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Key Features of the Youth Sport Environment: A Scoping Review

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Abstract

Throughout life, individuals navigate a variety of sporting environments, with youth sport contexts for adolescents aged 12–16 being particularly influential in determining whether they continue their engagement in sport. Despite the pivotal influence of these environments on adolescents' sustained participation in sport, an overview of the research literature examining youth sport environments (YSE) appears to be lacking. This study summarizes the state of the art of research on YSEs, proposes a definition of quality youth sport environments (QYSE), and synthesizes current knowledge about the essential features that constitute such settings. Following the PRISMA and Joanna Briggs Institute guidelines for scoping reviews, a systematic search across five databases was conducted in July 2025, resulting in 2,785 studies, of which only four articles were included for data extraction. Findings were summarized using an extraction table. All studies were qualitative and conducted in Northern Europe where one also included quantitative data and all focusing on various aspects of the youth sport environment. YSE were characterised by three key features: the foregrounding of social factors, the accessibility of central training facilities, coaches pivotal role in addressing adolescents' social and emotional needs. We propose the understanding of a QYSE as one that promotes the youth athletes' athletic and personal development, their long-term participation and motivation, and their wellbeing. It is a complex, adaptive system, where social and structural factors work in concert to meet the developmental needs of 12–16-year-olds. While the literature allows us to cautiously suggest features of QYSE, this area of research is limited, highlighting the need for further studies to develop a more comprehensive understanding of what QYSE look like.

Keywords: adolescent, framework, coach, facilities, social setting, holistic ecological approach, children, culture, mental health, health

Introduction

Organized sport plays a central role in the lives of many young adolescents globally (Feltz, 2001). Participation tends to peak between the ages of 10 and 12, after which a notable decline is observed – especially between ages 14 and 16 (Black et al., 2022; Emmonds et al., 2024). This global engagement positions organized sport environments as a key developmental context for youth. However, the dropout rates during adolescence highlight a persistent challenge for the field (Emmonds et al., 2024).

Adolescence is a critical period of identity formation, cognitive maturation, and social repositioning (Brown et al., 2017; Eime et al., 2013; Hopkins et al., 2022). Peer relationships become more influential, independence from parents increases, and coaches often assume greater significance in young athletes' sporting lives (Gould & Nalepa, 2016). This stage is also associated with increased risk-taking behaviours (Schnell et al., 2014), elevating the ethical responsibilities of coaches and sport environments. At the same time, sport participation can foster personal development, such as friendship, compassion, and prosocial behaviour, and is closely tied to self-concept (Eime et al., 2013; Li & Shao et al., 2022). Adolescents, however, pursue sport for diverse purposes, and youth sport environments (YSE) must be able to accommodate diverse aims among participants, including, fun, friendship, engagement and preparation for later athletic performance (Faber et al., 2023).

Extensive research over the past decades has explored the psychological and social dimensions of youth sports. Key areas of focus include frameworks of positive youth development (PYD) (Holt et al., 2017), life skills training (Gould & Carson, 2008), and studies on task-oriented motivational climates (Harwood et al., 2015). Collectively, these strands each contribute to a broad understanding of youth sport and can be seen as integral components of the youth sport system (Dorsch et al., 2022). For instance, Holt and colleagues (2017) find that strong relationships between youth and adults (e.g., program leaders, coaches, teachers), strong peer relationships, and parental support could lead to the creation of a PYD climate, including opportunities for peer leadership and feelings of belonging to a wider community. Nielsen and colleagues (2024) find that an empowering environment (i.e., autonomous motivation and the satisfaction of basic psychological needs) shaped by coaches plays a critical role in sustaining youth engagement in sport in Scandinavia. In contrast, a disempowering

climate marked by controlled motivation and need frustration increased the risk of dropout.

