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Influence of Emotional Intelligence on Sports Performance: A Systematic Review

Influencia de la Inteligencia Emocional en el Rendimiento Deportivo: una Revisión Sistemática

Influência da Inteligência Emocional no Desempenho Desportivo: Uma Revisão Sistemática

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ABSTRACT

Background and objectives: Advances in sports science have allowed us to understand the importance of variables related to athletes' emotions, which, in turn, influence sports performance. The study's objective is to examine the influence of emotional intelligence on sport performance. Materials and methods: PRISMA guidelines were followed for the current systematic review. The review was conducted to retrieve relevant articles published from 2018 to March 2024 using the PubMed, Web of Science, and Scopus databases. Information on participants, interventions, and outcomes (PIO) was extracted. The quality of evidence was evaluated using the PEDro scale. The revision was registered with INPLASY under the number INPLASY202480001. Results: Initially, a total of 7927 studies were identified. Following the review process and using inclusion criteria, 16 studies were selected. The total sample size of the studies was 8008 with (3228 womens) and (4780 mens). Results revealed that emotional intelligence influences sports performance. Conclusions: In conclusion, the main contribution of emotional intelligence to sports performance lies in enhancing cognitive processes. Similarly, emotional intelligence is a determining factor in improving sports performance.

Keywords: emotions, emotional competence, sports, exercise, athletes.

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RESUMEN

Antecedentes y objetivos: Los avances en las ciencias del deporte han permitido comprender la importancia de las variables relacionadas con las emociones de los deportistas, las cuales, a su vez, influyen en el rendimiento deportivo. El objetivo del estudio es examinar la influencia de la inteligencia emocional en el rendimiento deportivo. Materiales y métodos: Para la presente revisión sistemática, se siguieron las directrices PRISMA. La revisión se realizó para recuperar artículos relevantes publicados desde 2018 hasta marzo de 2024 utilizando las bases de datos PubMed, Web of Science y Scopus. Se extrajo la información sobre los participantes, las intervenciones y los resultados (PIO). La calidad de la evidencia se evaluó mediante la escala PEDro. La revisión se registró en INPLASY con el número INPLASY202480001. Resultados: Inicialmente, se identificaron un total de 7.927 estudios. Tras el proceso de revisión y utilizando criterios de inclusión, se seleccionar 16 estudios. El tamaño total de la muestra de los estudios fue de 8008 (3228 mujeres), y (4780 hombres). Los resultados revelaron que la inteligencia emocional influye en el rendimiento deportivo. Conclusiones: En conclusión, la principal contribución de la inteligencia emocional al rendimiento deportivo radica en la mejora de los procesos cognitivos. Del mismo modo, la inteligencia emocional es un factor determinante en la mejora del rendimiento deportivo.

Palabras clave: emociones, competencia emocional, deporte, ejercicio, deportistas.

RESUMO

Enquadramento e objectivos: Os avanços nas ciências do desporto têm levado à compreensão da importância das variáveis relacionadas com as emoções dos atletas, que, por sua vez, influenciam o desempenho desportivo. O objetivo do estudo é analisar a influência da inteligência emocional no desempenho desportivo. Materiais e métodos: Para a presente revisão sistemática, foram seguidas as directrizes PRISMA. A revisão foi realizada para recuperar artigos relevantes publicados de 2018 a março de 2024, utilizando as bases de dados PubMed, Web of Science e Scopus. Foram extraídas informações sobre os participantes, as intervenções e os resultados (IOPs). A qualidade da evidência foi avaliada utilizando a escala PEDro. A revisão foi registada no INPLASY com o número INPLASY202480001. Resultados: Inicialmente, foi identificado um total de 7.927 estudos. Após o processo de revisão e utilizando os critérios de inclusão, foram definidos 16 estudos. O tamanho total da amostra dos estudos foi de 8008 (3228 do sexo feminino) e (4780 do sexo masculino). Os resultados revelaram que a inteligência emocional influencia o desempenho desportivo. Conclusões: Em conclusão, o principal contributo da inteligência emocional para o desempenho desportivo reside na melhoria dos processos cognitivos. Da mesma forma, a inteligência emocional é um fator determinante para a melhoria do desempenho desportivo.

Palavras chave: emoções, competência emocional, desporto, exercício, atletas

INTRODUCTION

Sport is considered an activity where changing situations manifest and prepares athletes to adapt to these conditions (Figueira et al., 2024) mainly from a technical, tactical, and physical perspective, often neglecting psychological factors (Sabarit et al., 2022). There, some studies have been developed that highlight the importance of considering other approaches that relate physical, technical and psychological characteristics (Forsman et al., 2016; Barraclough et al., 2022; Fuhre et al., 2022; Becerra-Patiño et al., 2023).

Among these processes, emotions take center stage in response to different variables such as sporting experience (Rodríguez-Romo et al., 2021), competitiveness (Jekauc, 2018; Jekauc et al., 2021), and coaches' perception of the influence of emotions on the athlete's interpersonal development to make significant contributions to their team (da Silva Neto et al., 2023). The most common emotions shown by athletes before a competition are anxiety, nervousness, or fear; or, conversely, feelings of happiness after winning a game or pride, directly influencing their performance (Tamminen & Dunn, 2022). The scientific literature contains documents related to Emotional Intelligence (EI) and sports (Amado-Alonso et al., 2019; Laborde et al., 2016; Ubago-Jiménez et al., 2019). These

studies show how a higher level of EI generates a more positive attitude toward the practice of Physical Activity (greater motivation). In addition, athletes have a lower level of anxiety and competitive stress, because motivation is considered a phenomenon that integrates emotional, biological, social and cognitive aspects that are interrelated and has been evaluated based on observable behaviors (Zarauz & Ruiz-Juan, 2016; Sheehan et al., 2018).

