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# A Systematic Review of Life Skill Development Through Sports Programs Serving Socially Vulnerable Youth

Niels Hermens, Sabina Super , Kirsten T. Verkooijen, and Maria A. Koelen

Wageningen University and Research

## ABSTRACT

**Purpose:** Despite the strong belief in sports programs as a setting in which socially vulnerable youth can develop life skills, no overview exists of life skill development in sports programs serving this youth group. Therefore, the present systematic review provides an overview of the evidence on life skill development in sports programs serving socially vulnerable youth and, insofar as it was investigated in the included studies, of the conditions conducive to life skill development in these sports programs. **Method:** Potentially relevant studies published during 1990 to 2014 were identified by a search in 7 electronic databases. The search combined terms relating to (a) sport, (b) youth AND socially vulnerable, and (c) life skills. Eighteen of the 2,076 unique studies met the inclusion criteria. **Results:** Each included study reported that at least 1 life skill improved in youth who participated in the studied sports program. Improvements in cognitive and social life skills were more frequently reported than were improvements in emotional life skills. Only a few of the included studies investigated the conditions in the studied sports programs that made these programs conducive to life skill development. **Conclusions:** Sports programs have the potential to make a difference in the life skill development of socially vulnerable youth. This conclusion needs to be treated with some caution, because the studies experienced many challenges in reducing the risk for bias. Several alternative research strategies are suggested for future studies in this field.

## ARTICLE HISTORY

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## KEYWORDS

Adolescents; positive youth development; psychosocial development; sports intervention

This systematic review provides an overview of the evidence on life skill development in sports programs serving socially vulnerable youth. Socially vulnerable youth represent a broad group, ranging from youth living in areas of low socioeconomic status (SES) to youth receiving residential care or nonresidential counseling. A common denominator is that they face stressors in their everyday life, such as income poverty, poor family management, low housing quality, and peers being involved in problem behavior (Feinberg, Jones, Greenberg, Osgood, & Bontempo, 2010; Hawkins, Catalano, & Arthur, 2002). These stressors may lead to feelings of incompetence, social disconnectedness, negative experiences with societal institutions (e.g., family, school, and health care), a lack of ambition (Haudenhuyse, Theeboom, & Skille, 2014; Vettingburg, 1998), and a reduced chance for participating in meaningful activities, such as sports (Vandermeersch, Vos, & Scheerder, 2013). Programs aiming to support youth in dealing with stressors of everyday life are often grounded in the positive youth development (PYD) perspective, which emphasizes that youth, including

those who are socially vulnerable, have the potential to develop the life skills they need to deal with the stressors they face (Damon, 2004; Lerner et al., 2005). Moreover, life skills are important predictors of youths' future well-being, academic performance, and job satisfaction (Ridder, Lensvelt-Mulders, Hinkemeyer, Stok, & Baumeister, 2012; Zins, Weissberg, Wang, & Walberg, 2004).

Life skills, defined as “those skills that enable individuals to succeed in the different environments in which they live, such as school, home and in their neighborhoods” (Danish, Forneris, Hodge, & Heke, 2004, p. 40), can be divided into emotional, cognitive, and social skills (Lerner et al., 2005; Turnnidge, Côté, & Hancock, 2014). Emotional life skills pertain to one's internal sense of well-being and self-worth (Lerner et al., 2005). The development of emotional skills is particularly important for socially vulnerable youth because they face mental health problems more often than do nonvulnerable youth (Reiss, 2013; Wille, Bettge, & Ravens-Sieberer, 2008). Cognitive life skills pertain to abilities such as self-regulation, decision

**CONTACT** Niels Hermens  [n.j.hermens@uu.nl](mailto:n.j.hermens@uu.nl)  Utrecht School of Governance, Utrecht University, Bijlhouwerstraat 6-8, 3511 ZC, Utrecht, The Netherlands.

Niels Hermens and Sabina Super contributed equally to this article. Niels Hermens is now at Utrecht University.

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making, and impulse control (Lerner et al., 2005). Such cognitive skills are shown to be protective factors for the stressors that socially vulnerable youth face in their everyday lives (Lösel & Farrington, 2012). Social skills pertain to skills that can be used in interpersonal relationships, such as communication skills, conflict resolution, and prosocial behavior (Lerner et al., 2005). The development of social skills is important for socially vulnerable youth because those skills may help them to decrease social disconnectedness, which is one of the major indicators for social vulnerability (Haudenhuyse et al., 2014).

Sports programs (i.e., formally structured activities that take place for a specific time period and in the presence, or under the instruction, of adults (E. Bean, Whitley, & Gould, 2014; Fuller, Percy, Bruening, & Cotrufo, 2013; Ullrich-French, McDonough, & Smith, 2012)), are believed to provide youths with settings for life skill development (Fraser-Thomas, Côté, & Deakin, 2005). It has been argued that positive experiences in sports programs lead to improved emotional life skills, such as increased self-worth or reduced depressive symptoms (Eime, Young, Harvey, Charity, & Payne, 2013). A suggested mechanism for the development of cognitive life skills is the goal-setting behavior required in the sports setting, which gives young people the opportunity to hone their cognitive skills (Jonker, Elferink-Gemser, & Visscher, 2011). Moreover, the sports setting is an environment rich in feedback, which is considered to be a prerequisite for the development of cognitive life skills such as self-regulation skills (Jonker et al., 2011). Besides these social and psychological mechanisms, physiological mechanisms are suggested for the relationship between sports participation and emotional and cognitive outcomes. For instance, it has been shown that physical activity leads to changes in neurotransmitters associated with improved well-being (Lubans, Plotnikoff, & Lubans, 2012), self-esteem (Cerin, 2010), and executive functioning (Diamonds & Lee, 2011). Finally, Bailey, Hillman, Arent, and Petitpas (2013) suggested that as many sports programs take place in a social setting, such programs provide youth with opportunities to develop social skills such as communication skills, conflict resolution, and empathy.

To develop and run sports programs serving socially vulnerable youth, policymakers and social professionals will benefit from an overview of what is known about life skill development in such programs. In a systematic review of the psychological and social benefits of participation in sport for children and adolescents, Eime et al. (2013) found that improved self-esteem, social interaction, and fewer depressive symptoms were the

most commonly reported psychological and social benefits of sports participation. However, the possibility of generalizing their findings to socially vulnerable youth is limited, because their overview did not distinguish between socially vulnerable and nonvulnerable youth. Such a distinction is needed because the mechanisms underlying life skill development through sports may differ for these two youth groups (Haudenhuyse et al., 2014). Also, Eime et al. did not distinguish between studies on sports programs and so-called sports-for-development programs or sport-plus programs. Sports-for-development programs are sports programs intentionally structured to serve socially vulnerable youth's sports participation and/or life skill development (Coalter, 2015). Only Lubans et al. (2012) systematically reviewed studies on the benefits of sports programs serving socially vulnerable youth. The authors provided an overview of quantitative studies published during 1990 to 2011 on the impact of outdoor activity programs, sports and skill-based programs, and physical fitness programs (e.g., aerobics and circuit training) on the social and emotional well-being of socially vulnerable children and youth aged 4 to 18 years old. Based on six studies that examined the benefits of sports programs, Lubans et al. concluded that sports programs potentially have beneficial outcomes for socially vulnerable youth but stated that their findings should be treated with caution because of the low number of included studies.

It is useful to expand on Lubans et al.'s (2012) work with more recent studies for several reasons. First, to our knowledge, additional quantitative studies that have examined life skill developments in sports programs serving socially vulnerable youth have been published since Lubans et al.'s review (e.g., D'Andrea, Bergholz, Fortunato, & Spinazzola, 2013; and Terry, Hahn, & Simjanovic, 2014). Second, it is useful to expand on Lubans et al.'s work with qualitative studies that have described sports coaches', parents', and youth's perceptions of life skill development in these programs, such as the studies by Beaulac, Kristjansson, and Calhoun (2011) and Riley and Anderson-Butcher (2012). A final reason for conducting the present review is that previous reviews in this field have ignored the conditions conducive to life skill development that have been investigated in the included studies. This is unfortunate, because it has been shown that sports programs need to meet certain conditions to provide a setting that supports life skill development (Coalter, 2015; Fraser-Thomas et al., 2005), such as positive peer relationships and sports coaches creating a task-oriented sports climate (Haudenhuyse et al., 2014; Newton et al., 2007; Smith, Smoll, & Cumming,



2007). Conducive conditions seem to be particularly important in sports programs serving socially vulnerable youth. For instance, the emotional baggage of these youth may lead to negative sport experiences and mechanisms of exclusion in sports settings that emphasize competition and masculinity (C. F. Bean, Fortier, Post, & Chima, 2014; Haudenhuyse et al., 2014). Such exclusion in sports and negative sports experiences have been found to increase feelings of rejection and social isolation that can further push these youth down the spiral of vulnerability (Super, Wentink, Verkooijen, & Koelen, 2017).

