Sport participation and its association with social and psychological factors known to predict substance use and abuse among youth: A scoping review of the literature

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ABSTRACT
This article presents the results of a scoping review of the sport literature (2000–2014) on psychological and social outcomes relevant to youth alcohol and illicit drug use. Prior reviews report that sport is related to increased alcohol use and reduced illicit drug use among youth, yet provide little guidance regarding the mechanisms that can explain this relationship. We reviewed the literature on sport participation and psychological and social outcomes to identify factors that could help explain this link. Psychological and social factors were selected as they play a paramount role in understanding youth alcohol and drug use. Fifty-nine articles were identified and included in the review. The literature generally supported connections between sport and positive psychological and social outcomes, including self-esteem, self-regulation, general life skills, and pro-social behaviour. Yet limitations in the methods and measures limit the ability to draw conclusions from the literature. In addition, the diversity of youth and sport was generally ignored in the literature. This article suggests a number of directions for future research that might improve our understanding of how sport impacts psychological and social outcomes along with alcohol and illicit drug use.

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Introduction
Both researchers and the sport community have expressed interest in using sport to promote positive youth development (Bailey, 2006; Coalter, 2013; Eime, Young, Harvey, Charity, & Payne, 2013). However, when we look critically at the evidence linking sport to positive development, the results are often mixed. For example, systematic reviews assessing the relationship between sport participation and alcohol and illicit drug use among youth show conflicting evidence: youth sport participation can protect against the use of illicit drugs, but presents a higher risk of increased alcohol consumption (Kwan, Bobko, Faulkner, Donnelly, & Cairney, 2014; Lisha & Sussman, 2010).
The positive association between sport and alcohol use is concerning as alcohol use is related to negative developmental outcomes and harms among youth including poor school performance and health-compromising behaviours (Bonomo, Bowes, Coffey, Carlin, & Patton, 2004; Leichliter, Meilman, Presley, & Cashin, 1998; Thompson, Stockwell, & Macdonald, 2012). Understanding the connections between sport participation and youth alcohol and drug use could advance efforts to prevent alcohol and drug use among youth, which is a topic of widespread interest (Catalano et al., 2012; Medina-Mora, 2005). Furthermore, the link between sport participation and alcohol and drug use is particularly important during adolescence as sport participation, alcohol use, and drug use are at their peak during this developmental period (Ewing & Seefeldt, 2002; Guèvremont, Findlay, & Kohen, 2008; Young et al., 2011). Yet, in the most recent systematic review on the topic, Kwan et al. (2014) reported little research that included measures of alcohol and drug use, examined sport as an intentional intervention to prevent alcohol and drug use, or examined the mechanisms that might explain the connections between sport participation and alcohol and drug use. This knowledge gap hinders efforts to design effective interventions using sport as a model for pro-social and individual development. Indeed, a similar argument has been made in relation to sport for international development (Coalter, 2013). We propose to address this gap by considering the broader literature on sport and youth development and youth alcohol and drug use to identify factors that could help elucidate the link between sport participation and youth alcohol and drug use.

Current perspectives on youth development emphasize that behaviour is influenced by multiple factors within the individual and their developmental and environmental context (Bronfenbrenner & Morris, 2006; Masten, Faden, Zucker, & Spear, 2008). Similarly, research on youth alcohol and drug use identifies a number of factors organized across the individual, social, and environmental contexts that influence alcohol and drug use (Hawkins, Catalano, & Miller, 1992; Stone, Becker, Huber, & Catalano, 2012). From this perspective the relationship between sport and alcohol and illicit drug use is likely impacted by psychological and social factors, and the sport context (i.e., the environment). Although we have chosen to focus on youth alcohol and drug use, the psychological and social factors related to alcohol and drug use are also likely relevant to a broad range of health behaviours among youth (Fishbein, 2000; Wade, 2001).

We refer to youth alcohol and drug use as an umbrella term that includes the use, risky patterns of use (use that presents increased risk of harms), and problematic use (use that results in harms) of psychoactive substances including alcohol and illicit drugs. Much of the research on sport participation and alcohol and drug use has measured substance use (any use/frequency of use). Yet studies that measured risky use or problematic use (e.g., heavy episodic drinking) have reported a similar pattern of results to studies that measure use (Mays, DePadilla, Thompson, Kushner, & Windle, 2010; Sher & Rutledge, 2007).

**Psychological and social factors**

Both theory and a significant body of empirical research indicate that psychological and social factors are critical in understanding health-related outcomes including alcohol and illicit drug use among youth (Wade, 2001; Wade & Pevalin, 2005). We have chosen to focus on a number of broad psychological and social constructs that have
demonstrated a relationship with youth alcohol and drug use, including self-concept, self-regulation, life skills, pro-social attitudes, and pro-social behaviour.

Self-concept refers to the cognitive and emotional evaluations of the self and the perceived evaluation of self by others. Self-concept captures the degree to which individuals feel loved, respected, valued, and competent, both globally (e.g., Rosenberg, 1979), and in relation to specific domains such as athletic or physical ability, physical appearance, or academic ability (Harter, 1990). Research has reported that youth with a positive self-concept are less likely to use alcohol and drugs (Taylor, Lloyd, & Warheit, 2005). Similar results have been reported for specific aspects of self-concept including self-esteem (Tomaka, Morales-Monks, & Shamaley, 2013) and a sense of competence or mastery (Spoth, Redmond, Hockaday, & Yoo, 1996).

Additionally, the ability to regulate emotions and behaviours, referred to as self-regulation, demonstrates a robust inverse relationship with alcohol and drug use among youth (Pokhrel, Sussman, Rohrbach, & Sun, 2007; Sussman, McCuller, & Dent, 2003). One important aspect of self-regulation – delayed gratification – is associated with a number of positive social outcomes (Shoda, Mischel, & Peake, 1990), positive health outcomes such as weight control (Schlam, Wilson, Shoda, Mischel, & Ayduk, 2013), and with reduced risk of problem behaviours later in life including use of alcohol and illicit drugs (Ayduk et al., 2000; Brody & Ge, 2001; Shoda et al., 1990).

Life skills such as time management, communication, coping, goal setting, and decision making provide an important foundation for attaining successful developmental goals (e.g., academic success). Prevention programmes that teach life skills have been shown to reduce alcohol and drug use among youth (Botvin & Griffith, 2004). Furthermore, it is a popular notion that training and competing in organized sport require the development of many of these skills (time management, conflict resolution, goal setting), and that these can be transferred from a sport context to other facets of life (Danish, Forneris, Hodge, & Heke, 2004; Fraser-Thomas, Côté, & Deakin, 2005).