Several frameworks have attempted to conceptualize how sport environments shape development. Dorsch et al. (2022) introduced a model of the youth sport system, describing it as a dynamic network of individuals (e.g., parents, peers, coaches) and contexts (e.g., clubs, communities) that influence athlete' experiences. Likewise, a Delphi study by Vella et al. (2025) identified a list of 82 indicators of quality youth sport programming grouped in higher order categories: "(1) Equity, diversity, and inclusion; (2) Inclusion and support of adult leaders and personnel; (3) A safe and positive program climate; (4) Focus on youth enjoyment and experience; (5) Deliberate and appropriate instructional design; (6) Appropriate organizational structure; and (7) Develops holistic youth outcomes" (p. 11). While their study identify indicators of quality youth sport programming, the broad age range from 5 to 18 years makes it difficult to account for the distinct developmental needs of specific age groups. This highlights the need to examine youth sport environments with greater sensitivity to developmental stages.

While some frameworks and studies regard youth sport as a phenomenon that is not specifically defined in age (e.g., Vella et al., 2025) other frameworks suggest we should focus on specific age groups within youth sport. The Developmental Model of Sport Participation (Côté et al., 2007) divides youth sport into the sampling years (6–12) highlighting enjoyment, play, and the development of broad athletic experiences; the specializing years (13–15) involving a focus on fewer sports with increased training demands, while still balancing deliberate practice and play; and the investment years (16+ years) which are characterized by commitment to a single sport, with intensive training and high-performance demands – provided they choose to specialize in a talent-focused context. Further, developmental psychology highlights how the needs of young athletes evolve across adolescence (Brown et al., 2017; Eime et al., 2013; Hopkins et al., 2022). The specializing years bridges the sampling and investment years, making it a particularly critical focus for research.

The Youth Sport Environment

Within sport psychology, the Holistic Ecological Approach (HEA), inspired by the ecological psychology of human development (Bronfenbrenner, 1979), has directed research attention from the individual athlete to the

environment in which they develop. Within HEA, "ecological" refers to a focus on the athletes' environment as influential for their development, whereas "holistic" reflects an understanding of the environment as a complex and dynamic system consisting of multiple interrelated settings, levels, and domains (Henriksen & Stambulova, 2023). This approach has provided a useful framework for investigating athletic talent development environments and suggested functional and dysfunctional features of successful environments for athletes aged 16 to 19 in talent-focused pathways (Hauser et al., 2022; Storm et al., 2021). This perspective allows for a comprehensive understanding of how multiple contextual factors interact, which may not be fully captured by individual-centred approaches in the sport psychology literature. In this present study, HEA serves a guiding theoretical framework for understanding environments. Inspired by this change in perspective, we propose a shift in youth sport research and practice toward an emphasis on empirical investigation of the environment and these investigations should be specific to generic stages of development. Adolescents aged 12 to 16 differ markedly from older athletes. They are at an earlier stage of their biological and cognitive development, more varied in social identity, and more diverse in their motivations for participation (Allen, 2001; Brown et al., 2017; Faber et al., 2023). Therefore, environments for this age group should be seen as distinct systems with their own purpose and structures.

Despite a growing body of research on youth sport participation, dropout, and positive youth development, there appears to be limited synthesized knowledge on youth sport environments, particularly for adolescents aged 12–16. Existing studies often focus on specific aspects rather than the environment as central object of investigation, which make it difficult to identify features that characterize high-quality youth sport environments. Therefore, there is a need to further map and integrate the existing literature in this area. To address this, we draw on HEA and propose a conceptualization of youth sport environments.

To support this shift, we suggest the following preliminary working definition of Youth Sport Environments (YSE): a dynamic system comprising (a) an adolescent's immediate surroundings at the micro-level, where their personal and sport development takes place, (b) the interrelations between sport and other life domains, and (c) the organizational culture of the sport club or team. At the macro-level, these settings are influenced by the broader societal and cultural context in which they are embedded.

Recognizing that some sport environments are better than others, we provide a working definition of a quality youth sport environment (QYSE) as one that promotes the youth athletes' athletic and personal development, their long term participation and motivation, and their wellbeing. This definition is broad and we expect future studies to qualify the idea and provide the basis for a more substantiated definition.

Using HEA as an analytical lens, this scoping review aims to map the research on youth sport environments for adolescents aged 12–16 and identify their characteristics in the existing literature. The specific research questions that guided the review are: (1) How has the youth sport environment for adolescents aged 12–16 been studied in the literature? (2) What key environmental features are identified across studies?