### Study aim

To summarize, despite the increased attention on sports programs as a setting for life skill development in socially vulnerable youth, no recent overview exists of quantitative and qualitative studies investigating life skill development in sports programs serving this group. Therefore, the main aim of the present review was to describe the evidence of life skill development in sports programs serving socially vulnerable youth from quantitative and qualitative studies. As previous systematic reviews have not addressed conditions conducive to life skill development that have been investigated in studies on life skill development in sports programs, an additional aim of this review was to describe what is known about conducive conditions from studies on life skill development in sports programs serving socially vulnerable youth. Accordingly, two research questions were formulated: (a) What is the evidence of life skill development in sports programs serving socially vulnerable youth from both quantitative and qualitative studies? And (b) what is known about conducive conditions for life skill development from these studied sports programs? By addressing these two research questions, this review supports the knowledge base that will help policymakers and practitioners to select and develop sports programs serving socially vulnerable youth and that will support researchers to develop new studies in this field.

### Methods

To identify relevant studies, the first author developed a search in continuous deliberation with the other authors. The search combined terms relating to (a) sport, (b) youth AND socially vulnerable, and (c) life skills. In line with Turnnidge et al. (2014), the major outcome variables were terms related to emotional, cognitive, and social life skills. The full search is available in the Appendix. We did not add search terms for

Research Question 2, because we aimed to explore what is known about conducive conditions for life skill development in studies included to answer Research Question 1. The search was carried out in seven electronic databases (Scopus, SportDiscus, PsycINFO, SOCindex, Psychology and Behavioral Sciences Collection, PubMed, and Web of Science), resulting in a set of 2,674 records. After removing 598 duplications, the first and second author screened the titles and abstracts of 2,076 unique studies published during 1990 to December 31, 2014 (see Figure 1). This article has no statement of ethical approval or informed consent because it is a study review.

To be included, studies had to meet three initial criteria. The study population had to be *socially vulnerable youth* aged 10 to 23 years, the setting had to be a *sports program* serving this youth group, and *life skill development* had to be reported. Studies were excluded if they did not present primary data, were not published in English or Dutch, and/or were published before 1990. Both authors started to screen titles and abstracts independently. After 1 day of screening, when each author had screened the titles and abstracts of 67 studies, they compared their decisions. The interrater reliability of the decisions between the two authors was strong: 0.96 (McHugh, 2012). Having discussed the 3 studies on which they decided differently, the authors agreed to exclude studies at this screening stage only if it was obvious that the study did not meet the inclusion criteria. The remaining articles were divided between the two authors to screen titles and abstracts, and 147 studies remained for full-text assessment after this screening process.

The first and second authors read the full texts of all 147 studies and independently considered the inclusion of the studies. At this stage, two exclusion criteria were added. We excluded studies if the sports activity was not the core element of the program but merely one of the program elements among several other nonsports elements. We also excluded studies if they only reported on outcomes directly related to the sports context, such as physical activity efficacy or teamwork in the sports setting. If the authors disagreed on a study, the third author read the study and discussed with the first and second author whether it should be included or excluded. After the full-text assessment, 22 studies remained.

The last inclusion criterion was that the study had to be of medium or high rigor. To exclude studies of low rigor, we assessed the rigor of the 22 studies using 10 criteria derived from the TAPUPAS (Transparency, Accuracy, Purposivity, Utility, Propriety, Accessibility, Specificity) framework (Pawson, Boaz, Grayson, Long, & Barnes, 2003). The TAPUPAS framework was chosen to develop the



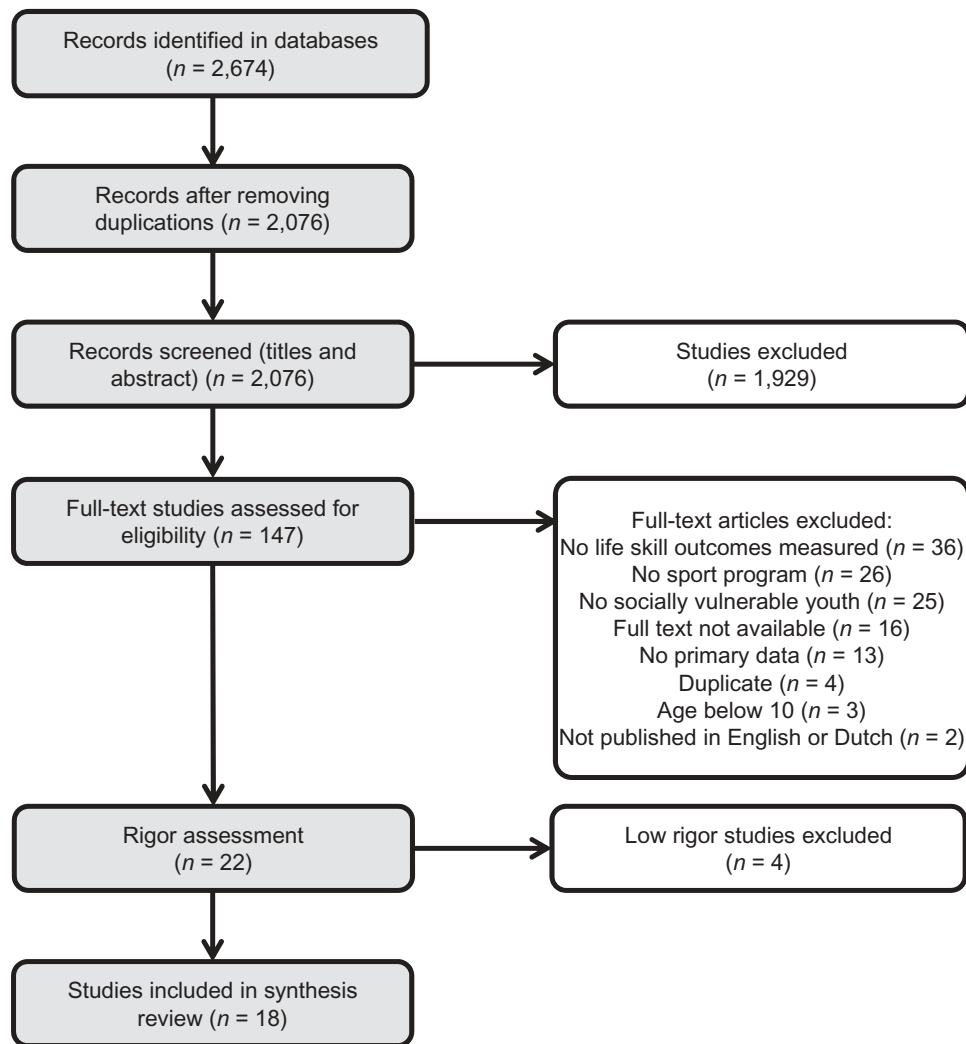


Figure 1. Flowchart of the review process.

rigor assessment criteria, because it contains general quality criteria that can be applied to both quantitative and qualitative studies. The 10 criteria were: clear description of study aim; appropriate size of sample; sound selection/sampling of sample; appropriate description of the context of the study and of the study participants; conclusions supported by the data; sound description of limitations; sound data; appropriate analysis to answer the research question; logical, traceable, and clear documentation of the research process; and sound extrapolation of conclusions to the theoretical population. To assess the rigor of the studies, the first two authors independently scored the studies on each of the 10 criteria: 1 point if a study satisfied a criterion and 0 points if a study did not satisfy a criterion. Hence, in total, studies

could be assigned 10 points, or 1 for each criterion. When the first and second author disagreed about the rigor assessment of a study, they discussed it with the third author, who also read all 22 studies. Studies that received fewer than 5 points were assigned low rigor, studies that received 5 points to 7 points were assigned medium rigor, and studies that received 8 or more points were assigned high rigor (Van Dillen, Van Binsbergen, Koelen, & Hiddink, 2013). At the end of this stage, we excluded 4 studies because they were of low rigor, leaving 18 studies in the synthesis.

To synthesize the data, the first author extracted data from the included studies regarding the type of sports program, the participants, the study design and methods, and the study results. Thereafter, the first author wrote summaries of the extracted data and had ongoing



discussions on the synthesis of the data with the second author. The four authors discussed the summaries and synthesis several times in the review process.

