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Adolescents' Sport Participation and Socioemotional Learning

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Abstract: Despite the widespread belief that organized sports are beneficial for the personal development of adolescents, there is a scarcity of empirical evidence to substantiate this assertion. To clarify this, we conducted a rapid search of six databases (PubMed, Web of Science, Scopus, PsycINFO, ERIC, and SPORTDiscus) for papers published between 2019 and May 2025. Seven peer-reviewed studies (two randomized, one quasi-experimental, two longitudinal, and two mixed/qualitative) with 68,553 participants that satisfied the PRISMA-2020 eligibility criteria were identified. In each of these studies, structured sports or physical education programs enhanced at least two CASEL skills: self-management/emotion regulation by standardised mean differences of 0.38–0.72, relationship skills by 0.34–0.61, and self-awareness and responsible decision-making by more minor but still significant amounts (≈0.30–0.50) when reflection tasks were applied. Interventions that were conducted by competent, autonomy-supportive coaches and lasted a minimum of 12 weeks exhibited effect sizes that were up to 50% greater than those of short or unintentional programs. Even school violence was reduced by an eight-month TPSR curriculum. In terms of practicality, these results demonstrate that

"intentional sport" is a cost-effective and scalable method for assisting adolescents in the development of their emotional control, moral reasoning, and teamwork skills that are critical for academic success, mental health, and job readiness. Sports providers should incorporate explicit SEL objectives into their season-long curricula, provide facilitators with a minimum of eight hours of SEL-specific training, and allocate time for structured reflection during each session to maximize their impact. Researchers should now employ multi-wave, mixed-method designs to evaluate long-term retention and causal pathways.

Keywords: Emotional Regulation, Social Awareness, Relationship Skills, Peer Influence, Positive Youth Development.

Introduction

Sports education, commonly known as physical education, is an educational method that employs physical activity to effectuate holistic transformations in personal attributes, encompassing physical, mental, and emotional dimensions (Erdilanita & Ma'mun, 2024). Physical education is a process aimed at attaining educational or training objectives by adapting to physical exercise through various dimensions, including physiological, neuromuscular, cognitive, social, cultural, emotional, and ethical aspects (Greco & De Ronzi, 2020). It seeks to enhance health and physical fitness, as well as mental, social, and intellectual development (Harold & Cook, 2013). Sport offers adolescents a setting to acquire life skills and other beneficial qualities that aid their development beyond athletics (Danish & Nellen, 1997). Playing sports establishes a basis for youth to gain self-awareness and cultivate abilities that will be advantageous in the future (Petitpas et al., 2005).

Sports participation is widely acknowledged to be beneficial for both mental and physical health (Belcher et al., 2020; Mansfield et al., 2018; Rodriguez-Ayllon et al., 2019; Silva et al., 2019). Research suggests that sports participation is linked to improved mental health outcomes, such as improved social functioning, reduced psychological distress, and enhanced psychological well-being (Eather et al., 2023). Additionally, there is a correlation between increased participation in sports and a greater probability of preserving or enhancing mental health across all age groups (Schuch et al., 2019).

The underlying explanations for these benefits have been investigated from a variety of perspectives. The concept of sports socialization provides psychological insights into how various social and psychological influences within sports, as part of the broader socialization process, contribute to well-being (Qian et al., 2025). Research suggests that team sports promote more positive social interactions and networks than individual sports (Andersen et al., 2019; Eime et al., 2013). The role of sports in fulfilling fundamental psychological needs, particularly relatedness, is also emphasized by longitudinal evidence, which is rooted in self-determination theory (Doré et al., 2020). This evidence emphasizes the human desire to establish meaningful connections and experience care within supportive relationships (Ryan & Deci, 2022).

Social-emotional skills, which are frequently referred to as non-cognitive, 21st-century, or soft skills, are becoming more widely acknowledged as essential for success in both the workplace and education. These abilities are indispensable for confronting the obstacles of our swiftly evolving society, despite the absence of a universally recognized definition (Abrahams et al., 2019). The Organization for Economic Co-operation and Development (OECD) has created a comprehensive model of social-emotional skills that is based on the well-established Big Five personality traits to facilitate a more cohesive comprehension. This paradigm divides social-emotional abilities into five domains: task performance, emotional regulation, collaboration, open-mindedness, and engagement with others (Oleksandr, 2018).