Methods

We chose a scoping review design due to its suitability for addressing broad and exploratory research questions. A scoping review allows for the inclusion of qualitative, quantitative, and mixed-method studies, thereby facilitating a comprehensive overview of the existing literature (Arksey & O'Malley, 2005; Peters et al., 2015; Pollock et al., 2023).

The methodological framework for this review was guided by current practice for scoping reviews (Arksey & O'Malley, 2005) and followed the PRISMA guidelines (Tricco, 2018). In line with Joanna Briggs Institute's recommendations, the review process involved several structured steps (Peters et al., 2015; Pollock et al., 2023): identifying the review's purpose and objectives; defining inclusion criteria; developing a strategy for literature selection; conducting the search; screening studies; extracting relevant data; analysing and synthesizing findings; and presenting results. Throughout the process, regular research team meetings ensured consistency and rigour.

Search Strategy

To inform the search strategy, we reviewed known studies, as well as scoping and systematic reviews within the field of youth sport. A preliminary search was carried out in November and December 2023 to identify relevant terminology and develop effective search terms. The final search strategy, including database selection, was developed in collaboration with

a university librarian. Boolean search terms were used to combine subject terms and synonyms, while proximity searching was applied to refine the population focus. The search was limited to studies that provided both an English-language abstract and full-text availability. Detailed eligibility criteria are presented in Table 1.

Table 1. *Eligibility criteria*

Inclusion criteria	*Exclusion criteria*
Articles published in peer-reviewed journals in English, using qualitative, quantitative, or mixed-methods designs relevant to the research question.	Book chapters, dissertations, grey literature, theoretical papers and reviews.
Empirical studies examining the whole sport environment for adolescents aged 12-16 years ord.	Empirical studies of the whole environment for populations outside the 12-16 age range.
Inclusion of relevant participants such as adolescents (12-16), coaches or parents.	Studies involving populations unrelated to youth sport (e.g., general school, pupils, musicians).

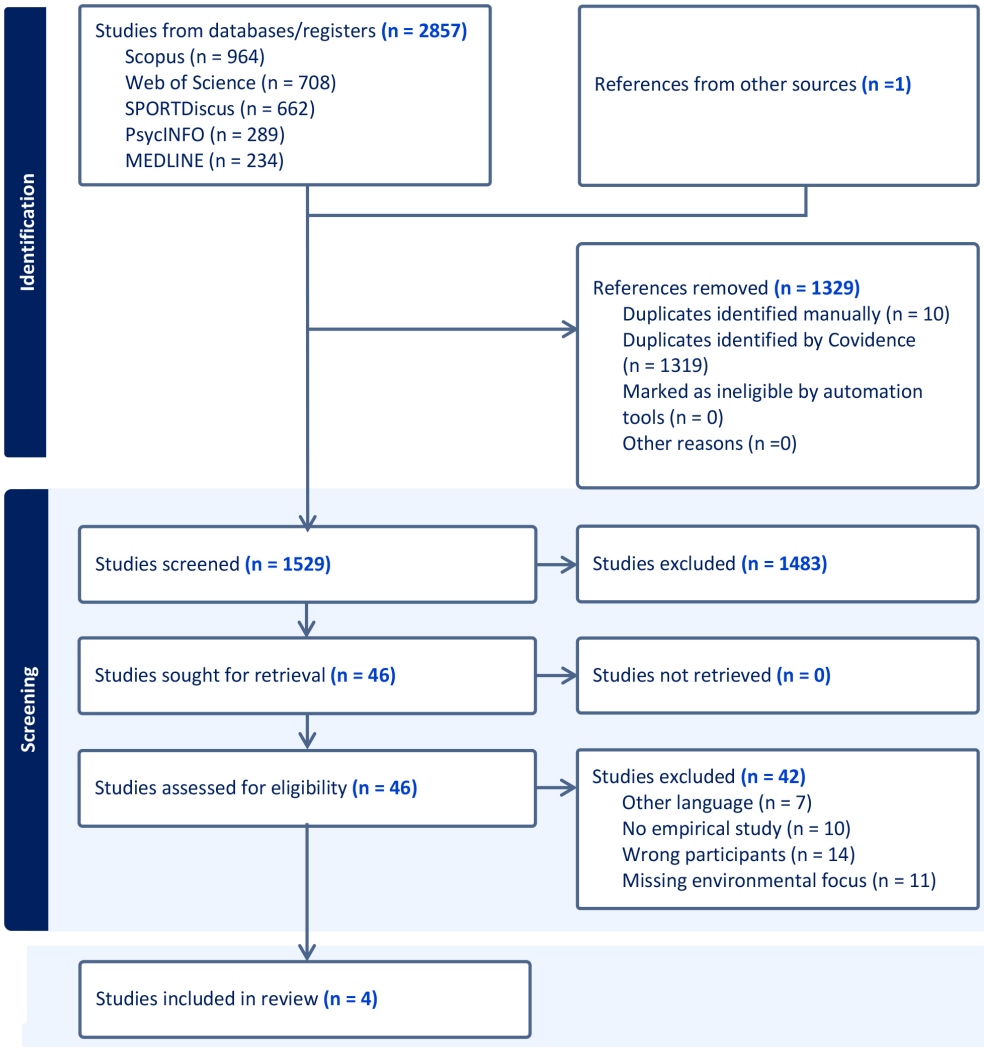
The search was conducted by the first author in July 2025 across five electronic databases: SPORTDiscus, Scopus, Web of Science, PsycINFO(Ovid) and MEDLINE(Ovid).The final search string used on July 9th 2025 was: (((environment* OR context* OR setting* OR ecological OR culture* OR cultural OR milieu* OR program*) adj4 sport) AND ((young OR kid OR kids OR adolescent* OR junior* or child* OR youth OR teen*) adj4 athlet*))