## Results

This section starts with an overview of the studied sports programs and a brief summary of their designs and methods. Thereafter, the findings of the studies are presented along the three major outcomes: emotional life skills, cognitive life skills, and social life skills. Finally, we give an overview of what the studied sports programs tell us about conditions conducive for life skill development.

### Sports programs

Table 1 gives an overview of the 18 sports programs studied. The programs were conducted in urban areas in six countries, but mostly in the United States ( $n = 10$ ) or Canada ( $n = 3$ ). The settings in which they were conducted were schools in low-SES areas ( $n = 9$ ), summer camps serving socially vulnerable youth ( $n = 4$ ), community centers or community sports clubs in deprived areas ( $n = 3$ ), and residential care ( $n = 2$ ). In most of the programs, youth participated voluntarily. In some of the programs in the school setting, youth were selected for participation by a school staff member. Twelve of the 18 programs included PYD principles (see Table 1). In line with PYD theory (Damon, 2004), these programs aimed to foster positive development. Some of these programs included PYD principles by building upon the teaching personal and social responsibility (TPSR) model, which is based on the idea that youth can develop effort and teamwork skills, self-direction and goal setting, leadership and helping skills, and respect for others if they play an active role in coaching the sports activities (Hellison, 2003). Other PYD principles included in the sports programs were a mastery sports climate (e.g., Beaulac et al., 2011), a positive peer and coach–youth relationship (e.g., E. Bean et al., 2014; Ullrich-French et al., 2012), and facilitation of positive sports experiences (e.g., Holt, Sehn, Spence, Newton, & Ball, 2012; Terry et al., 2014). In addition to the sports programs based on PYD principles, four programs included principles that should empower youth to engage in program development and in decision-making processes in the sports activities. For instance, the program studied by Bruening, Dover, and Clark (2009) was based on theories of engagement and free-choice learning, and the program studied by Bonhauser et al. (2005) involved youth in deciding

which sports were offered in the sports program. Finally, one program was based on therapeutic procedures (D’Andrea et al., 2013), and one study did not mention the program’s theory base (Hasanpour, Tabatabaei, Alavi, & Zolaktaf, 2014). The six programs that were not based on PYD principles aimed to increase physical activity and physical fitness, rather than foster positive developments (see Table 1).

### Designs and methods

The study designs and methods varied greatly between studies and ranged from experimental quantitative studies to qualitative interview studies (see Table 2). Most of the quantitative studies applied validated instruments to assess youth’s life skills, but different instruments were used to assess the same life skill across studies. For instance, to assess self-esteem, Bonhauser et al. (2005) used the Tennessee Self-Concept Scale; Laberge, Bush, and Chagnon (2012) used the Rosenberg Global Self-Esteem Scale; and Hasanpour et al. (2014) used the Coppersmith Self-Esteem Inventory. In addition to youth, the participants in the qualitative studies involved parents and program staff members.

### Overview of the study results

#### Emotional life skills

Six of the included studies reported on emotional life skills, and four of them reported improvements (see Table 3). Overall, the findings presented in this section give some indications that sports programs serving socially vulnerable youth are settings in which internalizing symptoms decrease. However, the findings regarding the development of other emotional life skills (e.g., global self-worth, mood, and hope) were mixed. An interesting observation was that improvements in emotional life skills were more frequently reported in quantitative studies than in qualitative studies.

Decreases in internalizing symptoms were reported in two quantitative studies (Bonhauser et al., 2005; D’Andrea et al., 2013), which were conducted in two very different settings. D’Andrea et al. (2013) assessed whether participation in basketball activities in addition to treatment as usual affected internalizing symptoms (i.e., depression, anxiety, withdrawal, and somatic complaints) in traumatized girls in a residential treatment center. The authors found that internalizing symptoms in the girls who participated in the basketball activities decreased, as compared with a comparison group of girls who received treatment as usual (D’Andrea et al., 2013). Bonhauser et al. (2005) reported that anxiety



**Table 1.** Aims, target groups, settings, and content of the sports programs.

	Setting	Theory base	Aim of the sport program	Participants in the sport program	Selection and background of participants	Program content
Anderson-Butcher et al. (2014)	Summer camp	Positive youth development principles and the TPSR Model	Foster social competence	Boys and girls aged 9–16 years	Voluntary participation of youth from deprived area	Summer camp of 19 successive workdays. Each day included 1 hr of play-based social skills instruction and 3 hr of sports instruction.
Armour & Duncombe (2012)	School	Positive youth development, elite role models	Support teachers to work with young people who experience difficulties in school life	Boys and girls aged 10–19 years	Teachers selected pupils based on their professional judgements about who could benefit from the program.	Weekly sports activities for 8–12 weeks. The type of sports (e.g., football, skate boarding, rugby, judo) varied among schools. In half the schools, elite-sports people (i.e., role models) visited three of the sessions.
Armour & Sandford (2013)	School	Positive youth development	Contribute to local community, aid the personal, social, and educational development of participants; and reengage pupils in education	Boys and girls aged 13–14 years	Teachers selected youth based on their professional judgment about which youth were disengaged.	One full week of outdoor sport activities and 1 additional weekend for pupils most in need
E. Bean et al. (2014)	Community sports club	Positive youth development, emphasizing positive coach–youth relationship	Develop life skills and character	Boys and girls aged 10–18 years	Voluntary participation of youth from deprived area	Organized practices and scheduled competition; sports coaches received training on how to build relationships with the participants and how to act as a mentor.
Beaulac et al. (2011)	Community recreation center	Positive youth development	Respond to an identified need for prosocial, structured, and accessible physical activity programs	Boys and girls aged 11–16 years	Voluntary participation of youth from a deprived area	Weekly free dance classes for 13 successive weeks
Bonhauser et al. (2005)	School	Adult learning approach	Improve physical fitness	Boys and girls around age 15 years	Compulsory physical activity classes for all ninth graders at two schools in a deprived area	Weekly sports sessions of 1.5 hr for a full school year. Each session included stretching; arm, leg, and trunk movement; fast walking; running and jumping; and sports practice.
Bonnette et al. (2001)	Summer camp	Indirect teaching methods for critical thinking	Not reported	Boys aged 10–13 years	Voluntary participation of youth from financially challenged families	Sports-based summer camp of 3 weeks. Each day included 40 min of sports skills instruction. The teachers of half the groups were encouraged to promote critical thinking in the youth.
Bruening et al. (2009)	Community center	Theories of engagement and free-choice learning	Promote healthy life choices in preadolescent girls of color	Girls aged 9–13 years	Voluntary participation of girls who experienced problems in several areas (e.g., family, school)	Two 2-hr sessions a week. Each session included sports instruction, life skills instruction, and a dinner including a nutrition lesson.
D'Andrea et al. (2013)	Residential treatment setting	Therapeutic procedures of the attachment, regulation and competency framework	Not reported	Girls aged 12–21 years	Voluntary participation of traumatized girls in residential treatment with histories of severe emotional and behavioral problems	For a period of 5 months, one basketball game each week against a team of girls from another residential treatment setting. Also, a basketball skills clinic every 6th week.
Fuller et al. (2013)	School	Positive youth development	Provide experiences that increase opportunities for positive youth development	Boys aged 10–13 years	Selection by the school family resource counselors at schools where 95% of the pupils are eligible for free/reduced-price meals	Twenty-four weeks of daily 2-hr sessions, including sports (basketball, football, floor hockey, and soccer) and other physical activities, life skills programming, and pertinent nutrition lesson
Hasanpour et al. (2014)	Pseudo-family center	Not reported	Not reported	Girls aged 13–19 years	Random selection of orphan girls in pseudo-family centers	Twenty-four aerobic sessions (10-min warm-up, 40 min of exercise, 10-min cool-down) in 2 months
Hellison & Wright (2003)	School	Positive youth development principles and personal–social responsibility model	Use basketball to teach youth to take responsibility for coaching, helping, and leading the sports activities	Boys and girls aged 10–14 years	Voluntary participation of pupils who were selected by teachers because they showed discipline problems at school	Once-a-week basketball activity

(Continued)



Table 1. (Continued).