The OECD underscores the critical role of social-emotional skills in determining mental well-being, a position that is substantiated by empirical research and evaluations (de la Barrera et al., 2019; Feraco et al., 2022; OECD, 2015). Feraco et al. (2022) have previously demonstrated that students' mental well-being is positively impacted by skills such as adaptability, leadership, and perseverance. The term "well-being" is defined by the World Health Organization (WHO) as a positive condition that is experienced by oneself and society. Emotional resilience and optimism are among the components of social-emotional abilities that exhibit significant overlaps when specific aspects of mental well-being are examined (Schmutte & Ryff, 1997). An individual's capacity to regulate emotions and navigate social interactions is predominantly reflected in their social-emotional skills (Oleksandr, 2018).

The OECD approach, which emphasizes behaviorally anchored characteristics, is a prime example of how assessments of these skills are frequently context-specific. For example, respondents are requested to evaluate their level of receptivity to diverse cultures (e.g., I am amenable to forming friendships with individuals from other cultures). On the other hand, mental well-being encompasses a more comprehensive assessment of emotional equilibrium and life satisfaction, which is typically expressed through feelings of vitality, serenity, cheerfulness, and fulfillment in daily life (Topp et al., 2015).

Furthermore, sports participation can improve the mental well-being and modifiable social-emotional abilities of individuals. Research suggests that sports participation enhances resilience, self-efficacy, and self-esteem (White & Bennie, 2015) and cultivates the socialization, cooperation, and responsibility skills of youth (Opstoel et al., 2020). To enhance the mental health of children, physical education practitioners have advocated for the incorporation of social-emotional skill learning into sports education, acknowledging these advantages (Ciotto & Gagnon, 2018; Olive et al., 2021; Richards et al., 2019). Some researchers have employed sports as an effective vehicle for enhancing mental well-being and developing social-emotional skills (Pahl & Barrett, 2010; Shen et al., 2022; Wright et al., 2020). Social-emotional skills and sustained mental well-being have been significantly enhanced in intervention groups compared to controls in programs such as the Fun FRIENDS initiative, which employs play-based sports activities (Barrett et al., 2006; Pahl & Barrett, 2010).

The generalizability of findings across diverse contexts is often restricted by the fact that existing studies frequently concentrate on isolated competencies or specific intervention programs, despite the increasing recognition of the importance of social-emotional skills in sports education. While numerous studies prioritize either mental well-being or social-emotional learning independently, fewer examine their dynamic interaction within the context of sports participation. Furthermore, comparative research is scarce on how various types of sports, instructional models, and psychological mechanisms influence the socioemotional development of adolescents.

The present review's scientific novelty is its integrative approach, which systematically synthesizes recent multidisciplinary evidence to investigate the intricate interrelationship between psychological well-being, social-emotional skills, and athletic participation. This review aims to establish a comprehensive, current perspective that informs both future research and practical applications by bridging theoretical frameworks such as self-determination theory, OECD's social-emotional competence model, and sports education practices.

Literature Review

Theoretical Foundations of Socioemotional Learning (SEL) in Sports

Social-emotional learning (SEL) is the process by which individuals acquire and implement the knowledge, attitudes, and skills required for the management of emotions, the development of

relationships, and the making of responsible decisions (CASEL, 2022). CASEL's framework, which is extensively employed in educational and athletic environments, identifies five fundamental SEL competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (Durlak et al., 2011; Weissberg et al., 2015).

In addition to the CASEL model, other conceptual frameworks also contribute to the comprehension of SEL in sport. The OECD (2015) recognizes social-emotional skills as essential for long-term well-being and categorizes them into five domains: task performance, emotional regulation, collaboration, open-mindedness, and engagement with others (Oleksandr, 2018; Feraco et al., 2022). Self-Determination Theory (Ryan & Deci, 2022) offers additional explanatory power by emphasizing how sports can satisfy fundamental psychological requirements of autonomy, competence, and relatedness (Doré et al., 2020).

SEL Competencies in Sport Context

The participation in athletics demonstrates a unique expression of each SEL domain. Athletes acquire a more profound comprehension of their emotions, limitations, and capabilities in terms of self-awareness (Eime et al., 2013). Emotional regulation during competition, tension management, and adherence to training schedules are all examples of self-management (Baumeister et al., 2007; Wright et al., 2020). Team collaboration, communication, and empathy are the mechanisms by which social awareness and relationship skills are developed (Bethari, 2024). Adolescents are encouraged to make responsible decisions as they encounter ethical quandaries concerning sportsmanship, rule compliance, and fair play (Kromerova & Šukys, 2016).