Selection Process

Study screening was conducted using Covidence (Covidence systematic review software, Veritas, Health Innovation, Melbourne, Australia). The initial database search yielded 2,857 records, with one additional article identified through other sources. The software automatically removed 1,319 duplicates, where 10 additional duplicates were removed by the researchers, resulting in 1,529 unique records for searching. Title and abstract screening were independently carried out by the first author and a trained research assistant. Any discrepancies were resolved in consultation with the last author. Of the screened studies, 1,483 were excluded as irrelevant, leaving 46 articles for full-text screening. The full text screening was conducted independently by the first author and the research assistant, using the predefined eligibility criteria. Disagreement was again

resolved through discussion with the last author. Reasons for exclusion at this stage were documented and are illustrated in Figure 1.

Figure 1. *Prisma Flow Chart*



Following this process, four studies met the inclusion criteria and were included in the final review (Erikstad et al., 2021; Knight et al., 2018; Kuokkanen et al., 2024; Rossing et al., 2022). In addition, a manual screening of reference lists of included studies were performed. The full selection process is detailed in Figure 1. Further information regarding excluded articles or specific decisions can be obtained upon request.

Data Extraction and Analysis

In line with recommendations from Arksey & O'Malley (2005) and Pollock et al. (2023), a structured data extraction form was developed to ensure consistency and transparency in the charting process. The form was informed by the extraction framework proposed by Pollock et al. (2023) and guided by HEA (Henriksen & Stambulova, 2023). The following variables were systematically extracted from each included article: (a) authors and year; (b) country in which the study was conducted; (c) theoretical approach and research methodology; (d) methods; (e) study purpose; (f) participants characteristics; (g) sports type or category (see table 2). Guided by HEA, the following categories were used to systematically extract data: (a) preconditions; (b) core processes and culture; (c) structure; (d) outcomes (see table 3). Preconditions described human, material and financial resources identified in the included studies. Core processes and culture describe the everyday activities within athletes' sporting and non-sporting domains, as well as the shared norms and values that shape and regulate beliefs and behaviour within the environment. Structure encompasses the components, roles, and relationships within the environment and how these are organised at both micro and macro levels. Outcomes describe how the environment evaluated its success.

Data extraction was conducted by the first author. In accordance with the guidelines by Tricco et al. (2018), the first and last author engaged in regular discussions throughout the extraction phase to ensure accuracy, resolve uncertainties, and enhance the consistency of the process. All relevant data were extracted from full-text articles.