	Setting	Theory base	Aim of the sport program	Participants in the sport program	Selection and background of participants	Program content
Holt et al. (2012)	School	Positive youth development	Contribute to positive development of youth	Boys and girls aged around 12 years	Voluntary participation of students at a school in a deprived inner-city area	Lunchtime sport activities three times a week for a full school year
Laberge et al. (2012)	School	Social marketing principles	Stimulate lunchtime physical activity at impoverished middle and secondary schools	Boys and girls aged 13–14 years	Voluntary participation of students	Diverse lunchtime physical activity activities of at least 45 min for 16 successive weeks on 3 to 5 days a week
Riley & Anderson-Butcher (2012)	Summer camp	Positive youth development principles and the TPSR model	Increase social competence, self-control, effort, teamwork, and social responsibility	Boys and girls aged 9–16 years	Voluntary participation of youth from a deprived area	Nineteen successive workdays, 4 hr each day including 1 hr of play-based social skills instruction and 3 hr of sports instruction
Terry et al. (2014)	School	Focus on physical fitness, enjoyment, and safety (positive youth development principles)	Increase participation in sports clubs and build fitness, technical skills, and positive social attitudes	Boys and girls aged 11–12 years	Voluntary participation	Nineteen 50-min boxing sessions (warm-up, physical and technical part, warm-down) spread over 8 weeks.
Ullrich-French et al. (2012)	Summer camp	Positive youth development	Address personal and social assets and environmental barriers to healthy living	Boys and girls aged 9–16 years	Voluntary participation of low-income youth	Four weeks of daily (Monday–Friday) physical activity activities
Walsh et al. (2010)	School	Positive youth development principles and the TPSR model	Improve responsibility skills	Boys and girls aged 9–11 years	Voluntary participation of youngsters from a school in a low-income and minority neighborhood	One hour of basketball practice every week for a period of 2 school years. The first eight sessions were used to establish norms, from the ninth session focus on self-direction, goal setting, leadership, and helping. Games led by the participants themselves.

Note. TPSR = teaching personal and social responsibility.



**Table 2.** Description of the included studies and study results.

Study	Design	Method	Instrument	Sample size	Emotional life skills	Cognitive life skills	Social life skills
Anderson-Butcher et al. (2014)	Pretest-posttest	Quantitative	Survey including a scale for social responsibility	287 youths			Increase in <i>social responsibility</i> (i.e., helping others; stronger increase for youth with low scores at T0 and for youth with strong sense of belonging to sport program)
Armour & Duncombe (2012)	Quasiexperimental	Quantitative	Pupil profiles written by teachers (quantified for the analysis)	5,253 pupils: 2,701 in sports program including elite-sports role models, 2,552 in sports program without		Perceived improvements in self-esteem	Perceived improvements in social skills
Armour & Sandford (2013)	Quasiexperimental	Mixed	Pupil profiles written by teachers (quantified for the analysis), interviews, and focus groups	Profiles of 560 pupils: 440 experimental group and 120 comparison group. Interviews: 19 mentors, 9 school staff, 5 program staff. Focus groups: 20 pupils, 8 mentors		Perceived improvements in self-confidence (i.e., willingness to try new things)	Perceived improvements in communication skills, teamwork skills, and empathy
E. Bean et al. (2014)	Posttest	Qualitative	Semistructured interviews	23 youth who participated in the program for at least 3 years		Perceived improvements in self-motivation and future focus	Perceived improvements in social interaction and conflict resolution skills
Beaulac et al. (2011)	Posttest	Qualitative	In-depth interviews and focus groups	14 youth, two focus groups with parents, and one focus group with program staff	Perceived improvement in mood	Perceived improvements in self-confidence (trying new activities)	Perceived improvements in respect for diversity
Bonhauser et al. (2005)	Quasiexperimental	Quantitative	Survey including the Hospital Anxiety and Depression Scale and the Tennessee Self-Concept Scale	198 youth: 98 from two experimental schools and 100 from two comparison schools	Decrease in anxiety symptoms; no change in depressive symptoms	Increase in self-esteem	
Bonnette et al. (2001)	Quasiexperimental	Quantitative	Survey including the New Jersey Test of Reasoning Skills and the Self-Perception Profile for Children	80 youth: 36 in a sport skills instruction+ group and 44 in a sport skills instruction group	No change in global self-worth	Increase in critical thinking; stronger increase in sport+ group than in sport group	
Bruening et al. (2009)	Case studies	Qualitative	Open interviews	Five cases; for each case, two interviews with the youth and two with a parent			Perceived increase in prosocial involvement; few examples of improvement in behavioral competencies
D'Andrea et al. (2013)	Quasiexperimental	Quantitative	Survey, including Achenbach's Child Behavior Checklist	88 girls: 62 in intervention group receiving sport activities in addition to treatment as usual and 26 in the comparison group receiving treatment as usual	Decrease in internalizing symptoms (i.e., anxiety, depression, withdrawal, and somatic complaints)		
Fuller et al. (2013)	Case studies	Qualitative	Open interviews	Eight cases; for each case, one interview with the youth and one with a parent		Perceived improvement in self-efficacy, resistance skills, and self-concept	Perceived improvement in ability to communicate and ability to resolve conflict
Hasanpour et al. (2014)	Randomized controlled trial	Quantitative	Survey, including the Coppersmith Self-Esteem Inventory	66 girls		Increase in self-esteem	

(Continued)



Table 2. (Continued).

Study	Design	Method	Instrument	Sample size	Emotional life skills	Cognitive life skills	Social life skills
Hellison & Wright (2003)	Posttest	Quantitative	Retention data from attendance records and self-report data from evaluation surveys with open-ended questions	43 (out of 78) youth			43 youth perceived improvement in <i>social responsibility in the sports program</i> , and 5 of them perceived improvement in <i>responsibility skills in other settings</i>
Holt et al. (2012)	Posttest	Qualitative	Open interviews	59 youth and 8 school staff members			Perceived improvement in <i>empathy</i> (i.e., understanding and caring) No change in <i>social competence</i> or <i>interethnic relationships</i>
Laberge et al. (2012)	Quasiexperimental	Quantitative	Survey, including the Conners-Wells Adolescent Self-Report Scale, the Rosenberg Global Self-Esteem Scale, and a self-developed scale for interethnic relationships	222 youths: intervention group of 131 Grade 8 students and comparison group of 91 Grade 7 students from the same school		Increase in <i>concentration/attention</i> ; no change in <i>self-esteem</i> or <i>self-control</i>	
Riley & Anderson-Butcher (2012)	Posttest	Qualitative	Semistructured interviews	10 parents		Perceived improvements in <i>confidence, self-esteem, discipline, initiative, and taking responsibility for own actions</i>	Perceived improvements in the <i>ability to deal with conflicts, ability to adapt to different people, and communication skills</i>
Terry et al. (2014)	Quasiexperimental	Quantitative	Survey, including the Brunel Mood Scale and the Strengths and Difficulties Questionnaire	51 youth: 26 in the intervention group and 25 in the comparison group receiving a well-established nonphysical social development program 197 youth	No change in <i>mood</i>		Short-term (but not sustainable) decrease in <i>total difficulties score</i>
Ullrich-French et al. (2012)	Pretest-posttest	Quantitative	Survey, including the Self-Perception Profile for Children and the Children's Hope Scale		Increase in <i>global self-worth</i> (only for youth who participated more than one summer); no change in <i>hope</i>		Increase in <i>social competence</i> (only for girls)
Walsh et al. (2010)	Posttest	Qualitative	Semistructured interviews and field notes	13 youth and 3 staff members		Perceived improvements in <i>effort, self-direction, and goal setting</i>	Perceived improvements in <i>respecting others, teamwork, leadership, and helping others</i>



symptoms, but not depressive symptoms, reduced for youth who participated in weekly sports sessions at secondary schools in a deprived area.

The studies that included data on other emotional life skills provide a mixed picture. First, while Beaulac et al. (2011) reported an improved mood in youth participating in weekly dance classes at a community recreation center, Terry et al. (2014) reported no change in mood in youth participating in 19 boxing sessions at schools. A possible explanation for this difference in findings is the difference in sports settings. Another possible explanation is the difference in research methods: Beaulac et al. interviewed youth and their parents, whereas Terry et al. conducted a quantitative quasiexperimental study. Second, Ullrich-French et al. (2012) reported an improvement in global self-worth in youth participating in a sports-based summer camp, but Bonnette, McBride, and Tolson (2001) did not. An explanation for these mixed results may be that the sports coaches in the summer camp studied by Ullrich-French et al. received training on how to provide a supportive atmosphere and positive coach–youth connection, whereas the sports coaches in the program studied by Bonnette et al. did not seem to pay specific attention to positive youth–coach relationships. Ullrich-French et al. also assessed developments in hope, defined as belief in the ability to find routes to goals, but they found it did not improve.

### **Cognitive life skills**

Eleven studies reported on the development of cognitive life skills, which can be divided into two categories: self-regulation skills and self-esteem/self-confidence (see Table 3). Overall, each study that reported on such skills revealed that at least one cognitive life skill improved. Qualitative and quantitative studies were equally represented in the 11 studies.