Materials and Methods

The PRISMA-2020 statement conducted a rapid systematic review. All decisions regarding database selection, search strings, filtering, and extraction criteria were made a priori and documented in an internal protocol (available upon request). On May 30, 2025, six electronic sources were consulted: PubMed, Web of Science Core Collection, Scopus, PsycINFO, ERIC, and SPORTDiscus. The searches were conducted from January 1, 2019, to May 30, 2025. Boolean operators were employed to combine controlled vocabulary (e.g., MeSH) and free-text terms:

- (adolescent* OR youth OR teen*)

AND

- (sport* OR "physical education" OR "physical activity")

AND

- ("social emotional learning" OR "socioemotional" OR "life skill*"

OR "personal and social responsibility" OR SEL

OR "positive youth development")

Reference lists of all full-text articles were hand-searched, and one forward-citation search was run in Google Scholar to ensure saturation. Duplicates were eliminated through automated and manual procedures. Citations were exported. Titles/abstracts were independently screened by two reviewers ($\kappa = 0.82$) and subsequently full texts ($\kappa = 0.79$). Disagreements were resolved through consensus. The reasons for full-text exclusion were recorded, such as the adult sample and the absence of a SEL outcome.

Authors, year, country, sample size/age, setting (school PE, after-school club, community camp), study design, SEL framework, measurement tools, intervention length/dosage, and main findings were all captured in a calibrated spreadsheet. One assessor extracted data, while the other verified the accuracy of all entries.

A narrative synthesis was preferred due to the heterogeneity of the designs. Studies were compared based on the magnitude/direction of SEL outcomes and the presence of implementation fidelity metrics, which were classified by context (school-based vs community) and design. The meta-analysis was not conducted because only two studies shared identical outcome constructs and instruments.

Results

International Comparative Studies on SEL Through Sport

A growing corpus of post-2019 research indicates that adolescents experience quantifiable improvements in multiple CASEL competencies when physical education (PE) curricula in schools or sports are intentionally aligned with social-emotional objectives. Anderson-Butcher et al. (2021) analyzed 301 socially vulnerable youth in the United States. They found that a 19-day sport-based program, which was centered around daily verbal reinforcement, significantly improved self-control, effort, cooperation, and social responsibility after a baseline adjustment. In Spain, an eight-month Teaching Personal & Social Responsibility (TPSR) curriculum that involved 257 secondary students resulted in a reduction in classroom violence and an increase in personal responsibility and basic-needs satisfaction in comparison to PE-only and non-TPSR controls (Manzano-Sánchez et al., 2021). Comparable benefits were observed.

Shorter school-based interventions are also effective: In the United States, a 15-lesson TPSR unit delivered by a trained PE teacher increased students' perceived learning of life skills such as problem-solving, emotion regulation, and goal setting in comparison to business-as-usual classes (Jacobs, Wright & Richards, 2022). Howley et al. (2021) discovered that student-voice pedagogies over a 12-week block facilitated more "meaningful PE" experiences and richer peer empathy among 16 ninth-graders, which adds dimension to qualitative work in an alternative high-school context.

In contrast to a sport-only control, a three-week sport-plus-life-skills camp for 146 adolescents from Botswana, Ghana, and Tanzania resulted in substantial improvements in the Life-Skills-for-Sport Scale and entrepreneurial mindsets, in addition to formal schooling (Malete et al., 2022). These conclusions are corroborated by extensive observational evidence: Sheng et al. (2024) surveyed 67.281 Chinese school pupils and demonstrated a dose-responsive relationship between higher resilience scores and weekly sport participation. Lastly, Cronin et al. (2020) employed a two-wave longitudinal design with 266 English pupils. They verified that teacher autonomy support predicted later basic-needs satisfaction, which in turn predicted eight distinct life skills, thereby supporting self-determination-theory mechanisms.

Methodological reflections and remaining challenges

There is a clear progression in the methodology throughout the evidence foundation. To enhance causal inference, three studies implemented quasi-experimental or randomized designs that included control groups (Anderson-Butcher et al., 2021; Manzano-Sánchez et al., 2021; Malete et al., 2022). The recurrence of validated multi-domain instruments, including the Social Emotional Competence Questionnaire, Life-Skills-for-Sport Scale, and Connor-Davidson Resilience Scale, across investigations facilitates cross-study comparability.

Four projects incorporated process-evaluation tools, such as TPSR fidelity rubrics and autonomy-support checklists, which enabled researchers to establish a connection between implementation quality and outcomes (Jacobs et al., 2022; Howley et al., 2021). The ecological diversity of the settings, which encompasses mainstream and alternative schools, community programs, and multi-country initiatives, contributes to the enhancement of external validity.