Therefore, it is an interesting field of research that needs further academic development. This is in relation to the study developed by O'Connor et al. (2019) by stating that most of the results related to emotions reveal that trait EI has the tendency to be a stronger predictor and, consequently, it has been suggested to consider the assessment of EI based on trait measure that allows identifying future lines of study for the assessment of EI.

When analyzing EI, elevated novels in psychological constructs have been reported, among them the management and perception of emotions, however, emotional use needs improvement (Castro-Sánchez et al., 2019). Data that relate to other studies where moderate levels of EI have been reported in young athletes belonging to individual and collective sports (Akelaitis & Malinauskas, 2018). These emotions (social stress, physiological stress and psychological stress) arise in situations that are important to the athlete (James et al., 2023), as emotions are neuropsychophysiological processes that establish interrelationships between objective-subjective factors mediated by neurohumoral systems (Kimura, 2004; Dolcos et al., 2020; Eslinger et al, 2021).

According to Kleinginna et al. (1981), emotions develop through four pathways: 1) giving space to affective experiences mediated by processes of arousal, pleasure, or displeasure; 2) cognitive processes mediated by perceptual mechanisms, valuations, and designation processes that are emotionally relevant; 3) activation of physiological adjustments in response to arousal processes; and 4) guiding expressive behaviors and adaptations to achieve set goals. Therefore, emotions are closely related to perception, cognition, neurophysiology, motivation, motor behavior, feelings, and decision-making (Beedie et al., 2000; Hanin, 2012; Jekauc & Brand, 2017), which may lead to the manifestation of sports performance that is adaptable to competition demands (Becerra-Patiño, 2021). In this line, athletes enhance their sports performance when there is greater cohesion and emotional well-being within the team (Tamminen et al., 2016). Also, emotional regulation skills increase with age because of personal experiences accumulated throughout life and interpersonal relationships. Furthermore, they allow greater emotional control, with less physiological activation in negative conditions and more positive emotional experiences (Conde-Pipó et al., 2021).

Thus, according to Mayer & Salovey (1997), the emotion process is like the construct of EI. Goleman (1995) extended the concept of EI, relating it the ability to recognize, understand, and manage one's own emotions and the ability to understand and influence others' emotions. EI is fundamental for personal and professional success (Amdurer et al., 2014; Boyatzis & McKee, 2005; Salovey & Grewal, 2005), as it impacts the ability to face challenges and maintain healthy interpersonal relationships. Emotional management is a process derived from the EI (Serrat, 2017). It allows individuals to become aware of their own emotions, understand the feelings of others, tolerate the pressures and frustrations generated by the environment, improve the ability to work in a team, and adopt an empathetic and social attitude, among other skills. In addition, recent studies have found that people with higher EI may be more likely to use their emotions to achieve their goals, even at hedonic costs in the short term (Ford & Tamir, 2012). According to Goleman (1995), the characteristics of EI are: 1) self-awareness: the ability to identify, express, and control one's feelings; 2) impulse control: the ability to control impulses and postpone gratification; 3) stress and anxiety management: the ability to manage sensations of stress and anxiety; 4) empathy: the ability to interpret emotional and social signs accurately, listen, resist negative influences, take others' perspectives, and understand appropriate behavior in various situations.

As Laborde et al. (2016) pointed out, the sport environment constantly exposes athletes to the stress of long training sessions and competitive pressure. In recent years, the number of experimental studies related to sport performance and EI has increased considerably (Crombie et al., 2009; Lane & Wilson, 2011; Sadiku et al., 2020; Becerra-Patiño, 2021; Vaughan et al., 2021; Petrovska et al., 2023; Mon-López et al., 2023). A meta-analytical study on the influence of EI on performance in competitive sports determined that EI could be considered a predictor of sports performance, as scientific evidence has shown a moderate positive relationship between these variables; however, it is still unclear how EI moderates this relationship (Kopp & Jekauc, 2018). Studies demonstrate that athletes who

score higher on EI questionnaires are more successful and experience better performance (Lane et al., 2010). In line with this these authors identified that EI correlated with pleasant emotional states before optimal performance. Consequently, EI appears to be associated with emotions such as vigor, happiness, and calmness, even when athletes' performance is below personal standards (Lane et al., 2010). Nicolas et al. (2019) analyzed the positive role of EI in the ability to manage and recover from stress before, during, and after a mountain ultramarathon race (MUM). Finally, the study conducted by Mercader et al. (2023) found that athletes with higher levels of EI presented higher levels of intrinsic motivation in various areas, such as learning and exploring, creating, or perfecting an action.

Based on what was mentioned before, there is a need to continue developing studies that address the relationship between EI and sports performance. To the best of our knowledge, there are no systematic reviews evaluating the relationship between both factors. Therefore, this study aims to examine the influence of EI on sports performance using the use of a systematic review. This study considers the questionnaires conducted, and the types of sports involved to gain a better understanding of the relationship between EI and sports performance.