Taken together, these constructs include how youth subjectively think and feel about themselves (self-concept), their ability to control their emotions and behaviour (self-regulation), and the skills they have that contribute to their ability to attain positive developmental goals. These constructs are key in understanding healthy development. From a developmental psychopathology perspective, identifying difficulties in the factors related to normative development can help us understand the emergence of problem behaviours such as alcohol and drug use (Cicchetti & Rogosch, 1999).

Finally, social relationships such as positive relationships with adult mentors and pro-social peers are associated with reduced alcohol and drug use (Fallu et al., 2010; Hurd, Stoddard, Bauermeister, & Zimmerman, 2014; Wormington, Anderson, Tomlinson, & Brown, 2013). Positive relationships with both adults and pro-social peers are believed to facilitate the development of pro-social values and attitudes that decrease the likelihood of problem behaviour such as alcohol and drug use (e.g., Hirschi, 1969). Pro-social values are characteristics shared by members of a specific society that enable people to feel fulfilled and live cooperatively with others (Arnold, 1999). Specific cultural examples in Western nations include fairness, empathy, loyalty, respect, and honesty. Pro-social behaviour includes positive actions taken by youth as active leaders in the development of the self (e.g., pursuing higher education), the family (e.g., caring for elderly relatives), the community (e.g., volunteering at a community centre), and civil society (Lerner, Lerner, Von Eye, Bowers, & Lewin-Bizan, 2011). Research has reported that as youth endorse more pro-social values
and engage in more pro-social behaviours, the likelihood that they will use alcohol and illicit drugs decreases (Carlo, Crockett, Wilkinson, & Beal, 2011).

**The sport context**

Sport is a broad term that captures a range of organized activities that vary in their culture, physicality, structure (community recreational programmes to school programmes to elite sport programmes at the university and professional levels), availability and quality of coaching, and the intensity to which winning is valued over participation. In recognition of the diversity of sport, the sport community has shown an increasing interest in structuring sport to provide a quality experience for youth that positively impacts broad health and social outcomes. For example, the Long-Term Athlete Development Model (LTAD; Balyi, Way, & Higgs, 2013) identifies several core components that should be targeted in youth sport including: (1) skill development, appropriate to the developmental stage (maturation) of the athlete; (2) presence of supportive, encouraging, and trained adult coaches; and (3) a focus on both sport-specific skill development and individual development related to acquisition of transferrable life skills (e.g. time management), and the regulation of behaviour and emotion. Both within the LTAD model and research on sport and youth development, coaches play a central role in youths’ experience of sport (Balyi et al., 2013; Hogue, Fry, Fry, & Pressman, 2013; MacDonald, Côté, Eys, & Deakin, 2011). Therefore, the relationship between sport participation and psychological and social outcomes might depend on the quality of the sport experience, which is influenced heavily by coaches.

**Current study**

We conducted a scoping review of the published literature from 2000 to 2014 on the relationship between sport participation and psychological and social factors among youth to answer the following research questions. First, is sport participation associated with psychological and social outcomes relevant to youth alcohol and drug use? This research question can identify promising avenues for future research that will help elucidate the connections between sport participation and youth alcohol and drug use. The second research question is: Does the quality of the sport experience influence psychological and social outcomes among youth? We sought to include literature that includes the notion of a quality sport experience in relation to youth development and the perspective of coaches to address this question. We chose to conduct a scoping review given that the literature in this area is broad (e.g., multi-disciplinary, multi-method). Unlike a systematic review or meta-analysis, a scoping review allows flexibility to include many different kinds of publications, allowing for a comprehensive review of the area, focused on theory in addition to empirical findings.

**Methods**

Between December 2013 and February 2014, we conducted an online search of the literature exploring the relationship between sport participation and positive psychological and social outcomes. We were only interested in articles that considered sport participation among youth. Youth refers to the developmental period of transition from the dependence of childhood to adulthood independence (UNESCO, 2013). For the purpose of this review,
we defined youth broadly and included ages 8–24. While many studies reported on grades, these were converted to a corresponding age range. We were also interested in identifying articles on organized youth sport. Organized youth sport is distinguished from unorganized youth sport by the presence of direct adult supervision (e.g., coach) in these structures. The main settings include school sport, community sport, and club sport.

**Search procedures and criteria**

We conducted a scoping review of studies published in peer-reviewed journals between 1 January 2000 and 31 December 2013 (in English only) that reported or reviewed the association between sport participation and social and/or psychological outcomes.

An initial online search was undertaken using the broad keywords ‘youth’, ‘sport’, ‘development’, ‘athlete’ and ‘adolescent’. Databases searched included Google Scholar, SPORTDiscus, Physical Education Index, and PsycINFO. The initial, exploratory searches were conducted and yielded thousands of results. Revised search criteria were developed based on the exploratory search. First, keywords were refined and used in different combinations (e.g., ‘youth, development, sport’; ‘sport, adolescent, development’; ‘athlete, sport, development’). Second, the following filters included in the databases were used: (1) available in full-text; (2) English language; (3) published in peer-reviewed journals; and (4) published from 2000–2013.

For each search conducted, the relevance of the studies decreased dramatically after approximately 100 results. Therefore, only the first 100 results in each search were screened. For each article identified in the search, the abstract was reviewed to assess if the study aligned with our review’s purpose (social and psychological outcomes). We chose to focus on keywords related to sport and youth rather than specific social and psychological outcomes to ensure breadth of coverage (scope). As our categories of social and psychological factors were quite broad, we felt it better to focus the search specifically on youth sport to identify an initial set of articles, and then examine them further to see if any variables related to social and psychological outcomes were included in the analysis or review. Additionally, we recorded if any studies included in the review also measured alcohol and drug use. Two authors (M.C. and J.C.) reviewed and consulted on the papers for inclusion. An initial list of 80 articles was identified that assessed sport and psychosocial variables, and upon further review a final list of 59 were identified as relevant for the review.

It is important to note that this method does not include unpublished literature, literature published outside peer-reviewed journals, literature not available in full text, or published prior to 2000. Despite these limitations the method does capture a broad representation of the recent literature on the relationship between sport participation and psychological and social factors.