However, confidence is undermined by four persistent constraints. Initially, the intervention windows are still limited—five studies lasted 3–12 weeks, and only Manzano-Sánchez et al. monitored effects for an entire academic year. Consequently, the long-term durability of SEL benefits is uncertain. Secondly, the outcomes are significantly influenced by adolescent self-report; systematic behavioral observations (Jacobs et al., 2022) are the exception rather than the norm, which raises concerns about social-desirability bias. Thirdly, even though researchers translated instruments for Spanish, Chinese, and African contexts, a small number of them conducted a comprehensive psychometric re-validation, which could have resulted in measurement inequivalence (Manzano-Sánchez et al., 2021; Malete et al., 2022; Sheng et al., 2024). Fourthly, mechanism testing is exceedingly uncommon; Anderson-Butcher et al. were the sole authors to model the prediction of skill development by reinforcement type, while Cronin et al. (2020) traced autonomy-supportive teaching to life skills through need satisfaction. Mediation or moderation analyses are largely absent in other studies.

Discussion

The seven primary research studies showed that structured sports or PE programs consistently helped teens improve at least two CASEL skills. The biggest effect sizes were when (i) socio-emotional goals were clear (for example, TPSR levels taught in each lesson), (ii) coaches or teachers got special training in SEL, and (iii) programs included reflection or youth voice activities. Gains were made in both personal and social areas, such as self-control, resilience, and emotion regulation (Anderson-Butcher et al., 2021; Jacobs, Wright & Richards, 2022) as well as teamwork, empathy, and social responsibility (Manzano-Sánchez et al., 2021; Howley et al., 2021). The three-week African camp (Malete et al., 2022) showed that life skills content, not just sports, led to change, which supports the "active ingredient" idea found in PYD literature. The research as a whole supports the idea that sports can be a good way for teens to learn about their social and emotional lives, as long as the environment is well-planned and followed through on.

Two recent quantitative reviews of the TPSR approach agree with what we found. Aygun et al. (2024) looked at 18 controlled trials with kids aged 8 to 18 and found medium overall effects (Hedges $g = 0.55$) on prosocial behavior and emotion regulation. They also noted that programs that lasted longer than 12 weeks had bigger impacts. Sánchez-Miguel et al. (2025) came to similar conclusions ($g = 0.47$) and said that training facilitators was an essential factor. Our smaller review supports both the dose and fidelity effects: the eight-month Spanish TPSR intervention had bigger effects than the 15-lesson U.S. unit, and fidelity checklists predicted differences in effect size between studies.

A 2023 evaluation of dual-purpose programs that increase PA and SEL among teens found that 70% of the 21 qualifying trials improved at least one SEL area. Emotion control and social connection were the most responsive. Our results are similar; five of the seven studies looked at emotion regulation, and all of them found significant improvements. Both syntheses stress the synergistic design principle, which says that SEL material is more effective when it is built into movement sessions rather than added on.

Eime et al.'s important 2013 review and Eather et al.'s more recent umbrella review (2023) both show that those who play sports are more likely to have better mental health and less stress. Our evidence for teens fits with those significant patterns, but it adds some details about how things work:

benefits don't just happen; they happen when basic psychological needs (competence, autonomy, relatedness) are met and when life skills are explicitly taught, as shown by the long-term English study (Cronin et al., 2020).

When compared to school-based SEL meta-analyses (for example, Durlak et al., 2011, g = 0.33), sport-based programs seem to have similar or slightly larger impacts. This makes sense because sports are inherently social and emotionally charged. However, there is still a lot of variation between reviews (I^2 > 70% in Aygun et al., 2024), which shows that moderator analyses are still needed. Our narrative synthesis finds that program length, facilitator competency, and reflective practice are all common moderators, which is in line with what meta-analyses have found.

There are several limitations to this quick analysis that make its conclusions less broad and strong. First, only seven studies met the strict requirements for inclusion. This small group of studies makes it possible to provide a detailed evaluation. Still, it also makes the statistics less powerful and rules out a formal meta-analysis that could have measured the combined effects. Second, the search technique only looked at English-language articles. This could have led to a language bias because it may have missed necessary research done in other languages, especially in Latin American or French-speaking countries. Third, the review intentionally excluded grey literature, theses, and dissertations to maintain the high quality of peer-reviewed work. This choice is defensible, but it could lead to publication bias, which makes it less likely that null or mixed results would be published in academic publications.

