et al., 2023).

The position of empathy in moderating sports participants regarding the attitudes and behavior they

display needs to be observed. How empathy can be integrated into sports activities with the attitudes and behavior displayed during the physical activity process needs to be explored in the previous article. The implication of this research is to help policymakers design effective strategies to improve the experience and benefits of sports education for students, athletes, and sports participant communities in supporting the development of prosocial attitudes in society more broadly.

Methodology

Search Strategy

This research uses techniques that refer to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). A systematic search was carried out on the Web of Science and Scopus databases using subjects with certain themes, such as "empathy AND sports" using Boolean logic search ("AND" "OR"). Listed in the title, keywords, and abstract published in 2024 until 8 June. So we got 28 articles on Scopus and 25 articles on WoS. To anticipate duplication, Mendeley was used to prevent duplicate files, resulting in 48 articles. Inclusion and exclusion criteria were used to screen further, and 10 articles were obtained that met the criteria. The process of searching for and obtaining articles for review can be seen in Figure 1.

Inclusion and exclusion criteria

The following criteria must be met for a study to be included in the literature: (i) the study must be published in English and be quantitative or qualitative; (ii) must focus on athlete, student, or health-related sports participation; (iii) the institution must report research findings in the form of results or statistical analysis regarding relationships with related factors; and (iv) the study should examine participants' experiences of physical activity with an emphasis on engagement in physical activity. The study's measurement of physical activity as an independent variable and its publication in an abstract, commentary, or review met the exclusion criteria.

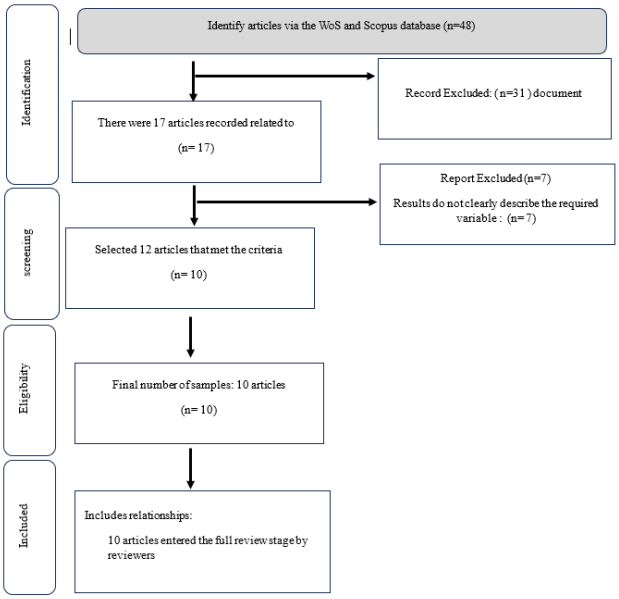

Figure 1. PRISMA flow diagram.(Page et al., 2021)

Quality of assessment

Author, the purpose of research, sample, age, research activities, period frequency, training program, and conclusion are the seven components that serve as criteria for assessing research quality.

Data extraction and processing

Descriptive analytical techniques, such as author and year of publication, research objectives, sample and age, research activities, period frequency, and research findings (especially variables related to physical activity and empathy), were used for data extraction. The procedure used is to use inclusion, exclusion, and quality assessment criteria determined by the reviewer, two reviewers independently check the entire text first. When there were differences of opinion, other authors were consulted, and consensus was reached regarding the results.