MATERIAL AND METHOD

Desing

The search approach, along with selection criteria and additional details, was previously noted in the prospective registry for INPLASY systematic reviews (INPLASY202480001). This systematic review was constructed based on the PRISMA statement (Moher et al., 2014; Page et al., 2022).

Inclusion and Exclusion Criteria

To select the most appropriate documents aligned with to the study aim, the following inclusion and exclusion criteria were set: i) empirical studies; ii) original research; iii) EI evaluated in the sports context (population samples with athletes); iv) studies reporting statistical results; v) written in English. Thus, excluded were: i) systematic reviews, meta-analyses, bibliometric analyses, narrative, or literature reviews; ii) doctoral theses and communications or articles with abstracts only; iii) patents, abstracts, meetings, books, reviews, letters, and editorials; iv) validation of instruments; v) qualitative studies.

Search Strategy

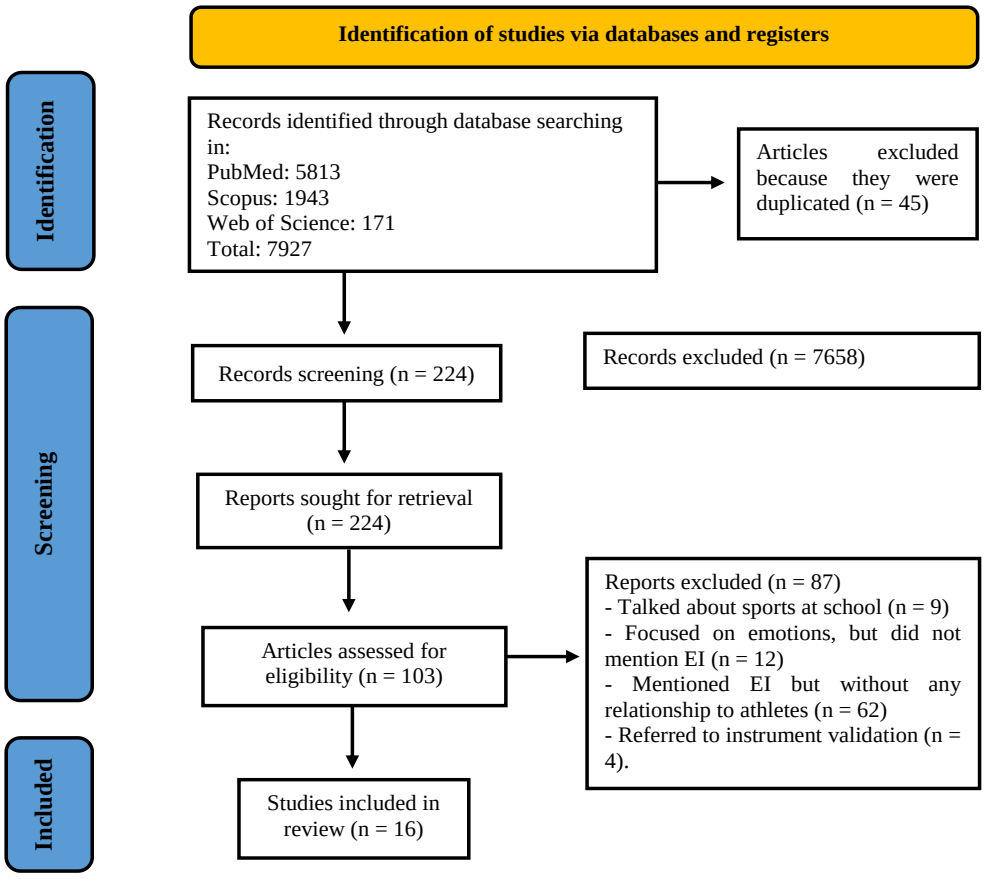
This systematic review follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines (Liberati et al., 2009). Authors “A.M.-B.” and “B.A.B.-P.” searched the following electronic databases: PubMed (Medline), Web of Science, and Scopus. The search was conducted from March 6, 2024, to March 22, 2024. Before arriving at the construction of the final search phrase for each database, possible combinations were tested with the following list of words: “emotional competence”, “emotional intelligence”, “athletes”, “collective sports”, “individual sports”, “competitive level”, “sport performance”. The following search equation was defined: (Athletes OR collective sports) AND (competence emotional OR emotional intelligence) AND (competitive level OR sport performance).

Data Extraction and Study Selection

Following the PRISMA guidelines, data extraction was carried out by A.M.-B. using the PIO approach, which includes participants, intervention, and outcomes (Liberati et al., 2009). A total of 7927 documents were found, with 5837 from PubMed, 1943 from Scopus, and 171 from Web of Science. 45 articles were removed due to duplication and 7658 were excluded format meeting the inclusion criteria. Then, 224 documents were reviewed through an initial review of the title and abstract, and full access to the study was obtained for a systematic reading of the document. From this, 103 documents were considered eligible, of which 87 were excluded resulting in a final sample for the review of 16 studies for the review (Figure 1). The date range considered ranged from 2018 and March 2024. This range was chosen because some documents already study the existing literature on EI in the context of sports and physical activity (Laborde et al., 2016) and the relationship between EI and the practice of

physical activity and sports, as well as identifying possible differences between genders (Ubago-Jiménez et al., 2019). Then, the search was refined to consider only articles published in the "Sports Sciences" research area.