Results

Four papers were included in the scoping review. That in itself is a finding, suggesting that research that specifically targets the youth sport environments as object of investigation is still in its infancy. The empirical findings are synthesised in three parts. First, we summarise the characteristics of the included studies, including methodological approaches and sample descriptions. Second, we examine how the environments were described across the studies. Finally, we identify three features that recurred across the included studies of youth sport environments: quality social interactions, appropriate training facilities, and contextually competent coaches.

Guided by HEA, the analysis was structured around four dimensions of the environment: (1) preconditions, (2) core processes and culture, (3) structure, and (4) outcomes. The identified key features is a synthesis of findings.

Research Design and Instruments

While individual aspects of the youth sport environment have been explored, the youth sport as an integrated unit is still underexplored. A total of only four studies met the inclusion criteria for this scoping review, see table 2 (overleaf). All included studies were published between 2018 and 2024, reflecting a recent research interest in youth sport environments for adolescents aged 12–16. The identified studies were conducted in Denmark, Finland, Norway, and the United Kingdom. Methodologically, all studies employed qualitative approaches (Erikstad et al., 2021; Knight et al., 2018; Kuokkanen et al., 2024; Rossing et al., 2022), while one study used a mixed-method approach also including quantitative data (Kuokkanen et al., 2024). In the qualitative studies, data were primarily collected through semi-structured interviews conducted at a single time point. Three studies also incorporated additional data sources such as training diaries, timeline methods, observations, and written records (Erikstad et al., 2021; Kuokkanen et al., 2024; Rossing et al., 2022). The mixed-method study used a questionnaire distributed to a single participant group. The results are presented thematically, based on extracted environmental features.

Sample Characteristics

All four studies had adolescents as participants, and three studies also included coaches and parents. Across the studies, a total of 93 participants were involved: 58 athletes, 9 coaches, 13 parents, and 13 categorized as other stakeholders. Rossing et al. (2022) did not specify the exact number of participating parents.

Sample sizes of each study varied, ranging from 10 to 41 participants. In terms of gender representation, two studies (Erikstad et al., 2021; Rossing et al., 2022) focused exclusively on sport environments for boys but included female stakeholders such as parents or coaches (e.g., mothers). Knight et al. (2018) examined environments that included both boys and girls and conducted interviews accordingly with both genders, while Kuok-

Table 2. *Characteristics of included studies*

Authors (years)	Country	Theoretical approach and Research Methodology	Methods	Purpose	Participants	Sport
Erikstad et al. (2021)	Norway	Phenomenological tradition underpinned by an epistemological constructivist perspective Qualitative case study	Semi-structured interviews, Timeline methodology, Training diaries and records	To explore how a successful Norwegian age-restricted team fostered participation, performance, and positive development through its activities, social dynamics, and environment	1 coach of the Bryne team, 4 players, 4 parents, 1 club representative	Soccer
Knight et al. (2018)	UK	Interpretivist paradigm underpinned by ontological relativism and epistemological constructionism Qualitative	Semi-structured interviews	To explore how social support networks facilitate dual careers in sport and education, and what optimizes this support	8 Athletes at 15-16 years completing their General Certificate of Secondary Education exams. 33 people athletes had defined as influential in their support network. Male and female	Tennis players, swimmers, field hockey players, soccer players
Kuokkanen et al. (2024)	Finland	Post-positivism Qualitative and Quantitative	Questionnaires, Semi-structured face to face interviews, Observation, Field notes Directed content analysis	Identify current and projected resources and barriers associated with adolescent athletes' DC in lower secondary school	16 adolescents, 7 male and 9 females, aged 13-15 years, from five different schools. Averaged 14,5 years of age	Swimming, figure skating, long-distance running, motorcross, aesthetic group gymnastic, floorball, ice hockey and soccer
Rossing et al. (2022)	Denmark	Neo-pragmatism Qualitative	Case study, focus group interviews, semi-structured interviews, observations	Investigate an unsuccessful superordinate grassroots club that had an exceptionally successful particular age group	U12 group of 33 players. Parents/guardians and three volunteer coaches	Soccer

kanen et al. (2024) collected questionnaire data and interviews from both boys and girls participating in sport.