The self-regulation skills that were reported as improving were very diverse (i.e., self-motivation, effort, future focus, goal setting, self-direction, critical thinking, self-concept, self-efficacy, resistance skills, concentration/attention, self-control, taking responsibility for one's own actions, and discipline). The settings of the sports programs in which youth were reported as developing self-regulation were diverse as well. For instance, one program included competitive sports activities at a community sports club (E. Bean et al., 2014), whereas another program was a sports-based summer camp in which program staff tried to create a mastery-oriented environment (Ullrich-French et al., 2012). Four of the programs in which participants were reported as developing self-regulation skills were based on PYD principles (E. Bean et al., 2014; Fuller

et al., 2013; Riley & Anderson-Butcher, 2012; Walsh, Ozaeta, & Wright, 2010). One example of a PYD-based sports program that strengthened the development of self-regulation (i.e., self-efficacy, self-concept, and resistance skills) was a program that tried to create a supportive and empowering environment (Fuller et al., 2013). Other examples were a program in which sports coaches encouraged and supported youth to coach the sports activities (Walsh et al., 2010), a program in which coaches conducted a mastery-oriented coaching style (E. Bean et al., 2014), and a program that focused on respect, effort, self-direction, and caring in the sports program context (Riley & Anderson-Butcher, 2012). From interviews with youth, their parents, and program staff, E. Bean et al. (2014), Riley and Anderson-Butcher (2012), and Walsh et al. (2010) reported that they were settings where youth developed self-regulation skills like discipline, initiative taking, effort, self-direction, goal setting, self-motivation, and future focus. An interesting observation was that most studies that showed improvements in self-regulation were qualitative studies. The two studies that quantitatively assessed self-regulation skills revealed improvements in attention/concentration (Laberge et al., 2012) and critical thinking (Bonnette et al., 2001). In contrast to these positive results, self-control was not found to increase in the study by Laberge et al. (2012).

Improvements in self-esteem and self-confidence were reported in multiple studies. These studies were again very diverse in terms of the setting of the sports programs and the research methods. For instance, improvements in self-esteem were reported in a randomized controlled trial on the impact of aerobic sessions on orphan girls' self-esteem (Hasanpour et al., 2014), in a quasiexperimental study on the impact of weekly sports sessions at schools in deprived areas (Bonhauser et al., 2005), in interviews with parents of youth who participated in a sports-based summer camp (Riley & Anderson-Butcher, 2012), and in pupil profiles written by teachers (Armour & Duncombe, 2012). Self-confidence, defined as a willingness to try new things, was reported as improving in disengaged youth selected by school teachers to participate in a 1-week outdoor sports activities program (Armour & Sandford, 2013) and in youth who participated in weekly dance classes at a community recreation center (Beaulac et al., 2011). On the basis of interviews with parents and program staff, Beaulac et al. (2011) offered a possible explanation for growth in self-confidence, which was that the dance classes were a setting in which youth could experience feelings of success, which in turn may have increased their confidence in trying new activities in nonsports settings. In contrast to these positive findings on self-



**Table 3.** Summary of the study results.

Study	Life skill	Finding
<i>Emotional life skills</i>		
D'Andrea et al. (2013)	Internalizing symptoms, including anxiety and depression	–
Bonhauser et al. (2005)	Anxiety	–
Bonhauser et al. (2005)	Depressive symptoms	0
Ullrich-French et al. (2012)	Global self-worth	+
Bonnette et al. (2001)	Global self-worth	0
Beaulac et al. (2011)	Mood	+
Terry et al. (2014)	Mood	0
Ullrich-French et al. (2012)	Hope	0
<i>Cognitive life skills</i>		
E. Bean et al. (2014)	Self-motivation	+
Walsh et al. (2010)	Effort	+
E. Bean et al. (2014)	Future focus	+
Walsh et al. (2010)	Goal setting	+
Walsh et al. (2010)	Self-direction	+
Bonnette et al. (2001)	Critical thinking	+
Fuller et al. (2013)	Self-concept (i.e., ability to realize strengths and weaknesses)	+
Fuller et al. (2013)	Self-efficacy	+
Fuller et al. (2013)	Resistance skills	+
Laberge et al. (2012)	Concentration/attention	+
Laberge et al. (2012)	Self-control	0
Riley & Anderson-Butcher (2012)	Taking responsibility for one's own actions	+
Riley & Anderson-Butcher (2012)	Discipline	+
Riley & Anderson-Butcher (2012)	Initiative	+
Armour & Duncombe (2012)	Self-esteem	+
Bonhauser et al. (2005)	Self-esteem	+
Hasanpour et al. (2014)	Self-esteem	+
Laberge et al. (2012)	Self-esteem	0
Riley & Anderson-Butcher (2012)	Self-esteem	+
Armour & Sandford (2013)	Self-confidence (i.e., willingness to try new things)	+
Beaulac et al. (2011)	Self-confidence (i.e., trying new activities)	+
<i>Social life skills</i>		
Armour & Duncombe (2012)	Social skills	+
Laberge et al. (2012)	Social competence	0
Ullrich-French et al. (2012)	Social competence	+
Bruening et al. (2009)	Prosocial involvement	+
Terry et al. (2014)	Total social difficulties	0
Anderson-Butcher et al. (2014)	Social responsibility (i.e., thoughts about helping others)	+
Walsh et al. (2010)	Helping others	+
Armour & Sandford (2013)	Empathy	+
Holt et al. (2012)	Empathy	+
Beaulac et al. (2011)	Respect for diversity	+
Walsh et al. (2010)	Respecting others	+
Riley & Anderson-Butcher (2012)	Ability to adapt to different people	+
Armour & Sandford (2013)	Teamwork	+
Walsh et al. (2010)	Teamwork	+
Walsh et al. (2010)	Leadership	+
Hellison & Wright (2003)	Social responsibility	±
E. Bean et al. (2014)	Social interaction	+
Armour & Sandford (2013)	Communication skills	+
Fuller et al. (2013)	Communication skills	+
Riley & Anderson-Butcher (2012)	Communication skills	+
E. Bean et al. (2014)	Conflict resolution skills	+
Fuller et al. (2013)	Conflict resolution skills	+
Riley & Anderson-Butcher (2012)	Conflict resolution skills	+

esteem and self-confidence, Laberge et al. (2012) did not find that self-esteem improved in a quasiexperimental quantitative study on 16 weeks of lunchtime sports sessions at schools in deprived areas. The authors suggested that self-selection bias (i.e., youth high in self-esteem were more likely to participate than youth low in self-esteem) may be a reason for why they did not find an increase in self-esteem (Laberge et al., 2012).

### **Social life skills**

Fourteen studies reported on developments in social life skills, and 12 of them showed improvements.

Most of these reported social life skills can be divided into two broad categories (i.e., social responsibility skills and social interaction skills). Besides the two broad categories, several other social skills were examined in the studied sports programs. An interesting observation was that all 7 qualitative studies reported improvements in social life skills, whereas only 5 of 11 quantitative studies did.

Improvements in social responsibility skills were reported in seven studies. Five of these programs were based on the previously mentioned TPSR model, which aims to develop personal and social responsibility. The authors suggested several possible explanations for why



participation in the sports program could have led to improvements in social responsibility, and many of these explanations refer to elements of the TPSR model. One example of such an explanation was that the sports coaches continuously discussed the transference of self-direction and goal setting from the sports setting to other settings (Anderson-Butcher, Riley, Amorose, Iachini, & Wade-Mdivanian, 2014; Walsh et al., 2010). Other authors suggested that improvements in social responsibility may be explained by the involvement of caring sports coaches (Hellison & Wright, 2003), the inclusion of a life skill education part (Riley & Anderson-Butcher, 2012), and the presence of negative events, like injuries, that provide opportunities to develop empathy (Holt et al., 2012). Besides studies on sports programs based on the TPSR model, two other studies showed improvements in social responsibility skills. A possible mechanism suggested for the improvement experienced in these sports programs was that the sports program may be a setting in which youth notice that different people have different competencies, which in turn may increase respect for diversity (Beaulac et al., 2011). Armour and Sandford (2013) did not provide an explanation for the improvement in empathy.

Two social interaction skills (i.e., communications skills [Armour & Sandford, 2013; Fuller et al., 2013; Riley & Anderson-Butcher, 2012] and conflict resolution skills [E. Bean et al., 2014; Fuller et al., 2013; Riley & Anderson-Butcher, 2012]) were reported as improving. An interesting observation is that the four studies that reported improvements in social interaction skills were qualitative studies.