**Results**

**General study characteristics**

In total, we identified 59 articles that examined the relationship between sport participation and psychological and/or social outcomes, based on the broad definitions outlined in the previous section for the review (see Table 1). The 59 articles included seven review
| Author                        | Country     | Type of study | Gender | Age   | Sport            | Locale | Outcome category | Main findings                                                                 |
|-------------------------------|-------------|---------------|--------|-------|------------------|--------|------------------|--------------------------------------------------------------------------------|
| Babiss and Gangwisch (2009)   | United States | Quantitative -Survey | M&F    | 12–18 | any              | any    | P; MH            | Sport can protect against depression and suicidal ideation by boosting self-esteem and increasing social support |
| Bailey (2006)                 | United Kingdom | Lit Review    | n/a    | n/a   | n/a              | n/a    | P; S             | Physical education and sport in schools, when appropriately presented, can lead to development -social behaviour, self-esteem, positive affect |
| Bailey et al. (2009)          | United Kingdom | Lit Review    | n/a    | n/a   | n/a              | n/a    | P; S             | Physical education and school sport can lead to physical, social, affective and cognitive outcomes -nonspecific |
| Barber, Eccles, and Stone (2001) | United States | Quantitative -survey; longitudinal | M&F    | 16; 18; 21; 24 | ns               | ns     | P; S; MH         | Sports participation predicted positive educational outcomes, lower social isolation but higher drinking -self-esteem; depression; anxiety; social isolation; pro-social behaviour |
| Brown and Blanton (2002)      | United States | Quantitative -survey | M&F    | 18–24 | ns               | ns     | MH              | Men not in sport were 2.5 times more likely to report suicidal behavior than sports participants. Women not in sport were 1.67 times the odds of reporting suicidal behavior than sports participants -suicidal ideation and behaviour |
| Bruner, Hall, and Côté (2011) | Canada      | Quantitative -survey | M      | 14–17 | basketball, running | CR     | P; S             | Team versus individual sports may provide different learning environments, but the development of youth is more influenced by the people involved than the sport - emotional regulation; positive relationships; teamwork; social skills; social capital Basketball players were exposed to discrimination, racism, and a win-at-all-costs attitude -nonspecific social behaviour |
| Buford-May (2001)             | United States | Qualitative -interview | M      | ns    | basketball       | CR     | S               | Basketball players were exposed to discrimination, racism, and a win-at-all-costs attitude -nonspecific social behaviour |
| Author                                    | Country        | Type of study | Gender | Age   | Sport                     | Locale | Outcome category | Main findings                                                                                                                                                                                                 |
|-------------------------------------------|----------------|---------------|--------|-------|---------------------------|--------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Camiré, Trudel, and Forneris (2009)       | Canada         | Qualitative   | M&F    | 13–17 | basketball; volleyball; soccer; badminton | S      | P; S              | Students believed high school sport helped them develop leadership, time-management, goal-setting -self-efficacy; nonspecific life skills                                                                 |
| Camiré and Trudel (2010)                 | Canada         | Qualitative   | M&F    | 13–17 | basketball; volleyball; soccer; badminton | S      | S                | Students believe they can learn values through high school sport but also gamesmanship tactics -prosocial behaviour                                                                                         |
| Camiré, Forneris, Trudel, and Bernard (2011) | Canada       | Qualitative   | M&F    | coaches | n/a | n/a | S                | Presenting 5 strategies for helping coaches facilitate positive youth development through sport -nonspecific social; transfer of social skills to nonsport setting                                                                 |
| Camiré, Trudel, and Forneris (2012)      | Canada         | Qualitative   | M&F    | 13–18; coaches | ns | S | S                | Coaches had strategies to foster student development and students believed they could transfer their skills -nonspecific social; transfer of social skills                                                                 |
| Camiré and Trudel (2013)                 | Canada         | Qualitative   | M; M   | 14–16; coaches | football | S | P; S              | Football can help students learn important life skills and remain engaged academically -nonspecific psychosocial; nonspecific social behaviour                                                                 |
| Camiré, Trudel, and Bernard (2013)       | Canada         | Qualitative   | M      | 13–17; coach; administrators | hockey | CR | S                | Case study demonstrating how sport can be deliberately used to foster youth development -nonspecific social; transfer of social skills Youth in out-of-school sport have higher levels of self-efficacy, prosocial behavior and responsibility respect |
| Carreres-Ponsoda, Escarti, Cortell-Tormo, Fuster-Lloret, and Andreu-Cabrera (2012) | Spain         | Quantitative  | M&F    | 12–19 | any | CR | P; S              | Youth in out-of-school sport have higher levels of self-efficacy, prosocial behavior and responsibility respect                                                                                                                                                       |
| Collins and Barber (2005)                | United States  | Quantitative  | F      | 13–19 | Field Hockey; elite | CR     | MH               | Parental expectations can influence students’ confidence and level of anxiety -anxiety due to competition                                                                                                                                                               |
| Coalter (2010)                           | United Kingdom | Position Paper | n/a    | n/a   | n/a | n/a | S                | Explore how sport-for-development organizations can contribute to certain types of social capital -social capital                                                                                                                                                        |
| Study                                      | Country      | Study Design | Methodology | Sample | Effect Size | Results                                                                 |
|--------------------------------------------|--------------|--------------|-------------|--------|-------------|------------------------------------------------------------------------|
| Conroy and Coatsworth (2006)               | United States| Position Paper| n/a         | n/a    | n/a         | Effective coach training programs can enhance youth social development  |
|                                            |              |              |             |        |             | - nonspecific social                                                  |
| Danish et al. (2004)                       | United States| Position Paper| n/a         | n/a    | n/a         | Sport can play a role in helping youth learn life lessons but programs |
|                                            |              |              |             |        |             | must be designed to do so-nonspecific life skills                     |
| Durlak, Weissberg, and Pachan (2010)       | United States| Meta-Analysis | M&F         | 5–18   | ns          | Compared to controls, participants demonstrated significant increases  |
|                                            |              |              |             |        |             | in self-perceptions, bonding to school, positive social behaviors,     |
|                                            |              |              |             |        |             | school grades, reductions in problem behaviors, the formation of cliques,|
|                                            |              |              |             |        |             | favoritism, and pressure                                              |
|                                            |              |              |             |        |             | - self-esteem; self-efficacy; social skills; social competence;        |
|                                            |              |              |             |        |             | self-control                                                           |
|                                            |              |              |             |        |             | Participation on school sports teams predicted better educational      |
|                                            |              |              |             |        |             | outcomes and higher rates of drinking                                 |
|                                            |              |              |             |        |             | - prosocial behaviour                                                 |
|                                            |              |              |             |        |             | Study demonstrates the advantage of using sport as a means for       |
|                                            |              |              |             |        |             | encouraging citizenship among youth                                   |
|                                            |              |              |             |        |             | - volunteerism; nonspecific social                                   |
|                                            |              |              |             |        |             | - self-esteem, self-control; prosocial behaviour; emotional            |
|                                            |              |              |             |        |             | regulation; depression; anxiety; suicide ideation and behaviour       |
|                                            |              |              |             |        |             | Review of how youth sport programs foster positive development, while  |
|                                            |              |              |             |        |             | decreasing problem behaviors                                          |
|                                            |              |              |             |        |             | - nonspecific social skills                                           |
|                                            |              |              |             |        |             | Sport participation can lead to numerous positive or negative outcomes |
|                                            |              |              |             |        |             | for youth -resiliency, social competence                              |
|                                            |              |              |             |        |             | Team sports protected against depressed mood -mediated by peer and    |
|                                            |              |              |             |        |             | family social support                                                 |
|                                            |              |              |             |        |             | Coaches ranked students’ physical, psychological, and social          |
|                                            |              |              |             |        |             | development as their main coaching focus -self-control; teamwork;    |
|                                            |              |              |             |        |             | citizenship                                                           |