The participants' competitive levels also varied. Kuokkanen et al. (2024) stated that all athletes were part of a sport school but did not elaborate on the specific sporting level. Knight et al. (2018) focused primarily on athletes at the international competitive level. In the football-specific study by Rossing et al. (2022), the team was described as among the strongest in its age group in Denmark. Erikstad et al. (2021) did not explicitly state the competitive level of the athletes but referred to several of them as among the most promising in their region.

Mapping Features of Youth Sport Environments

The four included studies investigated different types of youth sport environments, see table 3 (overleaf). Two studies investigated school-based sport settings (Knight et al., 2018; Kuokkanen et al., 2024) and two studies investigated club-based football settings (Erikstad et al., 2021; Rossing et al., 2022). Kuokkanen et al. (2024) and Knight et al. (2018) explored dual-career settings. In contrast, Erikstad et al. (2021) and Rossing et al. (2022) investigated club-based football environments, where training settings and organisational structure played a central role. Although all studies included school as part of the environment, only the school-based studies treated it as the primary environment. The small number of studies and their differences in purpose do not allow us to suggest a definitive list of features that characterize QYSEs. Still, our reading allows us to cautiously suggest three environmental features that were shared across the environments investigated in the four studies: (1) quality social interactions among peers and peer dynamics, (2) access to and use of appropriate training facilities, and (3) contextually competent coaches responsible for the well-functioning youth sport environment.

QUALITY SOCIAL INTERACTIONS

All four studies underscored the importance of social cohesion and a sense of belonging in sustaining athlete engagement. According to Kuokkanen et al. (2024), peer support and motivation across academic and athletic domains were critical to the development of a positive atmosphere. Erikstad et al. (2021) found that dividing players into subgroups based on motivation and ambition allowed for grater alignment with individual needs, contributing to retention – 35 out of 40 players remained active into adult-

Table 3. *Overview of investigated cases and youth sport environments*

Authors (year)	Preconditions	Core processes and culture	Structure	Outcomes
Erikstad et al. (2021)	• Most players remained with the team from ages 6-19. • UEFA licensed coaches (parents). • Coaching philosophy: "As many as possible, for as long as possible". • Access to football pitches and an indoor dome in Bryne. • Training progressed from 2-3 weekly sessions (ages 11-13) to either 2 or 4-5 sessions from ages 13-19.	• Individual development from age 11, with position-specific training from age 15. • Strong commitment to organized and peer-led football activities. • The head-coach engaged with every player, regardless of skill level. • Players chose between two training groups based on commitment. • Local matches from ages 6-12; regional tournaments from age 13.	• *Micro-level factors* • Friendships across skill levels, extending through school, training, and leisure time. • Bryne was described as a "soccer place" with role models. • The head coach served as an inclusive role model. • Supportive peer relationships. • *Macro-level factors* • None.	• 35 of 40 players played football into adulthood. • Players consistently enjoyed training and competition and reported no strong reasons to discontinue participation.
Knight et al. (2018)	• Dual career support network included tutors. • Shared beliefs and expectations regarding sport and education. • Logistical support from parents and teachers removed unnecessary barriers.	• Support to education helped athletes to maintain their motivation to achieve in both sport and education. • Support networks fostered a culture in which continuing education was an expectation. •	• *Micro-level factors* • Coaches, teachers and other stakeholders interacted to support athletes' dual career. • A dedicated dual career support team located within the microsystem. • *Macro-level factors* • None.	• Positive dual career experiences.
Kuokkanen et al. (2024)	• Access to physiotherapy and massage services during grades 8-9. • Support from teachers, peers, parents and coaches. • Parents covered the costs of training and competition. • Demanding training schedules and structural constraints contributed to physical exhaustion.	• An adapted school curriculum helped balance school and sport. • From grades 8-9 enjoyment and friendships became more important, while focus on sporting excellence declined.	• *Micro-level factors* • Young athletes interacted across sport and school, creating an integrated dual career environment. • *Macro-level factors* • None.	• Developing dual career competencies. • Friendships developed through sport.
Rossing et al. (2022)	• School and football club were nearby, with many players and coaches living locally. • Located in an affluent area, and many parents/guardians had higher socioeconomic status. • Provided facilities and equipment.	• Friendly and inclusive atmosphere. • High player autonomy and self-organized football. • The coach worked with a "development first concept". • A and B teams had different training foci; while the age group shared social activities.	• *Micro-level factors* • Rich connections. • Supportive connections between all players in the age group. • *Macro-level factors* • None. •	• Players had consistent membership over a long period of time. • Players experienced a sense of belonging to their age group. • Sporting success.