Figure 1.
Flow diagram for selection of studies according to PRISMA guidelines.



Quality of Evidence

The evaluation of methodological quality was performed by two investigators who analyzed the papers independently to reduce bias in the scores, and to avoid contamination of the results. The quality of evidence of the articles included in this review was assessed using the PEDro scale. This scale is based on criteria that allow identifying whether the RCTs have sufficient internal validity and statistical information to interpret the results (external validity (item 1), internal validity (items 2-9), and statistical information (items 10-11)). Each item was classified as yes or no (1 or 0, respectively) depending on whether the criterion was met in the study. The total score considers items 2 to 11. Therefore, the maximum score was 10 (Cashin & McAuley, 2020). Two independent researchers "B.A.-B." and "A.D.-M." evaluated the articles using this scale. In case of discrepancy, a third evaluator (J.D.-P.) was consulted. After this evaluation, the available articles were assessed in the PEDro database (https://search.pedro.org.au/search). Regarding the quality of evidence, scores < 4 are considered poor quality, 4-5 moderate quality, 6-. 8 is good and 9-10 is excellent (Cashin & McAuley, 2020).

In this review, 160 items (95%) were assessed by agreement between two reviewers, and the other items by agreement with the average of the studies (Table 1). The quality of the evidence ranged from the "Moderate-Good" category, given that there were some studies without randomization and a control group. Furthermore, the quality

of the evidence was heterogeneous between studies. However, because the evaluation of EI was always carried out using questionnaires, it helped homogenize the interventions carried out and the results obtained. Therefore, the quality of the evidence was defined by the consensus of the researchers as "Good", which means that "it has good methodological quality" (Cashin & McAuley, 2020).

Table 1

Methodological quality of the Studies included.

	Items												
Studies	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**Total**	**Quality**
Selmi et al. (2024)	1	1	1	1	1	1	0	1	1	1	1	9	Excellent
Mon-López et al. (2023)	1	1	0	1	0	0	1	1	1	1	1	8	Good
Petrovska et al. (2023)	1	0	0	0	0	0	0	1	0	1	1	3	Poor
Berastegui-Martínez & López-Ubis (2022)	1	0	0	1	0	0	0	1	1	1	1	5	Moderate
Nicolas et al. 2022	1	1	1	0	0	0	0	1	1	1	1	6	Good
Petrovska et al. (2021)	1	0	0	1	0	0	0	1	1	1	0	4	Moderate
Suárez & Jiménez, (2021)	1	1	0	0	0	0	0	1	1	1	1	5	Moderate
Vaughan et al. (2021)	1	1	0	1	0	0	0	1	1	1	1	6	Good
Acebes-Sánchez et al. (2021)	1	1	0	0	0	1	1	1	1	1	1	7	Good
Sarikabak et al. (2021)	1	1	0	0	0	0	0	1	1	1	1	5	Moderate
Tinkler et al. (2021)	1	1	0	0	0	0	0	1	1	1	1	5	Moderate
Fernández et al. (2020)	1	1	0	0	0	0	0	1	1	1	1	5	Moderate
Mitić et al. (2020)	1	1	0	1	0	0	0	1	1	1	1	6	Good
Nicolas et al. (2019)	1	1	0	1	0	1	1	1	1	1	1	8	Good
Gallardo Peña et al. (2019)	1	1	0	1	0	0	0	1	1	1	1	6	Good
Castro-Sánchez et al. (2018)	1	1	0	0	0	0	0	1	1	1	1	6	Good
Average	10	8.1	1.2	5.0	0.6	1.9	1.9	10	9.4	10	9.4	5.8	Good

RESULS

A total of 16 documents were included in the analysis. Above, the documents are classified and ordered by chronological time. In the same line, some characteristics about them are shown such as the study design, the aim of the study and the main conclusions (Table 2).

Table 2

Summary of the selected studies.