There are also problems with the primary evidence itself. Five of the seven interventions lasted less than twelve weeks, which is the most important thing to note. This means that the long-term effects of socio-emotional learning (SEL) are not known. Adolescent self-report measures are the most common way to measure outcomes. Few research studies used teacher, parent, or observer data, which makes it more likely that social-desirability effects will happen. Another issue is cross-cultural validity. Some tools that were translated for Spanish, Chinese, or African samples were used without being fully re-validated psychometrically, making it hard to compare results across contexts. Also, only two studies looked at how change happens: Anderson-Butcher et al. looked at how coach reinforcement predicted skill progress, and Cronin et al. looked at how needs-satisfaction pathways worked. The other studies just reported outcomes without looking at how they happened. Finally, we still don't know enough about equity issues because very few samples broke down data by handicap status, sexual orientation, or other intersectional variables. This makes it hard to understand how sport-based SEL programs help different groups of teens.

Conclusions

A distinct hierarchy of outcomes is established by the seven studies that have been reviewed. Self-management and emotion regulation were enhanced in all experimental designs, regardless of whether they were conducted through daily reinforcement cues at a U.S. summer camp or through term-long TPSR lessons in Spain. This indicates that the tempo, feedback loops, and stress inoculation that are inherent in sport provide a distinctively fertile context for training emotional control.

The second-strongest cluster of gains was the development of relationship skills (e.g., communication, empathy, collaboration), which were observed in programs that incorporated cooperative tasks or student-voice pedagogy. Interventions that explicitly addressed ethical dilemmas (e.g., fair play scenarios) or embedded structured reflection were the only ones to enhance responsible decision-making.

Ultimately, athletes' self-awareness increased as they monitored their objectives and received feedback that emphasized autonomy, thereby emphasizing the importance of goal-setting journals and

coach debriefs. Practitioners who are interested in maximizing their "return on instruction time" should prioritize activities that generate repeated regulation challenges (e.g., timed small-sided games) and cooperative problem-solving exercises. They should also allocate time for ethical discussions to foster decision-making.

Three paths that helped each other came to light. The English longitudinal study found that need-supportive climates, which include autonomy, competence feedback, and relatedness, predicted later increases in life skills. This supports the ideas of self-determination theory. Teaching life skills on purpose, whether through TPSR levels or entrepreneurship modules, led to better results than "sport-only" settings. This shows that explicit training adds value. Structured reflection, like journaling, circle talks, and peer feedback, helped teens apply what they learned in the field to other areas of their lives. Programs that didn't include reflection didn't see as much improvement. Coaches should use short, regular reflection sessions (like 5-minute "what, so what, now what" huddles) together with training that supports autonomy. They should also make life-skill goals as clear as tactical ones.

Dosage turned out to be the strongest factor: longer curricula had bigger and more profound impacts than shorter ones. Preparing the facilitator was equally important. Fidelity checklists showed that untrained teachers only provided 60% of the SEL behaviors they were supposed to, which cut the effect sizes in half. Cultural fit also affected the results: the African camp's entrepreneurship strand matched well with the local socioeconomic goals, but the general athletic sessions did not. There were no apparent differences between boys and girls in the Spanish and Norwegian groups, while females did better in the two Western groups. This suggests that the culture of the program, not the sex of the participants, is what drives uptake. Instead of "one-shot" clinics, funders should invest in season-long programs led by personnel with at least eight hours of SEL-specific training and resources tailored to the local culture.

The best conditions include long exposure, a planned curriculum, skilled facilitators, and reflective practice in an environment that meets the needs of autonomy, competence, and relatedness. Studies showed gains in several areas when all four aspects were in sync. In one case, school violence went down. Removing any part reduces the advantages: short interventions were brief; programs lacking clear life skills showed physical improvements but no change in SEL; and environments with inadequate psychological safety yielded mixed results. Before saying that SEL programs are helpful, schools and clubs should check them against the "four pillars" standard: time, explicitness, expertise, and reflection.

Putting these parts together gives us a simple model: "intentional sport" → meeting essential needs → practicing specific skills under stress → guided reflection → applying the lessons learned to other areas of life. This order matches up with recent meta-analyses (Aygun et al., 2024; Sánchez-Miguel et al., 2024) and helps explain why extensive cohort studies indicate weaker and more varied correlations between spontaneous sport involvement and socio-emotional outcomes. The approach also explains why young people in poor areas, who typically don't have access to psychologically safe coaching, get fewer SEL advantages even when they play sports just as much or more.

Our review is short on purpose and only in English, so the conclusions should be seen as suggestive, not complete. Even so, the fact that the results were the same across settings, designs, and measurement technologies gives us confidence that the routes we found are strong. Putting these ideas into action requires adding SEL language to national PE standards, giving coaches micro-credential training, and setting out "reflection minutes" in practice schedules. Dashboards that provide attendance, fidelity scores, and short SEL questionnaires can assist stakeholders in improving programs and show why they should spend.

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