(Continued)
| Author and Year | Country     | Type of study | Gender | Age     | Sport | Locale | Outcome category | Main findings                                                                                                                                                                                                 |
|-----------------|-------------|---------------|--------|---------|-------|--------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gould and Carson (2011) | United States | Quantitative -survey | M&F | 13–18 | ns | S | S | Coaching behaviors are significant predictors of developmental experiences -unspecified social behaviour; perception of coaching behaviour The more coaches create mastery environments, the more likely positive developmental gains result -social exclusion; mastery; social skills; social capital |
| Gould, Flett, and Lauer (2012) | United States | Quantitative -survey | M&F | 11–18 | ns | CR; S | P; S | Cricketers with high mental toughness reported more developmental assets and less negative emotions compared those with moderate mental toughness -anxiety; depression; resilience; support; social competence; social capital Students involved in sports had, among other things, a healthier self-image and lower emotional distress -self-esteem; emotional distress; risky behaviours; suicidal thoughts and behaviour Desired goals were identified in player improvement, development of life skills and enjoyment -nonspecific life skills; self-reflection In a case study of one high school soccer team, athletes learned respect and initiative -prosocial behaviour Social interactions are central to how people learn life skills, along with parental reinforcement -nonspecific social behaviour Intramural sports associated with negative student interactions. PYD outcomes = empathy, social links |
| Gucciardi and Jones (2012) | Australia | Quantitative -survey | M | 10–18 | cricket | CR | P; S; MH | |
| Harrison and Narayan (2003) | United States | Quantitative -survey | M&F | 13–15 | ns | S | P; S; MH | |
| Harrist and Witt (2012) | United States | Qualitative -interview; observation; FG | F; M&F | 12–16; coaches | basketball | S | S | |
| Holt, Tink, Mandigo, and Fox (2008) | Canada | Qualitative -ethnography; interview | M | 15–18 | soccer | S | S | |
| Holt, Tamminen, Tink, and Black (2009) | Canada | Qualitative -interviews; retrospective | M&F | university | ns | ns | S | |
| Holt, Sehn, Spence, Newton, and Ball (2012) | Canada | Qualitative -interviews; observation | M&F | 10–15; school staff | ns | S | S | |
|   | Authors                                      | Country      | Methodology                        | Sample | Data | Setting | Type | Findings                                                                                                                                                                                                 |
|---|---------------------------------------------|--------------|------------------------------------|--------|------|---------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 35| Johnston, Harwood, and Minniti (2013)       | United Kingdom | Qualitative interviews              | ns     | coaches | swimming | CR P S | Practitioners believe athletes should learn self-perceptions, behavioral skills, social skills, approach characteristics, and emotional competence -self-esteem; emotional self-regulation; empathy; resilience; social interaction |
| 36| Jonker, Elferink-Genser, and Visscher (2011)| Netherlands   | Quantitative survey                | M&F    | 12–16 | ns; elite | S; CR  | Self-regulation may help elite youth athletes to combine a sport career with education Perceived performance climate corresponded to low levels of moral functioning in football -moral functioning |
| 37| Kavussanu and Spray (2006)                 | United Kingdom | Quantitative survey               | M      | 12–17 | Soccer   | CR S  | Morally-relevant sport behaviors are significant because of their consequences on well-being -prosocial behaviour; aggression |
| 38| Kavussanu (2008)                           | United Kingdom | Lit Review                     | n/a    | n/a   | n/a     | n/a S | Strong benefits (social capital) from involvement, increased social connectedness in a range of contexts -nonspecific personal development; volunteer |
| 39| Kay and Bradbury (2009)                    | United Kingdom | Mixed Methods -survey; interview | M&F    | Youth volunteers; adults | ns     | CR P S | In psychosocial intervention, sport is powerful when combined with other movement or education methods -nonspecific psychosocial |
| 40| Lesyk and Kornspan (2000)                 | United States | Quantitative survey               | M&F    | coaches | ns       | S     | Athletes who played for trained coaches reported higher rates of personal and social skills than athletes who played for untrained coaches -nonspecific personal skills; nonspecific social skills |
| 41| Ley and Barrio (2010)                      | Spain         | Position Paper                   | n/a    | n/a   | n/a     | n/a P | Environments that encourage peer affiliation and personal achievement results in development of youth -nonspecific social skills |
| 42| MacDonald, Côté, and Deakin (2010)         | Canada        | Quantitative retrospective cohort; survey | M&F    | administrators; 9–17 | basketball; dance; hockey; ringette; soccer; softball; volleyball | CR P S | Participation in high school sports had positive effect on many academic outcomes -self-esteem; mastery; -outcome – Total Athletic Participation (TAP) |
| 43| MacDonald et al. (2011)                    | Canada        | Quantitative survey               | M&F    | 9–19  | ns       | S; CR  | Environments that encourage peer affiliation and personal achievement results in development of youth -nonspecific social skills |
| 44| Marsh and Kleitman (2003)                  | United States | Quantitative survey; longitudinal | M&F    | 12–14 to 18–20 | ns       | S; CR P | Participation in high school sports had positive effect on many academic outcomes -self-esteem; mastery; -outcome – Total Athletic Participation (TAP) |
| Author | Country | Type of study | Gender | Age | Sport | Locale | Outcome category | Main findings |
|--------|---------|---------------|--------|-----|-------|--------|------------------|---------------|
| McCarthy, Jones, and Clark-Carter (2008) | United Kingdom | Quantitative | M&F | 8–15 | ns | CR; S | S | Team sport reported greater competency, peer affiliations, excitement, parental involvement and enjoyment compared with individual sport. Task orientation predicted enjoyment |
| Merkel (2013) | United States | Lit Review | n/a | n/a | n/a | n/a | P; S; MH | Emphasis on fun, physical fitness, psychological well-being, and life lessons are paramount for success |
| Papacharisis, Goudas, Danish, and Theodorakis (2005) | Greece | Quantitative | M&F | 10–12 | volleyball (F); soccer (M) | CR | P | Experimental group had higher self-beliefs, problem solving, and positive thinking than the control group |
| Petitpas, Cornelius, Van Raaijte, and Jones (2005) | United States | Position Paper | n/a | n/a | n/a | n/a | P | The components of a framework are outlined and suggestions for research and evaluation are offered |
| Rose-Krasnor, Busseri, Willoughby, and Chalmers (2006) | Canada | Quantitative | M&F | 10–18 | ns | S; CR | P; S; MH | Breadth and intensity were related to indicators of development. Explained major variance involvement |
| Rutten et al. (2007) | Netherlands | Quantitative | M&F | 12–18 | soccer; swimming | ns | S | Coaches maintain relationships with athletes reduce antisocial behavior, exposure to sociomoral reasoning in sport promotes pro-social behavior |
| Steiner, McQuivey, Pavelski, Pitts, and Kraemer (2000) | United States | Quantitative | M&F | 13–18 | ns | S | MH; S | Sports participation is associated with mental and physical benefits but also an increased risk of injury |
| Study Reference | Country | Type of Study | Methodology | Sample | Outcome Category | CR | S | Note |
|-----------------|---------|---------------|-------------|--------|-----------------|----|---|------|
| Strachan, Côté, and Deakin (2011) | Canada | Qualitative | -interviews; observation | M&F coaches | swimming; gymnastics; diving; elite | CR | S | PYD for elite youth athletes needs appropriate training environment, opportunities for skill development, and supportive interactions - nonspecific social skills; values, leadership, values, responsibility, White students, sport participation related to multiple positive behaviors. African American, Hispanic showed few positive behaviors, negative behaviors - suicidal ideation and behaviour; pro-social behaviour |
| Taliaferro, Rienzo, and Donovan (2010) | United States | Quantitative | -survey | M&F 14–18 | ns | CR | S; MH | Coaches see themselves as responsible for facilitating many positive youth development outcomes - positive affect, self-control; self-esteem; pro-social behaviour; Best predictor of development is a combination of transformational leadership and quality relationships - YES-S questionnaire -- nonspecific social skills |
| Vella, Oades, and Crowe (2011) | Australia | Qualitative | -interview | M&F coaches | ns | CR | S | Coaches see themselves as responsible for facilitating many positive youth development outcomes - positive affect, self-control; self-esteem; pro-social behaviour; |
| Vella, Oades, and Crowe (2013) | Australia | Quantitative | -survey | M&F 11–18 | soccer | CR | S | Best predictor of development is a combination of transformational leadership and quality relationships - YES-S questionnaire -- nonspecific social skills |
| Voelker, Gould, and Crawford (2011) | United States | Qualitative | -interview | M&F 18 | ns | S | S | Coaches see themselves as responsible for facilitating many positive youth development outcomes - positive affect, self-control; self-esteem; pro-social behaviour; |
| Weiss, Stuntz, Bhalia, Bolter, and Price (2013) | United States | Qualitative | -FG; interviews | M&F 11–17; coaches; parents | golf | CR; S | P; S | The First Tee is having a positive impact on youth development and in the transfer of life skills - emotional control; pro-social behaviour |
| Wilkes and Côté (2010) | Canada | Mixed Methods | -survey; interviews | F 14–15; administrators | basketball | CR; S | S | School basketball participants developed initiative and social norms but also faced higher stress levels - emotional self-regulation; pro-social behaviour; |
| Yang et al. (2010) | Finland | Quantitative | -survey; longitudinal; cohort | M&F 9, 12, 15, 18; 36, 39, 42, 45 | ns | ns | P | Sustained involvement in sport (at least 3 years) is associated with reduced chronic job strain in adulthood - job strain |