Author and year	Study design	Aim	Main Results
Selmi et al. (2024)	Experimental GE: 15 GC: 13	Investigate the impact of a six-week intervention involving CoD and RA training on EI and attention in pubertal tennis players.	The CoD and RA training intervention had a positive effect on EI compared to the control group. Significant improvement in attention was observed in the experimental group after six weeks of agility training.
Mon-López et al. (2023)	Correlational and cross sectional	Analyze differences in total EI and its four dimensions (SEA, OEA, UOE, and ROE) in a broad sample of Spanish federated athletes in eight different sports, controlling for sex and age.	Judokas have higher levels of EI compared to other sports, both in women and men. These results remain consistent when controlling for sex and age. Significant differences were found between other sports, but they were not as notable or consistent as those found in judo.
Petrovska et al. (2023)	Descriptive and cross sectional	Establish a relationship between coping strategies and EI in elite handball players.	Results suggest the importance of integrating EI correction in psychological training for athletes to enhance stress resilience.
Berastegui-Martínez & López-Ubis, (2022)	Experimental GE: 19 GC: 18	Analyze the effects of a socio-emotional skills development program titled "Aurrera neskak" among professional female soccer players.	Athletes in the program were more aware of their emotions, demonstrating both the trainability of socio-emotional skills and their influence on coping styles during competitions among professional soccer players.
Nicolas et al. (2022)	Correlational and cross sectional	Examine changes in stress recovery states before, during, and after one of the most challenging MUM and investigate how the trait of EI affects these stress recovery states.	Athletes with higher trait EI scores reported better recovery states compared to those with lower scores, suggesting a positive role of trait EI in the ability to handle challenging situations.
Petrovska et al. (2021)	Descriptive and cross sectional	Investigate the impact of physical activity on the level of EI among youth, examine the correlation between EI and sports achievements, and explore differences in EI indicators among athletes from different sports.	Young athletes had significantly higher levels of EI compared to non-athletes. The most notable difference among sub-groups of athletes was in their ability to manage their own emotions.
Suárez & Jiménez, (2021)	Descriptive and cross sectional	Analysis of sports performance and its relationship with self-esteem, motivation, and EI in federated athletes.	Concluded that intrinsic motivation and EI are relevant psychological variables associated with higher sports performance.
Vaughan et al. (2021)	Correlational and cross sectional	Examine the interaction between working memory (emotional, capacity, and ability), trait EI and athletic experience.	Trait EI is important for working memory in athletes. Additionally, the link between cognitive and affective processes becomes increasingly relevant as athletes gain higher levels of experience.
Acebes-Sánchez et al. (2021)	Descriptive and cross sectional	Analyze differences in EI dimensions (EA, EC, and ER) among those who do not meet physical activity (PA) recommendations, those who do, those who practice sports specifically to meet PA recommendations, and judo athletes of different levels.	Judo athletes exhibited significantly higher levels of ER compared to those who meet PA recommendations and those who practice sports to meet these recommendations.

Note: GE = Experimental Group, GC = Control Group, SEA = Self-Emotional Appraisal, OEA = Others' Emotional Appraisal, UOE = Use of Emotion, ROE = Regulation of Emotion, MUM = mountain ultra-marathon, EA = Emotional Awareness, EC = Emotional Control, ER = Emotional Regulation, PA = Physical Activity, EI = Emotional Intelligence, change of direction = CoD, Reactive agility = RA.

Table 2 (continuation)

Summary of the selected studies.

Author and year	Study design	Aim	Main Results
Sarikabak et al. (2021)	Correlational	Investigate the relationship between EI and various variables in athletes, including their status as individual or team players, age, and gender.	No statistically significant differences in EI between individual and team players were found. However, team athletes scored higher on the use of emotions, potentially due to the intense relationships and empathy developed in teams.
Tinkler et al. (2021)	Descriptive correlation	Investigate the relationship between EI and levels of competitive anxiety in South African field hockey players, focusing on cognitive anxiety and self-confidence.	Found that players with strong emotional connections to their teammates tended to experience less cognitive anxiety, highlighting the importance of social support and positive relationships in promoting emotional well-being and performance in sports.
Fernández et al. (2020)	Descriptive and cross sectional	Examine associations between anxiety and EI in the context of six combat sports, considering gender and competitive level differences.	Higher levels of cognitive and motor anxiety were observed in judo, taekwondo, and kendo compared to jiu-jitsu, wrestling, and karate. No differences in EI between sports were found, suggesting that anxiety is more associated with factors like gender and competitive level.
Mitić et al. (2020)	Cross sectional	Investigate the relationship between EI and stress coping strategies in elite and non-elite athletes and explore if sports performance moderates this relationship.	EI was positively related to active coping strategies, such as task-oriented coping and seeking social support. No significant correlations were found between EI and passive coping strategies, like emotion-oriented coping.
Nicolas et al. (2019)	Longitudinal	Examine the temporal evolution of emotions (anxiety, dejection, anger, happiness, excitement) experienced by MUM runners within a month following a demanding MUM race and the role of EI in these time courses.	EI was related to the intersection (level at the end of the MUM race) of happiness, excitement, and dejection. Additionally, the interaction of EI with time was associated with happiness, excitement, and anger, indicating that runners with high and low EI exhibited distinct emotional trajectories post-race.
Gallardo Peña et al. (2019)	Descriptive and cross sectional	Determine if there is a relationship between weekly training hours, EI, and the aggression exhibited by athletes. Also, investigate if sex, age, amount of training hours, and type of sport (individual, contact, or non-contact) influence EI and aggression.	Athletes in non-contact sports had a higher ability to identify and evaluate emotions compared to contact sport athletes. Contact sport athletes exhibited higher levels of physical or verbal aggression, hostility, or anger than those in individual and non-contact sports. Men showed higher levels of physical or verbal aggression than women.
Castro-Sánchez et al. (2018)	Descriptive and cross sectional	Analysis of connections between motivational climate in sports, anxiety, and EI based on the type of sport practiced (individual/team) through multigroup structural equation modeling.	Task-oriented motivational climate or certain levels of EI can act preventively against anxiety states in athletes. Therefore, developing these psychological factors could prevent anxiety and improve sports performance.

Note: GE = Experimental Group, GC = Control Group, SEA = Self-Emotional Appraisal, OEA = Others' Emotional Appraisal, UOE = Use of Emotion, ROE = Regulation of Emotion, MUM = mountain ultra-marathon, EA = Emotional Awareness, EC = Emotional Control, ER = Emotional Regulation, PA = Physical Activity, EI = Emotional Intelligence, change of direction = CoD, Reactive agility = RA.