Results

Table 1.
Results from review articles

No	Author	Research objectives	Sample and Age	Activity	Frequency period	Training Program	Final Conclusion
1	Morales-Ocaña et al., 2024	This study aimed to investigate the training needs of professional football coaches working with people with intellectual disabilities.	13 coaches from 10 clubs with an average age of 23-53 years	This research focuses on adaptive football played.	Emphasizes the need for continuous training and professional development of trainers	Training program on effective communication, and group management.	The knowledge of communication and group management that coaches have can develop social-emotional potential such as empathy for people with disabilities
2	Gonzalez-Santamaria et al., 2024	This research focuses on the implementation of animal-assisted interventions in physical education.	Grade 4 students at the Junior High School stage are around 15-16 years old.	The type of physical activity in this program is Canicross.	16 sessions lasting 50-60 minutes, except the 90-minute teacher training session	The 'KorriCan' training programme	The "KorriCan" program is considered an innovative physical education initiative in promoting awareness as well as empathy through the integration of dogs in physical education sessions.

Table 1.
Results from review articles

No	Author	Research objectives	Sample and Age	Activity	Frequency period	Training Program	Final Conclusion
3	Shima & Suzuki, 2024	This research explores the influence of teacher feedback on changes in empathy among junior high school students during physical education classes in artistic gymnastics classes.	60 first-grade junior high school students in Japan aged 12–13 years.	The type of physical activity studied was artistic gymnastics classes, part of the standard curriculum in Japanese junior high schools.	Eight sessions, 2-3 times per week, 50 minutes duration during November to December 2022	The artistic gymnastics session	The results showed that positive group feedback decreased boys' cognitive empathy, while individual feedback increased girls' cognitive and affective empathy. Individual questions decreased girls' affective empathy.
4	de Flor et al., 2024	Social justice themes emerging from critical incidents identified by physical education researchers in Brazil.	first-year high school students in Brazil aged between 14 and 16 years.	Involves physical education with a focus on social justice issues, such as gender equality, homophobia, social inclusion, and empathy.	Conducted during various critical incidents identified throughout the school year.	Reflective and critical analysis of observed events, with a social justice-based critical education approach.	This research shows that sensitive listening and providing a warm welcome from teachers can increase empathy among students and help promote social justice in physical educational settings.
5	Troncoso et al., 2024	This research focuses on the temporal dynamics of sensorimotor and physiological responses and subjective experiences in harmony with the suffering of others, especially in the context of empathy.	35 adults aged between 21 and 47 years with an average age of 30.18 ± 6.62 years.	The physical activity carried out was watching videos about physical accidents in extreme sports and neutral videos while measuring postural, electrodermal, and heart rate responses.	From September 2017 to January 2018.	Video exposure to states of empathy for pain, followed by micro-phenomenological interviews.	This research identifies three temporal phases in the experience of empathy: anticipation, climax, and recovery. Each of these phases is associated with different neurophysiological responses, indicating that empathy is a dynamic process involving complex interactions between the body and subjective experience.
6	Huang et al., 2024	The evolution of online public opinion regarding major accidents in sporting events.	Engage broad public opinion of different ages.	This study focuses on marathons as the main type of physical activity.	Over three periods: 1) Outbreak period, 2) Recurrence period, 3) Fading period.	The focus of the research is on public opinion regarding accidents in marathon events.	This research found that public empathy for runners who had accidents played an important role in the evolution of public opinion. This empathy triggered public expressions of sadness and grief.
7	Duclos-Bastias et al., 2024	This research focuses on changes in perceptions of the quality of university sports services used by students at Pontificia Universidad Católica de Valparaíso, Chile.	697 students with an average age of 22.02 years	Activities utilizing various university sports services and non-competitive activities provided by the university.	Two sub-samples were conducted, in 2017 and 2018.	Sports activity services, modern sports facilities, and experienced coaching staff	The empathy dimension shows a significant increase in several items in creating service quality such as staff availability for personal attention, staff concern for user interests, and DIDAF's understanding of student needs.
8	Miloševi ć et al., 2024	This research focuses on the influence of mental toughness and empathy on the game performance of high-level female basketball players.	40 female basketball players with an average age of 16.15 ± 1.02 years.	The physical activity studied was basketball matches in the Women's National Cadet League.	This research was conducted during the 2019/2020 competition season	Mental toughness and empathy measurement, and match performance analysis	The research results show that empathy adds predictive value to mental toughness in predicting match performance.
9	Lem et al., 2024	This research explores the impact of immersive virtual reality on knowledge about depression and stigma reduction through a cross-over RCT study with fMRI.	32 participants with an age range of 19 to 46 years, average age of 24.15 ± 6.21 years.	The use of immersive virtual reality (IVR) and convention videos for anti-stigma interventions from a person-first perspective (1PP).	Conducted in two intervention days with a clearance period of between 1 and 49 days, with an average of 11.75 days.	Exposure to IVR and videos showing daily routines and patient recovery	The results showed that brain activation related to knowledge about depression showed a stronger empathic response to IVR compared to the distress response to the video.
10	Marin-Gonzalez et al., 2024	This research focuses on social-emotional competence as a key dimension for sustainability in Colombian elite athletes, both Olympic and Paralympic, in relation to academic background, gender, age, sport type, and sport modality.	334 elite Colombian athletes with a mean age of 27.10 ± 6.57 years and who had been training in their sport modality for an average of 13.66 ± 6.37 years.	The variety of sports played by Olympic and Para-Olympic athletes, both individual and team sports.	Involving athlete training within the period of the 'Support for Coldeport Athlete Excellence' program.	Assessment of social-emotional competence using the Social-Emotional Competency Scale (SECS).	Athletes with a university education showed higher scores in motivation, self-awareness, teamwork, and empathy compared to those with a basic education.