Note: Type of sport – specific or general (any-any sport; ns-non specific; t-team); Locale – CR-community/recreational, S-school (any-any locale; ns-non specific); Outcome category: P-Psychological/ Psychosocial; S-Social; MH-Mental Health (note mental health is considered under the umbrella of psychological factors)
papers (five narrative literature reviews, one systematic analysis, and one meta-analysis), five position/opinion papers, and 47 primary studies.

**Research methodologies**
Of the 47 primary research articles, 28 (59.6%) used quantitative designs and 19 (40.4%) used qualitative methods (interviews, field research). Of the quantitative empirical papers, only five (8.5%) were longitudinal and 23 were based on cross-sectional survey methods.

**Target population (or sample)**
Of the 47 research articles, 33 involved athletes only (ranged from 8 to 24 years), six involved coaches only, and eight involved both athletes and coaches. When examining empirical papers, systematic reviews and meta-analyses papers, most ($n = 38$; 79.2%) included both sexes; eight papers (16.6%) dealt exclusively with male youth and only two papers (4.2%) focused on sport participation in females.

Across all articles, contributions came from several different countries: the United Kingdom ($n = 9$); the United States ($n = 23$); Canada ($n = 17$); and other (e.g., Australia; Greece; $n = 9$).

**Included sports**
When looking specifically at sport type, the empirical papers covered a wide range of team and individual competition sports (e.g., basketball, football, cricket, swimming, gymnastics). Very few papers ($n = 3$) examined participation across a broad range of sports.

**Outcomes**
With regard to outcomes, across all papers reviewed (empirical, position papers and literature and systematic reviews), 22 (37.3%) included both psychological and social outcomes, 28 (47.5%) focused on social outcomes only, and nine (15.3%) had only psychological outcomes.

**Psychological outcomes – Positive self-concept (self-esteem; self-worth; mastery; sense of personal control)**

Studies included in our review showed consistent relationships between sport participation and both self-esteem (Babiss & Gangwisch, 2009; Barber et al., 2001; Carreres-Ponsoda et al., 2012; Harrison & Narayan, 2003; Marsh & Kleitman, 2003; Papacharisis et al., 2005) and sense of personal control or mastery (Durlak et al., 2010; Gould et al., 2012; Marsh & Kleitman, 2003). All of these studies used survey-based designs to examine the association between sport participation and self-esteem, mastery, or sense of personal control. Evidence for these associations also comes from narrative literature reviews (Bailey, 2006; Bailey et al., 2009; Merkel, 2013), a systematic review (Eime et al., 2013), and one meta-analysis (Durlak et al., 2010).