Participants

The 16 studies that made up the sample of this systematic review have a total sample size of 8008 participants, of which 4780 are men (59.69%), and 3228 are women (40.30%), as shown in Table 3. Data extraction has considered the following coding process: (1) author(s) and year; (2) population; 3) sample (Women (W)/Men (M)); 4) age; 5) instrument. Regarding the age, five studies considered athletes under 18 years of age (Gallardo Peña et al., 2019; Petrovska et al., 2021; Sarikabak et al., 2021; Petrovska et al., 2023; Selmi et al., 2024), six studies considered athletes between 18 and 28 years (Fernández et al., 2020; Suárez & Jiménez., 2021; Vaughan et al., 2021; Tinkler et al., 2021; Berastegui-Martínez & López-Ubis, 2022; Mon- López, 2023) and four studies considered athletes between 29 and 50 years (Nicolas et al., 2019; Castro-Sánchez et al., 2018; Nicolas et al., 2019; Acebes-Sánchez et al., 2021; Nicolas et al., 2022). Finally, only one study did not report the age of the participants.

Table 3

Data from the studies for systematic review.

Author and year	Population	Sample M/W		Age (M/SD)		Instrument
Selmi et al. (2024)	Junior tennis players	21♂	7♀	13.26±0.93 13.43±0.80		PEC
Mon-López et al. (2023)	Athletes: (volleyball, athletics, shooting, soccer, basketball, handball, gymnastics, judo)	1200♂	966♀	27.8±11.1	21.9±7.68	WLEIS-S
Petrovska et al. (2023)	Handball elite		21♀	17-28**		N-HM
Berastegui-Martínez & López-Ubis (2022)	Elite soccer players		37♀	22.53±3.06		TEIQue
Nicolas et al. 2022	Ultra-Marathon Runners	11♂	2♀	40.08±6.76*		BEIS-10
Petrovska et al. (2021)	Athletes: Table tennis (12); Sprints (23); Football (33); Wrestling (19) and Volleyball (38)	64♂	61♀	17-19**		N-HM
	Not Athletes	56♂	64♀			
Suárez & Jiménez, (2021)	Federated athletics	88♂	83♀	23.3±4.8*		SSRI
Vaughan et al. (2021)	Not athletes: 96 Athletes: (basketball, rugby, hockey, soccer) Novices: 92; Amateurs: 85; Elite : 83; Super elite: 81	255♂	182♀	18-27**		ERT
Acebes-Sánchez et al. (2021)	Judo	437♂		30.22±9.50		TMMS-24
Sarikabak et al. (2021)	Athletes (Individual sports: 1706 Team sports: 1030)	1611♂	1125♀	15-27**		SSEIT
Tinkler et al. (2021)	Field Hockey	60♂		21.57±3.65		EIS
Fernández et al. (2020)	Athletes: Jiu-jitsu: 142; Judo: 137; Karate: 57; Kendo: 63; Taekwondo: 25; Wrestling: 20	273♂	171♀	24.7±8.8*		TMMS-24
Mitić et al. (2020)	Athletes: Individual sports (judo, swimming, athletics) and team sports (football, basketball, handball, volleyball, waterpolo) No Athletes	217♂	123♀			UEK-45
Nicolas et al. (2019)	Ultra-Marathon Runners	17♂	12♀	43.4±11.1	44.1±6.3	BEIS-10
Gallardo Peña et al. (2019)	Athletes (individual, contact or non-contact sports)	235♂	237♀	17.53**		CIED-V2.0
Castro-Sánchez et al. (2018)	Athletes: Soccer (141); Padel (41); Athletics (172); Taekwondo (18)	235♂	137♀	18-50**		SSRI

Note: PEC: Psychometric Emotional Competence; WLEIS-S: Wong Law Emotional Intelligence Scale Short Form; N-HM: Nelson-Hall methodology; TEIQue: Trait Emotional Intelligence Questionnaire; BEIS-10: Brief Emotional Intelligence Scale; SSRI: Schutte Self Report Inventory; ERT: Emotion Recognition Task; TMMS-24: Trait-Meta Mood Scale; SSEIT: Schutte Self-Report Emotional Intelligence Test; EIS: Emotional Intelligence Scale; UEK-45: Emotional Competence Questionnaire; CIED-V2.0: Questionnaire on Emotional Intelligence in different sports contexts. *Reference the age of the total sample; **Reference the age without standard deviation and set it between those year.

Interventions

The corpus of this study comprises articles developed across various individual and team sports. Notably, a significant portion of the research focuses on soccer/football athletes (37.5%), athletics (25.00%), judo (25.00%), volleyball, basketball, and handball (18.75%), wrestling, taekwondo, ultra-marathon, individual sports and non-athletes (12.5%), table tennis, sprints, water polo, shooting, swimming, gymnastics, padel, karate, jiu-jitsu, kendo, tennis, hockey, rugby, field hockey, and team sports (6.25%).

In addition to the studies found, there is a low production of documents in the childhood stage (<14 years) since only one document was found.

Outcome Measures

The outcome measures included in the current systematic review were those evaluated in at least two articles. These variables were EI, anxiety, and stress, EI and sports modality and EI and sports performance.