Discussion

Understanding of empathy is increasingly developing with the latest research that reveals various neurophysiological aspects of the experience of empathy. Physiologically, this research identifies three temporal phases in the experience of empathy: anticipation, climax, and recovery. Each of these phases is associated with different neurophysiological responses, indicating that empathy is a dynamic process involving complex interactions between the body and subjective experience(Troncoso et al., 2024). The anticipation phase prepares the individual to experience another person's experience, the climax phase is the peak of the empathic response where the individual feels the strongest emotions, and the recovery phase is the time when the individual returns to a normal physiological state. Furthermore, the results also showed that brain activation related to knowledge about depression showed a stronger empathic response to immersive virtual reality (IVR) compared to distress responses to videos(Lem et al., 2024). This indicates that more interactive and immersive media, such as IVR, can enhance a person's empathic experience compared to more traditional media such as video. Deeper interactions in IVR allow individuals to better feel and understand the emotional states of others, which contributes to stronger empathic responses. Overall, these findings confirm that empathy is a highly dynamic and complex process involving multiple temporal phases and distinct neurophysiological responses. This research also highlights the importance of interactive media in enhancing empathic experiences, providing new insights into how technology can be used to support the development of empathy.

Research in the world of education continues to reveal various factors that can increase empathy among students, ultimately supporting social justice in educational environments. Research shows that sensitive listening and a warm welcome from teachers can increase empathy among students and help promote social justice in educational settings(de Flor et al., 2024). Teachers who are able to listen attentively and provide supportive responses can create a more inclusive and empathetic learning environment. This allows students to feel more valued and understood, which in turn increases their ability to understand and appreciate other people's perspectives. Furthermore, the results showed that positive group feedback had a negative effect on boys' cognitive empathy, while positive individual feedback increased girls' cognitive and affective empathy(Shima & Suzuki, 2024). This shows the importance of a tailored approach based on the gender and individual characteristics of the student. While group feedback can be detrimental to some students, positive individual feedback can encourage the development of deeper empathy, especially in female students. In contrast, questions asked of individuals decreased affective empathy in girls(Shima & Suzuki, 2024). This highlights the complexity of classroom interactions and the importance of appropriate communication strategies from teachers to support the development of empathy. An approach that is too direct or confrontational may have undesirable effects on some students, so balance is needed in the way teachers interact with students. The "KorriCan" program is considered an innovative physical education initiative in promoting awareness as well as empathy through the integration of dogs in physical education sessions(Gonzalez-Santamaria et al., 2024). This program shows that interaction with animals can be an effective tool for developing empathy and social awareness among students. Interaction with dogs not only helps students in increasing empathy but also in developing other social skills. The empathy dimension shows a significant increase in several items in creating service quality such as staff availability for personal attention, staff concern for user interests, and DIDAF's understanding of student needs(Duclos-Bastias et al., 2024). This research confirms that empathy is not only important in the classroom but also in all aspects of educational services, including interactions between staff and students. Increasing empathy in educational services can create a learning environment that is more supportive and responsive to student needs. Overall, this research highlights the various ways in which empathy can be enhanced in educational settings, whether through sensitive teaching approaches, appropriate feedback, innovative programs such as "KorriCan," or high-quality service. Increasing empathy among students and staff not only supports social justice but also creates a more humane and effective educational environment. Thus, approaches that focus on developing empathy should become an integral part of educational strategies at all levels.