Our review also found several, mostly qualitative studies indicating that coaches and other adult leaders in sport (e.g., physical education teachers) believe that part of their role is to promote the development of self-esteem and positive self-development in athletes (Johnston et al., 2013; Vella et al., 2011).
Psychological outcomes – Life skills

We found evidence in the review from a number of studies that participation in specific sports (e.g., football, hockey), and in specific contexts (e.g., high school sport), was positively associated with life skills. Most of the studies in this area were qualitative (Camiré et al., 2009, 2012, 2013; Harrist & Witt, 2012; Holt et al., 2009; Strachan et al., 2011; Vella et al., 2011; Weiss et al., 2013), with only a small number of survey-based studies contributing to this area (Bruner et al., 2011; MacDonald et al., 2010; MacDonald et al., 2011; Papa-Charisis et al., 2005). Moreover, most studies defined life skills (e.g., Camiré et al., 2009; Harrist & Witt, 2012) and social skills (e.g., Bruner et al., 2011; MacDonald et al., 2011) as a broad concept, rather than focusing on specific life skills such as time management or leadership.

As with the studies that focused on positive self-concept, there is both qualitative (Camiré et al., 2011, 2012) and quantitative (Lesyk & Kornspan, 2000) evidence demonstrating how coaches see themselves as responsible for the development of life skills in athletes under their guidance. Moreover, qualitative studies showed how youth athletes themselves believe that sport can teach them important life skills that can be applied to non-sport-related pursuits (e.g., Camiré et al., 2009). However, we also found evidence, albeit limited, of the potentially negative impact of coaching philosophy (win at all costs) on young athletes (Buford-May, 2001).

Psychological outcomes – Self-regulation and self-control

Several papers, including a meta-analysis (Durlak et al., 2010) and a systematic review (Eime et al., 2013), supported a positive association between sport participation and general self-control (Durlak et al., 2010; Gould et al., 2006), and emotional regulation specifically (Bruner et al., 2011; Johnston et al., 2013). One quantitative survey-based study (Gould et al., 2006) and a qualitative study (Vella et al., 2011) reported that coaches believed it is their responsibility to teach self-control to young athletes.

Other psychological outcomes

Although the majority of studies focused on self-concept, life skills, and to a lesser extent self-regulation and control, a number of other psychological outcomes were identified in this review. Several large survey-based studies reported a relationship between sport participation and self-esteem, mastery, and sense of personal control, but also positive mental health outcomes such as reduced depression and suicidal ideation in both cross-sectional studies (Babiss & Gangwisch, 2009; Harrison & Narayan, 2003) and a longitudinal study (Barber et al., 2001).

Our review also found quantitative papers demonstrating a link between sport participation and feelings of general optimism (Rose-Krasnor et al., 2006) and mental toughness (Gucciardi & Jones, 2012). Both qualitative (Fraser-Thomas & Côté, 2009; Johnston et al., 2013) and quantitative (Eime et al., 2013; Yang et al., 2010) papers showed associations between sport participation and greater resilience towards life stresses and challenges. In relation to resilience, for example, a longitudinal study conducted in Finland found that sustained participation (a minimum of three years) in sport during late childhood
and early adolescence was associated with reduced chronic job strain years later in adulthood (Yang et al., 2010).

Although most studies reported positive effects, some research reported negative psychological effects. For example, Steiner et al. (2000) surveyed 1769 high school students and found that while sport participation was associated with positive mental and physical health benefits, youth athletes also reported increased risk of injury associated with sport, higher levels of anxiety, and increased general risk taking. Another quantitative study conducted with 416 field hockey players reported that heightened parental expectations related to sport outcomes increased feelings of anxiety in youth athletes, and negatively affect perceptions of competence (Collins & Barber, 2005).

Social outcomes – Pro-social behaviours

The potential for sport participation to promote positive social behaviours, including pro-social behaviour, empathy, social (community) connectedness, social capital, positive peer relationships, and positive ethical and moral behaviour, is commonly discussed in the sport for youth development literature (Coalter, 2010). Not surprisingly, given this interest, the majority of studies we identified focused on many of these specific aspects of positive social behaviour. For example, many of the studies (both qualitative and quantitative) and reviews included in the current review found that sport was associated with pro-social behaviours (e.g., teamwork, perseverance, loyalty; Barber et al., 2001; Camiré & Trudel, 2010; Carreres-Ponsoda et al., 2012; Eccles et al., 2003; Eley & Kirk, 2002; Holt et al., 2008; Kavussanu, 2008; Merkel, 2013; Taliaferro et al., 2010; Weiss et al., 2013; Wilkes & Côté, 2010). Qualitative studies have also shown a specific positive relationship between sport participation and empathy towards others (Holt et al., 2009; Johnston et al., 2013), while a quantitative study showed increases in positive peer relationships and teamwork (Bruner et al., 2011). There was also one study (quantitative, survey based) that reported increased volunteerism and citizenship behaviours in youth athletes relative to peers (Eley & Kirk, 2002). As with the other outcomes included in this review, quantitative survey-based papers that included both coaches and youth (Gould et al., 2006; Rutten et al., 2007) and a qualitative interview with coaches (Vella et al., 2011) noted the important role that coaches play in the development of pro-social behaviours, especially in relation to citizenship.

Discussion

Psychological and social outcomes

In general, we found evidence across different methods (i.e., qualitative studies, quantitative studies, literature reviews, and meta-analyses) supporting the general proposition that sport participation is associated with a variety of positive psychological and social outcomes relevant to youth alcohol and drug use. The most consistent finding in our review concerned evidence of a positive impact of sport on self-concept and sense of personal control or mastery. This was supported by several papers (Babiss & Gangwisch, 2009; Carreres-Ponsoda et al., 2012; Harrison & Narayan, 2003) and by a recent systematic review of the literature (Eime et al., 2013).
While it is plausible that sport participation (particularly quality sport experience) is associated with positive self-concept and increased sense of personal control, it is unclear from the studies included in our review whether sport has a truly causal impact on self-concept and agency. These results could arise from a selection effect, whereby children and youth with already well-developed perceptions of self-worth and personal agency are simply more likely to participate in organized sport. Alternatively, it could be that both are simply concomitant outcomes of other, antecedent factors further upstream such as socio-economic position and familial functioning that might impact positive self-concept, self-control, and sport participation. Moreover, it may be the case that these are not competing explanations but in fact represent mutually reinforcing (or reciprocal) processes over time. For example, it may be the case that children with higher levels of self-esteem and mastery may gravitate towards organized activities such as sport, and their participation in sport serves to further promote these positive self-perceptions.

Importantly, several studies also found that coaches believe part of their role is to foster the development of positive self-concept and self-control in their athletes (Camiré et al., 2012; Gould et al., 2012; Johnston et al., 2013). However, not all coaches engage in behaviour that enhances youth development. We found evidence that a win-at-all-costs coaching philosophy can have a negative impact on athletes (e.g., Buford-May, 2001). We also found some evidence that racial discrimination (e.g., Taliaferro et al., 2010) and negative parental involvement can be sources of distress for young athletes (Collins & Barber, 2005). All of these experiences could negatively impact self-concept.