Emotional Intelligence, Anxiety, and Stress

Three studies considered the EI-anxiety categories and two EI-stress. Regarding the former, Tinkler et al. (2021), confirmed that sports players showed cognitive anxiety (M = 36.23, SD = 8.90), while somatic anxiety (M = 40.80, SD = 7.41) was largely neutral, meaning it was not considered either facilitative or debilitative to their sports performance. Although anxiety did not show a significant association with overall EI, significant associations were observed between the management of one's own emotions and the emotions of others with cognitive anxiety.

Nicolas et al. (2019) found that anxiety and sadness showed negative linear effects over time (β = -0.10). These data suggest that higher levels of EI, especially in regulating one's own emotions, are associated with lower levels of anxiety and higher levels of emotion and happiness in runners. Finally, Castro-Sánchez et al. (2018) reports that EI is positively related to a task-oriented motivational climate for individual sports (r = 0.47) and team sports (r = 0.39), while there is a negative relationship with state anxiety (r = -0.30) for athletes practicing both individual and team sports. Specifically, higher EI was associated with a motivational climate focused on effort and personal improvement, which in turn was related to lower levels of state anxiety. However, there are no significant associations between EI and trait anxiety in any of the athlete groups.

Regarding EI and stress, Nicolas et al. (2022), found that recovery stress correlated negatively with stress state (r = -0.59, $p < 0.05$) in the total sample, while trait EI did not show a significant correlation with stress or recovery. A significant difference was observed between the high and low trait EI groups (p = 0.008, d = 2.23), with the high trait group showing a negative correlation between recovery and stress (r = -0.91, $p < 0.05$), suggesting that better recovery is associated with lower stress levels.

Lastly, Petrovska et al. (2023) suggests that handball players use a variety of coping strategies to deal with the demands of the sport, including stress management. Adaptive strategies, such as confrontation and emotional control, predominated among elite handball players. Additionally, it is highlighted that EI seems to play an important role in how players manage stress and adverse situations.

Emotional Intelligence and Sport Modality

In the study by Mon-López et al. (2023), significant differences in EI between sports were found, with football standing out with higher scores in emotional self-assessment compared to handball, gymnastics, volleyball, athletics, and basketball. Additionally, judo showed higher scores in emotional assessment (OEA) compared to basketball, handball, athletics, and football. Regarding the use of emotion (UOE), judo had higher scores than volleyball and handball, while football had higher scores compared to basketball. In emotion regulation (ROE), judo scored higher than basketball, athletics, gymnastics, and handball.

Finally, in overall EI, judo again stood out with higher scores than volleyball, basketball, handball, and athletics, while handball had lower scores compared to football, athletics, and shooting. This highlights the need to understand emotional characteristics according to the sport. The study by Gallardo Peña et al. (2019) indicates that

non-contact sports practitioners show a greater ability to identify and assess emotions compared to those who practice contact sports.

Emotional Intelligence and Sports Performance

Six studies included EI and sports performance, with a total of 3.716 participants, most of whom were men. In this regard, only one of the studies had a control and experimental group. Selmi et al. (2024) showed that agility training in young tennis players resulted in significant improvements in EI, with large effect sizes in total emotional competence (d = 1.19; p = 0.007), intrapersonal (d = 1.53; p=0.001), and interpersonal (d = 1.44; p = 0.001) in the experimental group, whereas the control group showed lower effect sizes (Total EC: d = 0.45; p = 0.136, Intra EC: d = 0.18; p = 0.551, Inter EC: d = 0.18; p = 0.518).

Other studies reflect the following: Petrovska et al. (2021) indicates that although there are no statistically significant differences in EI integration between award-winning and non-award-winning athletes, certain trends suggest a possible correlation between emotional control and sports success. On the other hand, Suárez & Jiménez (2021) explains that there are significant differences ($p < 0.05$) in EI regarding sports performance, except in the dimension of hetero-emotional management (p = 0.88).

Athletes with higher values in general EI reported high and very high performance, while lower scores in emotional skills were observed in athletes with medium performance. These results are consistent with those reported by Fernández et al. (2020), where high-level athletes show greater emotional clarity and emotional repair, compared to those at intermediate or low levels. In this vein, Mitić et al. (2020) explains that sports performance plays a relevant role in how EI relates to coping strategies for stress associated with competition and training. Meanwhile, Sarikabak et al. (2021) suggests that age and gender can influence the EI levels of elite athletes, while the type of sport they practiced does not seem to significally impact these levels.

DISCUSSION

The study aimed to examine the influence of EI on sports performance, finding that the main contribution of EI to sports performance lies in the improvement of cognitive processes. Likewise, EI is a determining factor in the improvement of sports performance. In the scientific literature, EI has commonly been studied more in spaces related to education (Rico-González, 2023). However, some studies consider the importance of EI and motivational regulation expressed by athletes (Cheban et al., 2020; Ostapyak et al., 2020; Castro-Sánchez et al., 2019).