hood. Similarly, Rossing et al. (2022) described a culture of mutual respect and a flat hierarchy that fostered community across the age group. Adolescents experienced belonging not just to their immediate team but to the broader collective resulting in participation for a long period of time. Knight et al. (2018) highlighted that a microsystem with reliable support within the adolescents' networks is essential for managing the challenges of balancing a dual career. Social connectedness thus appeared to be part of a high-quality youth sport environment.

APPROPRIATE TRAINING FACILITIES

In the club settings studied by Erikstad et al. (2021) and Rossing et al. (2022), proximity and access to training facilities were found to be important structural determinants. Centrally located facilities allowed adolescents to use them on their own free initiative during leisure time and weekends, supporting informal and self-directed engagement with sport. This level of access contributed to environments where sport was seen as both fun and self-initiated. However, both studies also noted a shift in the focus of the environment from recreational to performance- and development-oriented climate over time. This transition shifted the environment's character from emphasizing play, fun, and development to focusing more on performance, raising questions about how to balance enjoyment and competitiveness in long-term engagement.

CONTEXTUALLY COMPETENT COACHES

The coach was a central figure in the environment in all four studies. In the club-based study by Erikstad et al. (2021), the coach was described as a longstanding and knowledgeable figure with a formal education in high-level sport and therefore carrying a central role in the environment. Similarly, Knight et al. (2018) showed how coaches shaped dual-career cultures by helping adolescents balance sport and school, thereby normalising and supporting a dual career. In Kuokkanen et al. (2024), the coach's supportive role in prioritizing schoolwork was also an important factor in the environment. However, the coach could also contribute to negative effects if adolescents experienced excessive expectations and demands from them.

This implied a need for coaches to possess not only technical skills but also contextual understanding and relational competences. Across studies, the coach was consistently positioned in a role of facilitating the culture of the environment.

Discussion

The Overall State of Research Field

With only four identified studies, the current body of literature suggests that this is a narrow field with considerable potential for further development. The limited amount of research can only indicate overarching patterns rather than provide firm conclusions. Moreover, as all four studies were conducted in Northern Europe, it is reasonable to assume that the findings primarily reflect a Northern European cultural context and may not be representative of youth sport environments in other parts of the world.

Both the Developmental Model of Sport Participation (Côté et al., 2007) and developmental psychology (Brown et al., 2017; Eime et al., 2013; Hopkins et al., 2022) emphasize that youth aged 12–16 should be considered a specific developmental stage in context of sport, and that this age group has specific inherent cognitive and athletic developmental needs. This allows us to suggest that sport environments designed for other age groups may not adequately support this age group. Therefore, future research should target environments that cater to the specific age group/developmental stage, preferably investigating different types of environments (e.g., club or school-based) and using in-depth analyses of the environment, to generate a deeper understanding of the features adolescents themselves perceive to be important. Approaches may be drawn from research on talent development environments (Henriksen & Stambulova., 2023) and dual career environments (Storm et al., 2021), which over the past three decades have established a solid foundation for the investigation of the environments for talented and/or dual career athletes aged 16–19.

In their selection and evaluation of environments, the reviewed studies largely emphasized the talent pathway and high-performance outcomes. This narrow focus limits the broader understanding of youth sport environments, particularly given that adolescents may participate in sport for a wide range of reasons beyond performance (Faber et al., 2023). We believe our suggested working definition of a QYSE – as one that promotes athletic and personal development, long term participation and motivation, and wellbeing – can serve as a basis for selecting and evaluating youth sport environments in future research.