Critical appraisal of the literature

While this review has provided some support connecting sport participation to psychological and social factors, we must contextualize our findings here in the broader set of concerns that scholars have raised regarding the impact of sport on youth development (e.g., Coalter, 2013). In doing so, a number of criticisms are evident.

First, there may be a positive finding bias in this research area. Only a handful of studies in the review specifically documented negative experiences and outcomes, such as increased exposure to racism (Buford-May, 2001), negative peer interactions (Holt et al., 2012), the potential negative impact of parental over-involvement in sport (Collins & Barber, 2005), increased engagement in risk-taking activities (Steiner et al., 2000), and increased drinking (Barber et al., 2001; Eccles et al., 2003). As a reviewer, one has the sense that many authors begin with the premise that sport is good for youth development, and do not seek to find disconfirming evidence. As Coakley (2011) has noted, the field has no shortage of sport evangelists who seem to be more interested in demonstrating that sport is beneficial, rather than engaging in critical, empirical analysis. Therefore, a closer empirical examination of the potential negative outcomes that can emerge from sport participation is warranted in order to gain a more complete picture of the impact of sport participation on youth.

Second, much of the literature reviewed in this article does not explore how characteristics of both the youth and the sport experience might impact psychological and social outcomes. Only a few studies specifically explored the impact of race and its moderating impact on sport participation and psychosocial outcomes (Buford-May, 2001; Taliaferro
et al., 2010). For example, one US survey study found that the positive impact of sport on pro-social behaviours varied across race, with African American and Hispanic American youth reporting more negative behaviours than Caucasian youth (Taliaferro et al., 2010). It is likely that characteristics of youth such as race, gender, and socioeconomic status will impact both the likelihood of sport participation and the experience of sport. Similarly, the characteristics that coaches bring to the sport (e.g., formal coach training, years of coaching experience) also shape the experience in relation to positive youth development. One example from this research was the negative impact of a win-at-all-costs coaching philosophy (e.g., Buford-May, 2001). While many papers included in the review noted the important role that coaches play in shaping the overall sport experience (e.g., Camiré et al., 2011; Gould et al., 2012; Lesyk & Kornspan, 2000; MacDonald et al., 2010; Rutten et al., 2007), less research examined the characteristics of coaches that shape youths’ experience in sport.

The heterogeneity of sport was also evidenced throughout our review, which included a diverse array of sport experiences, including contact (e.g., Camiré & Trudel, 2013; Camiré et al., 2013) and non-contact sports (e.g., Papacharisis et al., 2005), team sports (e.g., Bruner et al., 2011; Harrist & Witt, 2012), and more individual sports such as swimming or track and field (e.g., Johnston et al., 2013; Fraser-Thomas & Côté, 2009). Despite recognition in the literature regarding the importance of the structural elements of sport that influence the quality of the sport experience and positive youth development (Balyi et al., 2013; Coalter, 2013), most studies in our review lack sufficient detail or specific measures to gauge how this variability shapes individual and social development. For example, several survey-based studies simply examined the correlation between participation (yes/no), the number of sport activities the participant engaged in, or both in relation to outcomes such as self-esteem or pro-social behaviour (Carreres-Ponsoda et al., 2012; Eccles et al., 2003; Eley & Kirk, 2002; Gore et al., 2001; Gould et al., 2006; Gucciardi & Jones, 2012; Harrison & Narayan, 2003; Jonker et al., 2011; McCarthy et al., 2008; Steiner et al., 2000). Only one survey actually examined specific, sport-related components – transformational leadership and quality relationships – and their association with positive social skill development (Vella et al., 2011). In terms of quantitative research at least, the absence of any direct measure that assesses the quality of youths’ sport experience is a significant gap providing an important target for future research. This gap is perhaps not surprising, given the lack of any clear definition or theory for the construct. As we noted in the introduction, while quality sport experience refers to the structure of sport programmes, ones that target both age-appropriate skill development and personal and social development, this definition lacks the specificity required for developing specific measures. There are of course several scales that measure aspects of the sport experience, including coaching behaviour (Côté, Yardley, Hay, Sedwick, & Baker, 1999; Smith, Cumming, & Smoll, 2008) and social climate (Newton et al., 2007). Yet we have been unable to find a single measure that captures the multi-dimensional nature of the sport experience. Moreover, there are aspects related to quality experience that are not captured in existing measures. For example, few existing measures assess parental behaviours (e.g., aggression, yelling). Several qualitative studies, however, were clearly focused on understanding from the participants’ perspectives, the experience of sport, and how it can be used to enhance youth development (Camiré et al., 2009; Camiré & Trudel, 2010; Fraser-Thomas, & Côté, 2009; Holt et al., 2008, 2009, 2012).
Several studies in our review show a positive association between sport participation and general life and social skill development (e.g., Bruner et al., 2011; Harrist & Witt, 2012). Additionally, many coaches (Camiré et al., 2012; Gould et al., 2006) and young athletes (e.g., Camiré et al., 2009) perceived these to be important outcomes that can be derived from sport participation. However, there are several concerns regarding the literature in this area. First, most of the studies were small qualitative studies in specific settings. It is not clear whether the results from these studies can generalize to larger sport participation given that different sports have distinct subcultures and promote different types of motivational and developmental climates. Secondly, there is a lack of specificity about what is actually included under the broad terms of life skills and social skills. Most of the studies we reviewed are best characterized as reporting on ‘non-specific’ life and social skills. As such, it is difficult to know exactly what specific skills are being developed in relation to sport. In other words, whether skills acquired and developed in relation to sport (e.g., time management) directly influence other domains (e.g., school work) can only be inferred from this body of work; the linkages are not made directly. We recognize, however, that it is difficult to pinpoint with precision when a skill learned in a sport context (e.g., time management) has generalized to other areas of life. Weiss et al.’s (2013) study of a golf-based sport programme, The First Tee, is one notable exception where the authors tested whether skills such as emotional control and pro-social behaviour transferred to other domains of life (e.g., school). Overall, however, it is not possible to conclude from these studies that sport participation is a causal factor in the development of life and social skills.

Finally, it is also largely unknown whether the potential positive benefits of sport participation can last into adulthood. We could locate only one study that explored the long-term health impact of youth sport participation (Yang et al., 2010). Further work will need to explore whether sport participation earlier in life leads to enhanced well-being across the life course, presumably through the positive impact it can have on social and psychological development, or whether the impact is more proximal to the early developmental period.