Recent research reveals that empathy is not only important in social contexts but also plays a significant role in sporting achievements. The research results show that empathy adds predictive value to mental toughness in predicting match performance(Miloševiḱ et al., 2024). Athletes who are able to understand and feel the emotions of others tend to have stronger mental resilience, which is especially important in competitive situations. This mental toughness allows them to stay focused, handle pressure, and perform at their best. Additionally, athletes with a university education showed higher scores in motivation, self-awareness, teamwork, and empathy compared to those with a basic education(Marín-González et al., 2024). This shows that higher education not only provides academic knowledge but also develops important social-emotional skills. These skills support better cooperation in teams and motivate individuals to achieve common goals. Furthermore, adaptive soccer coaches require additional training, especially in developing social-emotional competencies such as empathy(Morales-Ocaña et al., 2024). Coaches who can understand the emotional and social needs of their athletes are better able to guide and support them, especially in adaptive contexts where individual needs vary widely. This training also helps coaches create an inclusive and supportive environment for all athletes. This research also found that public empathy for runners who had accidents played an important role in the evolution of public opinion(Huang et al., 2024). The empathy felt by the public triggers public expressions of sadness and grief, which can then influence their views

and attitudes towards the incident. This shows that empathy not only affects individuals but also has a broad impact on overall social perceptions and reactions. Overall, this research highlights the importance of empathy in various aspects of achievement. From improving athletes' mental toughness and performance to its important role in education and training, and its impact on public opinion, empathy is proving to be a key factor that should not be overlooked. Thus, the development of empathy must be the main focus in athlete training and education to achieve optimal results on the field and in society.

Conclusion

Overall, these findings confirm that empathy is a highly dynamic and complex process involving multiple temporal phases and distinct neurophysiological responses. This research shows the importance of interactive media in enhancing empathic experiences, as well as providing new insights into how technology can be used to support the development of empathy. In educational settings, empathy can be enhanced through sensitive teaching approaches, appropriate feedback, innovative programs such as "KorriCan," and high-quality service. Increased empathy among students and staff not only supports social justice but also creates a more humane and effective educational environment.

In sports, empathy has been proven to be a key factor in improving athletes' mental toughness and performance. Higher education also plays a role in developing social-emotional skills such as empathy, which is important for teamwork and individual motivation. In addition, public empathy for athletes who experience accidents can influence public opinion and show the broad impact of empathy on social perception.

Thus, the development of empathy should be a primary focus in athlete training and educational strategies at all levels. An approach that focuses on developing empathy not only supports the achievement of optimal performance in the field and society, but also contributes to the creation of a more inclusive, supportive, and socially just environment. Future research could make a more in-depth and practical contribution to understanding and developing programs with empathy values across a range of contexts, including in physical education, athlete development, and sports in the community.

Acknowledgments

I would like to thank all contributors who have given their time to help complete this review article.

Conflict of interest

The authors declare no conflict of interest.

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