Toward Identifying Features of Quality Youth Sport Environments

This scoping review allowed us to cautiously suggest three interrelated features of quality YSEs for adolescents aged 12–16. We say cautiously because the low number of studies alongside their different foci warrants caution. Still, across the four included studies, three key elements emerged: quality social interactions, appropriate training facilities, and contextually competent coaches. Together, these features seem to characterize environments, in which adolescents experience support, belonging, and opportunities for both athletic and personal development. The results suggest an interplay between relational, social, and structural components that address the developmental needs of early adolescents; however, there is no doubt that the knowledge base needs to be expanded.

The PYD climate research acknowledges the social setting – relationships with and between adults, peers, and parents – that enables youth to gain experiences that will contribute to PYD outcomes (e.g., positive self-perceptions, academic benefits, teamwork, fundamental movement skills) (Holt et al., 2017). The four studies identified in this scoping review demonstrate how processes, structure and climate are interrelated elements of the environment that contribute to its quality. Holt and colleagues (2017) suggested that some of the features of a task-oriented motivational climate may, in practice, facilitate the development of a PYD climate (e.g., focusing on self-referenced goals and mastery may be a feature of strong relationships between youth and adult program leaders and coaches). Likewise, we suggest that features of PYD climate and/or empowering motivational climate may be essential features of QYSE; however future research of *the environment as central object of investigation* is needed to better understand the nature of YSE.

Quality social interactions emerged as particularly central to QYSEs. Supportive relationships with peers, family, and dedicated dual-career support structures, were highlighted as enabling an active lifestyle and facilitating balance between sport and other life domains (Erikstad et al., 2021; Knight et al., 2018; Kuokkanen et al., 2024; Rossing et al., 2022). These findings indicate that relational support in all domains of the adolescents' lives can be considered an essential feature of quality environments, underscoring the importance of designing environments that recognize the adolescent as embedded in multiple social contexts. Appropriate training facilities with accessibility and proximity emerged as a feature of QYSEs for this age group. Given the age of the adolescents, convenient and appropriate facilities may play a particularly important role in enabling sus-

tained participation in organized sport. Finally, contextually competent coaches also stood out across the included studies, suggesting that in the 12–16 age group, coaches are influential not only in the adolescents' lives but in building good environments.

Taken together, the review highlights that QYSEs are best understood as a complex, adaptive system, where social and structural factors work in concert to meet the developmental needs of 12–16 year-olds. Despite these indications, the current evidence base is not sufficient to establish definitive features of quality youth sport environments. Rather, the present scoping review suggests that further empirical research of the YSE is needed to substantiate an evidence-based approach to quality youth sport environments in sport.

Limitations

Limitations to this scoping review should be acknowledged. First, limiting the search to English-language publications may have introduced language bias and excluded relevant studies published in other languages. Second, no formal quality appraisal of the included studies was conducted, which restricts the ability to evaluate the robustness of the available evidence. Third, the working definition proposed is informed by a small number of studies, reflecting the limited empirical foundation currently available. Consequently, this definition should be considered preliminary and applied with caution, as other critical dimensions of youth sport environments may remain unexamined due to the initial state of the research area.

Conclusion

Youth sport environment for athletes aged 12–16 should be investigated as a distinct phenomenon, drawing on studies of other types of athletic environments but recognizing the specific psychosocial needs of the age group. We suggest that YSEs be studied as dynamic systems that comprise micro-level settings, interrelations between sport and other life domains, the organizational culture of the sport club or team and macro-level influences. The present scoping review identified only a small number of studies – four in total – that made the youth sport environment the central object of investigation, and the findings of this scoping review should be understood within the context of this limited evidence base.

Continued research in this area is essential to build a robust and nuanced understanding of the features that make up QYSEs, an environment that promotes personal and athletic development, long term participation, and wellbeing. Future research may also benefit from examining selection mechanisms and long-term athlete development trajectories, in order to complement the present focus on the environment once athletes are engaged within it. Such research will ultimately enable practitioners to design more supportive and developmentally appropriate setting for young athletes.

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Declaration of interest

No potential conflicts of interest were reported by the authors.

Use of generative AI tools statement

When writing this manuscript, generative AI tools (DeepL and Microsoft Copilot) were used solely to assist with grammar correction and improve clarity of language.

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