**Psychological and social factors connecting sport and alcohol and drug use**

One of the goals of the review was to address the knowledge gap regarding psychological and social pathways that connect sport participation to alcohol and drug use among youth. Results from this review reported that sport was related to increased self-control and self-regulation (Bruner et al., 2011; Durlak et al., 2010; Gould et al., 2006; Johnston et al., 2013), factors that other research has found to be robust predictors of reduced alcohol and drug use, including heavy alcohol use (Brody & Ge, 2001; Koning, Van den, & Vollebergh, 2014; Quinn & Fromme, 2010). In addition, quantitative studies within the review found that sport was related to increased self-esteem and mastery along with other indicators of well-being such as decreased depression, anxiety, and suicidal ideation (Babiss & Gangwisch, 2009; Barber et al., 2001; Harrison & Narayan, 2003). These results suggest that self-regulation, self-esteem, and mastery may mediate the relationship between sport participation and positive well-being. Moreover, as depression, anxiety, and alcohol and drug use tend to cluster together (Bukstein, Brent, & Kaminer, 1989; Costello, Erkanli, Federman, & Angold, 1999; Wade, 2001), these factors might be particularly
relevant for understanding the links between sport participation and alcohol and drug use. Therefore, one potential pathway connecting sport to alcohol and drug use is a protective path where sport enhances psychological and social outcomes, and this association in turn impacts positive psychological well-being and decreased alcohol and drug use.

However, Barber and colleagues (2001) and Eccles and colleagues (2003) reported that sport was associated with increased drinking alongside positive psychological and social outcomes including pro-social behaviour, increased self-esteem, and reduced depression in a sample of Michigan youth. This pattern of results is unexpected considering the links between alcohol use and negative developmental outcomes (Bonomo et al., 2004; Champion et al., 2004; Kodjo, Auinge, & Ryan, 2004; Leichliter et al., 1998; Thompson et al., 2012). The limited research on sport and alcohol use substantially impedes our understanding of this relationship. For example, it is not known whether increased alcohol use alongside positive psychological and social factors would be found across age groups (e.g., early adolescence) or whether these results can be sustained over time. Despite these limitations, the increased use of alcohol alongside positive psychological and social factors highlights the complexity of the relationship and suggests that additional mechanisms (e.g., cultural context) should be explored to fully understand the relationship.

Researchers have speculated that the drinking culture observed in many sports, characterized by heavy drinking and the advertising of alcohol around sporting events, might result in normative perceptions of alcohol use among young athletes and contribute to increased alcohol use (Holt & Jones, 2008; Martens, Dams-O’Connor, & Beck, 2006). We did not find any research assessing alcohol norms in the review, although one study found that youth who participated in sport were more likely to have peers who used alcohol (Eccles et al., 2003). Both normative beliefs regarding alcohol use and peer alcohol use are significant predictors of youth alcohol use (Fallu et al., 2010; Shamblen, Ringwalt, Clark, & Hanley, 2014; Voogt, Larsen, Poelen, Kleinjan, & Engels, 2013). Therefore, even if the sport experience is positive in terms of psychological and social factors, normative beliefs and peer alcohol use could result in increased alcohol use. Again, however, it is unclear whether alcohol use will co-occur with positive developmental outcomes, and if so, whether the relationship can be sustained over time as alcohol use is likely to have reciprocal effects on the sport experience.

It is probable that the connections between sport and alcohol and drug use among youth involve multiple pathways including others not identified in the review. Furthermore, the exact pathways and mechanisms will likely vary depending on the characteristics of youth who participate in sports, the quality of the sport experience, and the type of substance used. For example, a negative sport experience including parental over-involvement or over-emphasis on winning by the coach may result in negative affect and distress that can increase the risk of alcohol and drug use. Alternately, a sport experience that is otherwise positive (e.g., positive relationships with the coach and teammates) within a context where alcohol use is perceived as normative can also pose a risk of increased alcohol use. If sport has a positive impact on psychological and social mechanisms related to alcohol and drug use generally, while at the same time presenting risks specific to alcohol use, this might help explain why sport is related to reduced illicit drug use and increased alcohol use (Kwan et al., 2014; Lisha & Sussman, 2010). Future research is needed to test each of these potential pathways.
Directions for future research

Following from this review, it is clear that future studies will need to move beyond observational and cross-sectional analyses, be it qualitative or quantitative, to the design of interventions and longitudinal studies to test the hypothesis that structured, quality sport experiences can lead to positive social and psychological outcomes. These studies will need to be rigorous in their design (e.g., randomization) and employ reliable and valid measures to negate the alternative explanations of selection and spuriousness.

Furthermore, there is a need for further investigation of the assets and challenges that young athletes and their families bring to the sport experience. A comprehensive set of both positive and negative outcomes associated with sport participation must also be considered, for only then will we be able to conclude whether the positive impacts of sport participation outweigh the negative ones. In addition, this research can help identify areas to target in order to improve the quality of the sport experience. For example, if sport has a positive impact on constructs such as self-concept and self-regulation, yet is also associated with increased alcohol use, there may be areas to address within the sport structure or culture to enhance the benefits of sport and reduce the risks.

Finally, while this scoping review generally supports (with noted limitations considered) a positive link between sport participation and positive self-concept, self-control, and pro-social outcomes like teamwork and loyalty, it remains to be seen whether these factors actually mediate the association between sport participation and alcohol and drug use. More focused work testing these pathways is required. Indeed, the inter-relationships among these factors are likely to be complex.

Conclusions

The goal of the scoping review was to assess whether sport participation is related to psychological and social factors relevant to youth alcohol and drug use. A related goal was to assess whether this relationship varied based on the quality of youths’ sport experience. Results indicated that sport participation is related to self-esteem, self-regulation, life skills, and pro-social behaviour. The heterogeneity across studies suggests a convergence in results supporting the general hypothesis that sport is associated with positive psychological and social development. At the same time, we think caution is warranted in drawing conclusions from the body of literature, as it is difficult to make definitive statements about replication of results across time, context, and outcome. Furthermore, only a few studies appear to consider possible negative social and psychological outcomes associated with sport, suggesting a potential positive reporting bias. Although there was an indication in the literature that the sport context influenced youth outcomes, no research provided a clear definition of a quality sport experience.

The psychological and social factors identified in this review might mediate the relationship between sport participation and alcohol and drug use among youth. Yet these factors also appear to be insufficient to fully understand the likely multiple connections between sport participation and alcohol and drug use. Future research examining the impact of the sport context on youth developmental outcomes, including alcohol use, other drug use, and psychological and social factors, is needed. The connections
among these factors in specific relation to alcohol and other drug use remain a critical focus for future research.

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