In addition to the studies on social responsibility and social interaction, five studies reported on developments in other social life skills, with mixed results (see Table 3). A positive finding was that social skills improved in youth who participated in weekly sports activities at schools in a deprived area (Armour & Duncombe, 2012). Laberge et al. (2012) and Ullrich-French et al. (2012), however, provided a mixed picture regarding developments in social competence. A possible explanation for this mixed picture is that social competence was operationalized differently in these two quantitative studies. Ullrich-French et al., who reported a growth, operationalized social competence in a way that overlaps with social interaction skills, whereas Laberge et al., who did not report a growth, operationalized social competence in a way that overlaps with social responsibility skills (i.e., respecting others and being polite). The findings from the work by Bruening et al. (2009), who conducted a qualitative case study, were less positive. Although the researchers

reported a growth in prosocial involvement in African American and Latina girls who participated in weekly sports sessions and life skills sessions, they only provided a few examples of improvements in behavioral competencies (Bruening et al., 2009). Terry et al. (2014) reported no positive findings on social skills either, as they found that behavioral problems in youth who participated in school-based boxing sessions did not decrease. A final observation was that the studies on the sports programs based on PYD principles reported improvements in social life skills, whereas none of the studies on non-PYD-based sports programs reported or assessed improvements in social life skills.

### Conducive conditions

Although many of the included studies referred to program elements as possible explanations for improvements in life skills, only 5 of the 18 studies incorporated research strategies to investigate whether certain program elements were conducive to life skill development. First, on the basis of a quasiexperimental quantitative study, Bonnette et al. (2001) reported that critical-thinking skills increased more for youth participating in a sports program in which the youth themselves had to find solutions for challenges in the sports activities compared with youth participating in a sports program where the coaches prompted these solutions. Second, Anderson-Butcher et al. (2014) found that increased sense of belonging (i.e., feeling comfortable and feeling part of the program) increased the chance for youth developing positive attitudes toward helping other people. Third, according to the parents interviewed by Riley and Anderson-Butcher (2012), the inclusion of a life skill education element, the opportunities for peer interactions, the active and diverse nature of the program, and sports instructors who were caring, personable, and outgoing caused or strengthened life skill development. The teachers and sports coaches interviewed by Armour and Sandford (2013) also reported that positive peer and youth-adult/coach relationships during the sports activities were conducive to life skill development. Another conducive condition that was investigated but did not make a difference for the development of life skills was visits of elite sports role models to the sports program's activities (Armour & Duncombe, 2012).

### Discussion

The main aim of this systematic review was to describe the evidence from qualitative and quantitative studies on life skill development in sports programs serving socially vulnerable youth. This review showed that remarkably few studies have been published in this field and that many of the included studies experienced



a high risk for bias. Therefore, the results of this review need to be treated with some caution. However, overall, the findings showed that sports programs serving socially vulnerable youth are settings in which socially vulnerable youth can develop life skills, thereby confirming the findings of Lubans et al.'s (2012) review. Each of the 18 included studies reported that at least one life skill improved in the youth who participated in the studied sports program. In contrast to these positive findings, 5 out of 11 quantitative studies reported on life skills that did not improve, and some of the qualitative studies cast doubt on the transfer of improved skills to other settings. This current review expanded on Lubans et al.'s (2012) work by including qualitative studies and more recent quantitative studies. As a result, we found that improvements in cognitive and social life skills were more frequently reported than were improvements in emotional life skills. Finally, this review showed that the studies on life skill development in sports programs serving socially vulnerable youth are very diverse in terms of setting, study design, research method, and reported life skills. However, it seems that the setting in which a sports program is conducted (i.e., school, summer camp, community, and residential care) does not make a difference for whether and which life skills are reported as improving.

The finding that improvements in emotional life skills were reported in fewer studies than were improvements in social and cognitive life skills is contrary to the findings of Eime et al.'s (2013) review. Their review, in which no distinction was made between socially vulnerable and nonvulnerable youth, included many studies that showed a positive relationship between sports participation and emotional life skills. Examples of emotional outcomes that were found to be associated with sports participation but that were not assessed in the studies in this current review are reduced suicidality, reduced mental illness, and increased life satisfaction (Eime et al., 2013). There may be several possible explanations for the low number of studies in this current review that assessed or reported improvements in emotional life skills. First, most of the studied sports programs were based on PYD principles, one of which is to foster cognitive and social competencies (Lerner et al., 2005). Therefore, quantitative research on PYD-based sports programs may more frequently assess cognitive and social skills than emotional skills, and qualitative research may be focused on the program aims when interview data are being coded. For instance, the qualitative studies on sports programs based on the TPSR model (E. Bean et al., 2014; Riley & Anderson-Butcher, 2012; Walsh et al., 2010) showed improvements in self-

regulation and social responsibility, which are aims of the TPSR model, whereas none of these studies reported improvements in emotional life skills.

An interesting observation was that different life skills were reported as improving in studies using different research methods. Developments in emotional life skills were more frequently reported in quantitative than in qualitative studies, developments in cognitive life skills were equally reported in quantitative and qualitative studies, and developments in social life skills were more frequently reported in qualitative studies. This difference in findings may be caused by the different approaches and research methods, which might steer the researchers' focus toward specific domains of outcomes. Quantitative studies tend to measure the life skills that researchers, policymakers, and/or program staff expect to improve through the sports program, which can lead to a bias whereby specific domains of life skills are omitted. In contrast, in qualitative studies, researchers tend to start with an open mind and attempt not to prompt for specific life skill developments in respondents. However, lack of prompting may lead to bias as well, because youth and their parents participating in qualitative studies may more easily notice and explain developments in social and cognitive skills (e.g., social interaction and self-regulation) than developments in emotional skills (e.g., global self-worth and anxiety).

The second aim of this review was to investigate what is known about conditions conducive for life skill development as identified from the sports programs studied. The conditions found to be conducive in the included studies were a positive youth-coach relationship, sports coaches who encourage youth to deal with challenges that arise in the sports activity, a sense of belonging to the sports program, and the inclusion of a life skills education element. However, as only five of the included studies investigated conditions that may be conducive to life skill development in the sports program, it is not possible to draw firm conclusions regarding the second research aim.

A final major point from this review is that although more and more research is being done in the sport-for-development field (Schulenkorf, Sherry, & Rowe, 2016), relatively few studies have been published that investigate life skill development in sports programs serving socially vulnerable youth. One possible explanation is simply that not much research has been done in this field. Another possible explanation may be the many challenges that researchers in this field have to face, such as high attrition rates, youth workers having priorities other than research, and obtaining parental consent (Whitley, Forneris, & Barker, 2014). Such



challenges resulted in increased risk for bias in many of the studies included in this current review. For instance, most quantitative studies lacked a sound comparison group. The comparison group in almost all the quasiexperimental studies included youth who themselves decided not to participate in the sports program. Such a selection bias makes it difficult to compare developments between groups (e.g., Laberge et al., 2012). In addition, when youth themselves decide whether or not to participate in the sports program, it may result in different group sizes. D'Andrea et al. (2013), for instance, compared life skill developments in an experimental group of 62 girls who voluntarily enrolled in the program to life skill developments in a comparison group of 26 girls who decided not to enroll in the program. The qualitative studies included might experience selection bias as well, because youth with negative experiences in the sports program may have dropped out. Consequently, as most interview studies were conducted at the end of a sports program, most of the youth interviewed may have had positive experiences in the sports program.

Given the results of this review, a number of suggestions for further research are offered. First, researchers might consider alternative research approaches to investigate the outcomes of sports programs serving socially vulnerable youth. One alternative might be to adopt a life-course perspective to assess the role of a sports program in youth's lives. This perspective focuses on how the life history of groups or individuals in society may explain differences in well-being. In-depth interviews based on the life-course perspective may encourage adults to explain how they have dealt with the challenges they faced in childhood or adolescence and whether and how sports programs or sports participation helped them to deal with these challenges (Haudenhuyse, Theeboom, & Nols, 2013; Wethington, 2005). Second, researchers might gather longitudinal data from parents, teachers, or program staff members to reduce attrition rates and difficulties around parental consent. An example of such a study was that by Armour and Sandford (2013), who asked teachers to write pupil profiles at several points from the start of a sports program to more than a year after its completion. Third, to increase the comparability of future quantitative studies in this field, researchers may benefit from using general youth development surveys, such as the survey and measurement frameworks developed by Lopez, Yoder, Brisson, Lechuga-Pena, and Jenson (2014) and Vierimaa, Erickson, Côté, and Gilbert (2012). These instruments provide a more holistic picture of youth's development than do questionnaires designed to study one individual outcome. They may also reduce the risk

for bias that may result from research tending to measure only the life skills that are expected to improve in youth in a particular sports program.