As far as it is known, few systematic reviews address the study and influence of EI on sports performance. Compared to the other two identified systematic reviews and the meta-analysis, the first systematic review sought to generate a theoretical integration of the various perspectives of the tripartite model of EI in sport and physical activity (Laborde et al., 2016). The next study was the meta-analysis by Kopp & Jekauc (2018), which examined the relationship between EI and sports performance in team sports under studies published up to 2018. Meanwhile, the last systematic review tracked to 2019 and examined the relationship between EI and physical activity practice, determining that the most developed field of study was education (Ubago Jiménez et al., 2019). Compared to the other reviews, this study seeks to provide insight into the influence of EI on sports performance, referencing studies published from 2018 to March 2024. This is due to the increase in studies addressing EI to relate it to other sports and athlete capacities.

According to Kopp & Jekauc (2018), EI is a weak indicator of sports performance, and this aligns with previous conclusions from other studies that have considered EI (Laborde et al., 2016; Birwatkar, 2014). However, recent results highlight how longitudinal and experimental studies provide improvements in EI through abilities such as agility, which can translate into the interrelationship between physical and emotional abilities necessary for sports (Selmi et al., 2024). Likewise, Petrovska et al. (2021), and Suárez & Jiménez (2021) conclude that EI could contribute to achieving sports success, determining that athletes with higher scores show better performance (Fernández et al., 2020). Similarly, other studies reveal that EI influences sports performance due to the strategies employed to cope with and manage the stress produced in competition (Mitić et al., 2020). However, other variables such as age, gender, and sport type should be considered in future studies to further clarify the true

contribution, relationship, and influence of EI on sports performance. For this reason, it is recommended to increase the number of research related to the subject as EI can influence sports performance.

Previous findings confirm how EI can become a determining factor in the development of specific competencies in sports practice (Ubago-Jimenez et al., 2019), and scientific evidence is gradually beginning to recognize EI as a predictor of sports performance. This encourages coaches, professionals, psychologists, and interdisciplinary groups to recognize the role of EI in the sports performance of both athletes (Kopp & Jekauc, 2018) and coaches (Aronen et al., 2021). Therefore, it is necessary to acknowledge that although the EI scores derived mainly from the questionnaires used may not completely evaluate all the emotions experienced by athletes (Meyer & Zizzi, 2006; Meyer & Fletcher, 2007; Friesen et al., 2012), longitudinal and experimental studies should continue to be developed to establish causal relationships between variables. This is due to the increasing demands and requirements imposed by competition, seeking to manifest superior sports performances through improvements in times, records, and more (Martínez et al., 2013; Mathivanan & Chileshe, 2013). Currently, sports performance is a challenging process for the entire sports nucleus accompanying the athlete (Laborde et al., 2018), which is why psychological factors such as EI gain greater prominence in Sports Science studies. Therefore, EI is a key factor that can impact the social and psychological well-being of athletes.

Regarding the way EI is evaluated, this review details how four instruments were employed by at least two studies (N-HM, BEIS-10, SSRI, TMMS-24). This demonstrates a concern for considering EI in sports, although, on the other hand, it may hinder the interpretation of findings. One way to evaluate EI was through the N-HM (Hall, 2000), where it is detailed, that EI helps reduce stress, and it is found that athletes achieve higher values, findings confirmed by Popovych et al. (2023). Finally, other studies also recognize how the BEIS-10, SSRI, and TMMS-24 questionnaires allow measuring EI in athletes (Cece et al., 2019; Tahmasebi et al., 2012; Fernández et al., 2019), highlighting the importance of EI and emotional regulation in athletes. Finally, it is recommended that more research be carried out related to the training of sports agents in EI. To achieve this, it will be essential to know cultural diversity.

Limitations, strength, and future perspective

The main limitations focused on the fact that only one experimental design study with a control group was found, which made it difficult to make comparisons between the athletes evaluated because most of the studies had a cross-sectional design. As a strength, it is one of the first studies to analyse the influence of EI on performance through a review of the literature. This has made it possible to identify and analyse the most important studies related to the subject published previously. Likewise, relevant conclusions have been drawn for the coaching staff or physical preparation of athletes, since creating a good working environment, as well as reducing the levels of pressure and anxiety have a direct influence on sports performance. In this line, as a future recommendation, it is proposed to establish lines of research related to questionnaires that analyses EI in different disciplines. As well as carrying out interventions with different methodologies, and analyzing their influence on the levels of stress, anxiety, and EI, to determine which is more decisive in performance.

CONCLUSIONS

The results of the present systematic review reveal that EI does influence sports performance and is also related to the regulation of anxiety and stress caused by competition. In the same way, it seems that the sports modality is a variable sensitive to the influence of EI, so it is necessary to continue developing studies that consider these variables.

The analyses derived from the studies, mainly of cross-sectional design, show that EI influences sporting success, finding that the athletes who achieved the highest scores in the questionnaires were the ones who showed the best performance. However, it is necessary to have more scientific evidence to continue understanding how EI regulates this process and influences sports performance about age, sports and competitive experience, gender, and sport.

PRACTICAL APPLICATIONS

The present review suggests that technical bodies be more aware of the importance of interpersonal skills to improve sports performance. Likewise, it is recommended to increase research related to the subject, and to know the influence of the different sports agents involved, such as coaches, managers, etc., as well as to analyze the population and culture.

Finally, it is important to mention that 12 instruments were found with which emotional intelligence has been evaluated, which can help to determine theoretical models that integrate the different variables that are evaluated and with this, promote lines of research that allow to continue understanding the influence of EI in sports performance in the different processes of training, specialization and high performance.

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