To study the conditions conducive to life skill development in sports programs, we would recommend that researchers encompass these conducive conditions in their research questions and study designs. In qualitative research, for instance, it could be achieved by asking the interviewees about the elements of the program that they think have led to the life skill development (e.g., Riley & Anderson-Butcher, 2012). In quantitative research, for instance, it could be achieved by comparing the life skill development of youth in a sports program that pays attention to a specific conducive condition with the life skill development in two comparison groups: one group in the same sports program where attention is not paid to this condition and one group not participating in a sports program (e.g., Bonnette et al., 2001). Such quantitative studies provide the opportunity to assess which elements of existing frameworks are conducive to life skill development in sports programs. Examples of elements that might be studied are the implicit versus the explicit approach to the transfer of life skills to other settings (Turnnidge et al., 2014), informal versus organized sports activities (Eime et al., 2013), and collaborative efforts of policy-makers, sports organizations, coaches, and parents versus sports programs run by a single organization (Fraser-Thomas et al., 2005).

### Limitations

This review is not without limitations. First, although a wide variety of terms related to sports programs, life skills, and socially vulnerable youth were included in the search, the inclusion of additional search terms might possibly have identified more studies. Second, the search terms for life skill development were based on three major life skills (i.e., emotional, cognitive, and social skills), which we chose based on the life skill developments that Turnnidge et al. (2014) linked to sports participation. Other scholars, however, may have categorized life skills in different major categories. Also, whereas we considered responsibility skills to be social skills because they pertain to relationships with other people, others might consider them to be cognitive skills because they overlap slightly with self-control. Third, the search did not include terms pertaining to conditions conducive to life skill development, whereas we looked, as a secondary aim, for conducive conditions within the studies that examined life skill development. Consequently, we may have missed studies that



investigated solely conducive conditions for positive sports experiences.

### What does this article add?

This review of both quantitative and qualitative studies showed that sports programs are settings in which socially vulnerable youth can develop diverse life skills. Improvements in cognitive and social life skills were more frequently reported than were improvements in emotional life skills. This review also showed that only a few of the included studies investigated the conditions of the studied sports programs that were conducive to life skill development. Finally, we found that still not much research has been published that has investigated life skill development in sports programs serving socially vulnerable youth and that the research that has been published is diverse in terms of setting, research methods, and reported life skills. To provide a better picture of life skill development in sports programs serving socially vulnerable youth, we recommend that researchers in this field consider alternative research approaches, such as adopting a life-course perspective in qualitative studies and using general youth development surveys in quantitative studies.

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### ORCID

Sabina Super  <http://orcid.org/0000-0002-2586-1953>

### References

- Anderson-Butcher, D., Riley, A., Amorose, A., Iachini, A., & Wade-Mdivanian, R. (2014). Maximizing youth experiences in community sport settings: The design and impact of the LiFE Sports Camp. *Journal of Sport Management*, 28, 236–249. doi:10.1123/jsm.2012-0237
- Armour, K., & Duncombe, R. (2012). Changing lives? Critical evaluation of a school-based athlete role model intervention. *Sport, Education and Society*, 17, 381–403. doi:10.1080/13573322.2011.608941
- Armour, K., & Sandford, R. (2013). Positive youth development through an outdoor physical activity programme: Evidence from a four-year evaluation. *Educational Review*, 65, 85–108. doi:10.1080/00131911.2011.648169
- Bailey, R., Hillman, C., Arent, S., & Petitpas, A. (2013). Physical activity: An underestimated investment in human capital? *Journal of Physical Activity and Health*, 10, 289–308. doi:10.1123/jpah.10.3.289
- Bean, C. N., Fortier, M., Post, C., & Chima, K. (2014). Understanding how organized youth sport may be harming individual players within the family unit: A literature review. *International Journal of Environmental Research and Public Health*, 11, 10226–10268. doi:10.3390/ijerph111010226
- Bean, E., Whitley, M. A., & Gould, D. (2014). Athlete impressions of a character-based sports program for underserved youth. *Journal of Sport Behavior*, 37, 3–23.
- Beaulac, J., Kristjansson, E., & Calhoun, M. (2011). 'Bigger than hip-hop?' Impact of a community-based physical activity program on youth living in a disadvantaged neighborhood in Canada. *Journal of Youth Studies*, 14, 961–974. doi:10.1080/13676261.2011.616488
- Bonhauser, M., Fernandez, G., Püschel, K., Yañez, F., Montero, J., Thompson, B., & Coronado, G. (2005). Improving physical fitness and emotional well-being in adolescents of low socioeconomic status in Chile: Results of a school-based controlled trial. *Health Promotion International*, 20, 113–122. doi:10.1093/heapro/dah603
- Bonnette, R., McBride, R. E., & Tolson, H. (2001). The differential effect of indirect instruction in the teaching of sport skills on critical thinking and self-esteem of early adolescent boys placed at risk. *Sport, Education and Society*, 6, 183–198. doi:10.1080/13573320120084263
- Bruening, J. E., Dover, K. M., & Clark, B. S. (2009). Preadolescent female development through sport and physical activity: A case study of an urban after-school program. *Research Quarterly for Exercise and Sport*, 80, 87–101. doi:10.1080/02701367.2009.1059953
- Cerin, E. (2010). Ways of unraveling how and why physical activity influences mental health through statistical mediation analyses. *Mental Health and Physical Activity*, 3, 51–60. doi:10.1016/j.mhpa.2010.06.002
- Coalter, F. (2015). Sport-for-change: Some thoughts from a sceptic. *Social Inclusion*, 3(3), 19–23. doi:10.17645/si.v3i3.222
- D'Andrea, W., Bergholz, L., Fortunato, A., & Spinazzola, J. (2013). Play to the whistle: A pilot investigation of a sports-based intervention for traumatized girls in residential treatment. *Journal of Family Violence*, 28, 739–749. doi:10.1007/s10896-013-9533-x
- Damon, W. (2004). What is positive youth development? *Annals of the American Academy of Political and Social Science*, 591, 13–24. doi:10.1177/0002716203260092
- Danish, S., Forneris, T., Hodge, K., & Heke, I. (2004). Enhancing youth development through sport. *World Leisure Journal*, 46(3), 38–49. doi:10.1080/04419057.2004.9674365
- De Ridder, D. T. D., Lensvelt-Mulders, G., Finkenauer, C., Stok, M. F., & Baumeister, R. F. (2012). Taking stock of self-control: A meta-analysis of how trait self-control relates to a wide range of behaviors. *Personality and Social Psychology Review*, 16, 76–99. doi:10.1177/1088868311418749
- Diamonds, A., & Lee, K. (2011). Interventions shown to aid executive function development in children 4 to 12 years old. *Science*, 333, 959–964. doi:10.1126/science.1204529
- Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2013). A systematic review of the psychological and social benefits of participation in sport for children and adolescents: Informing development of a



- conceptual model of health through sport. *International Journal of Behavioral Nutrition and Physical Activity*, 10, 98. doi:10.1186/1479-5868-10-98
- Feinberg, M. E., Jones, D., Greenberg, M. T., Osgood, D. W., & Bontempo, D. (2010). Effects of the Communities That Care model in Pennsylvania on change in adolescent risk and problem behaviors. *Prevention Science*, 11, 163–171. doi:10.1007/s11121-009-0161-x
- Fraser-Thomas, J. L., Côté, J., & Deakin, J. (2005). Youth sport programs: An avenue to foster positive youth development. *Physical Education & Sport Pedagogy*, 10, 19–40. doi:10.1080/1740898042000334890
- Fuller, R. D., Percy, V. E., Bruening, J. E., & Cotrufo, R. J. (2013). Positive youth development: Minority male participation in a sport-based afterschool program in an urban environment. *Research Quarterly for Exercise and Sport*, 84, 469–482. doi:10.1080/02701367.2013.839025
- Hasanpour, M., Tabatabaei, M., Alavi, M., & Zolaktaf, V. (2014). Effect of aerobics exercise on self-esteem in Iranian female adolescents covered by welfare organization. *Scientific World Journal*, 2014, Article ID 456483. doi:10.1155/2014/456483
- Haudenhuyse, R. P., Theeboom, M., & Nols, Z. (2013). Sports-based interventions for socially vulnerable youth: Towards well-defined interventions with easy-to-follow outcomes? *International Review for the Sociology of Sport*, 48, 471–484. doi:10.1177/1012690212448002
- Haudenhuyse, R. P., Theeboom, M., & Skille, E. A. (2014). Towards understanding the potential of sports-based practices for socially vulnerable youth. *Sport in Society*, 17, 139–156. doi:10.1080/17430437.2013.790897
- Hawkins, J. D., Catalano, R. F., & Arthur, M. W. (2002). Promoting science-based prevention in communities. *Addictive Behaviors*, 27, 951–976. doi:10.1016/S0306-4603(02)00298-8
- Hellison, D. (2003). *Teaching responsibility through physical activity*. Champaign, IL: Human Kinetics.
- Hellison, D., & Wright, P. (2003). Retention in an urban extended day program: A process-based assessment. *Journal of Teaching in Physical Education*, 22, 369–381. doi:10.1123/jtpe.22.4.369
- Holt, N. L., Sehn, Z. L., Spence, J. C., Newton, A. S., & Ball, G. D. C. (2012). Physical education and sport programs at an inner city school: Exploring possibilities for positive youth development. *Physical Education and Sport Pedagogy*, 17, 97–113. doi:10.1080/17408989.2010.548062
- Jonker, L., Elferink-Gemser, M. T., & Visscher, C. (2011). The role of self-regulatory skills in sport and academic performances of elite youth athletes. *Talent Development and Excellence*, 3, 263–275.
- Laberge, S., Bush, P. L., & Chagnon, M. (2012). Effects of a culturally tailored physical activity promotion program on selected self-regulation skills and attitudes in adolescents of an underserved, multiethnic milieu. *American Journal of Health Promotion*, 26, e105–e115. doi:10.4278/ajhp.090625-QUAN-202
- Lerner, R. M., Lerner, J. V., Almerigi, J. B., Theokas, C., Phelps, E., Gestsdottir, S., ... Von Eye, A. (2005). Positive youth development, participation in community youth development programs, and community contributions of fifth-grade adolescents: Findings from the first wave of the 4-H Study of Positive Youth Development. *Journal of Early Adolescence*, 25, 17–71. doi:10.1177/0272431604272461
- Lopez, A., Yoder, J. R., Brisson, D., Lechuga-Pena, S., & Jenson, J. M. (2014). Development and validation of a positive youth development measure: The Bridge-Positive Youth Development. *Research on Social Work Practice*, 25, 726–736. doi:10.1177/1049731514534899
- Lösel, F., & Farrington, D. P. (2012). Direct protective and buffering protective factors in the development of youth violence. *American Journal of Preventive Medicine*, 43 (Suppl. 2), S8–S23. doi:10.1016/j.amepre.2012.04.029
- Lubans, D. R., Plotnikoff, R. C., & Lubans, N. J. (2012). Review: A systematic review of the impact of physical activity programs on social and emotional well-being in at-risk youth. *Child and Adolescent Mental Health*, 17, 2–13. doi:10.1111/j.1475-3588.2011.00623.x
- McHugh, M. L. (2012). Interrater reliability: The Kappa statistic. *Biochemia Medica*, 22, 276–282. doi:10.11613/BM.2012.031
- Newton, M., Watson, D. L., Gano-Overway, L., Fry, M., Kim, M. S., & Magyar, M. (2007). The role of a caring-based intervention in a physical activity setting. *Urban Review*, 39, 281–299. doi:10.1007/s11256-007-0065-7
- Pawson, R., Boaz, A., Grayson, L., Long, L., & Barnes, C. (2003). *Types and quality of knowledge in social care*. London, UK: Social Care Institute for Excellence.
- Reiss, F. (2013). Socioeconomic inequalities and mental health problems in children and adolescents: A systematic review. *Social Science and Medicine*, 90, 24–31. doi:10.1016/j.socscimed.2013.04.026
- Riley, A., & Anderson-Butcher, D. (2012). Participation in a summer sport-based youth development program for disadvantaged youth: Getting the parent perspective. *Children and Youth Services Review*, 34, 1367–1377. doi:10.1016/j.childyouth.2012.03.008
- Schulenkorf, N., Sherry, E., & Rowe, K. (2016). Sport for development: An integrated literature review. *Journal of Sport Management*, 30, 22–39. doi:10.1123/jsm.2014-0263
- Smith, R. E., Smoll, F. L., & Cumming, S. P. (2007). Effects of a motivational climate intervention for coaches on young athletes' sport performance anxiety. *Journal of Sport & Exercise Psychology*, 29, 39–59. doi:10.1123/jsep.29.1.39
- Super, S., Wentink, C. Q., Verkooijen, K. T., & Koelen, M. A. (2017). Exploring the sports experiences of socially vulnerable youth. *Social Inclusion*, 5, 198–209. doi:10.17645/si.v5i2.864
- Terry, P. C., Hahn, A., & Simjanovic, M. (2014). Effects of a sport programme (Box'Tag\*) on disadvantaged youth participants. *International Journal of Sport and Exercise Psychology*, 12, 258–272. doi:10.1080/1612197X.2014.880263
- Turnnidge, J., Côté, J., & Hancock, D. J. (2014). Positive youth development from sport to life: Explicit or implicit transfer? *Quest*, 66, 203–217. doi:10.1080/00336297.2013.867275
- Ullrich-French, S., McDonough, M. H., & Smith, A. L. (2012). Social connection and psychological outcomes in a physical activity-based youth development setting. *Research Quarterly for Exercise and Sport*, 83, 431–441. doi:10.1080/02701367.2012.10599878
- Van Dillen, S. M. E., Van Binsbergen, J. J., Koelen, M. A., & Hiddink, G. J. (2013). Nutrition and physical activity guidance practices in general practice: A critical review. *Patient Education and Counseling*, 90, 155–169. doi:10.1016/j.pec.2012.10.022



- Vandermeersch, H., Vos, S., & Scheerder, J. (2013). Who's joining the club? Participation of socially vulnerable children and adolescents in club-organised sports. *Sport, Education and Society*, 20, 941–958. doi:10.1080/13573322.2013.856293
- Vettenburg, N. (1998). Juvenile delinquency and the cultural characteristics of the family. *International Journal of Adolescent Medicine and Health*, 10, 193–209. doi:10.1515/IJAMH.1998.10.3.193
- Vierimaa, M., Erickson, K., Côté, J., & Gilbert, W. (2012). Positive youth development: A measurement framework for sport. *International Journal of Sports Science and Coaching*, 7, 601–614. doi:10.1260/1747-9541.7.3.601
- Walsh, D. S., Ozaeta, J., & Wright, P. M. (2010). Transference of responsibility model goals to the school environment: Exploring the impact of a coaching club program. *Physical Education and Sport Pedagogy*, 15, 15–28. doi:10.1080/17408980802401252
- Wethington, E. (2005). An overview of the life course perspective: Implications for health and nutrition. *Journal of Nutrition Education and Behavior*, 37, 115–120. doi:10.1016/S1499-4046(06)60265-0
- Whitley, M. A., Forneris, T., & Barker, B. (2014). The reality of evaluating community-based sport and physical activity programs to enhance the development of underserved youth: Challenges and potential strategies. *Quest*, 66, 218–232. doi:10.1080/00336297.2013.773527
- Wille, N., Bettge, S., & Ravens-Sieberer, U. (2008). Risk and protective factors for children's and adolescents' mental health: Results of the BELLA study. *European Child and Adolescent Psychiatry*, 17(Suppl. 1), 133–147. doi:10.1007/s00787-008-1015-y
- Zins, J. E., Weissberg, R. P., Wang, M. C., & Walberg, H. J. (2004). *Building academic success on social and emotional learning: What does the research say?* New York, NY: Teachers College Press.

## Appendix. Search term

(sport OR physical act\* OR exercise\*) AND ((youth OR adolesc\* OR young people OR young person\* OR young adult\* OR teens OR teenager\* OR boy\* OR girl\*) AND (vulnerab\* OR at risk\* OR disaffect\* OR youth work\* OR youth care\* OR social work\* OR social care\* OR underserv\* OR deprived OR minorit\* OR low SES)) AND (prosocial OR pro social OR antisocial OR anti social OR wellbeing OR well being OR social behavio\* OR social skill\* OR Sense of Coherence OR emotional stab\* OR mental health OR self esteem OR selfesteem OR anxiety OR emotional problem\* OR depress\* OR mood\* OR self regula\* OR selfcontrol OR self-control OR life skill\* OR reflection OR planning OR monitoring OR self effic\* OR effort OR self evaluat\* OR locus of control OR assets OR emotional outcome\* OR social outcome\* OR pedagogical outcome\* OR emotional development OR social development OR pedagogical development OR empower\*)