Original Research

The influence of peers on life skill development and transfer in a sport-based positive youth development program

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ABSTRACT

Sport-based positive youth development (PYD) programs are recognized as important contexts for promoting life skill development and transfer, especially among socially vulnerable youth. Past research has examined the role of social agents (e.g., coaches, staff, parents) in life skill development and transfer. Although peers are identified as a critical social agent in sport-based PYD contexts, little English-speaking literature has examined the influence of peers on youth's life skill outcomes. This study examines multiple peer influences contributing to life skill outcomes among 483 youth involved in a sport-based PYD program. Cohen's d demonstrated improved self-control, effort, teamwork, social competence, and transfer of learning outcomes from pre- to post-program. Using a series of hierarchical linear regression models, results demonstrate the degree of life skills among peers in one's group, the youth's relative life skills within their group, and the number of friends in one's group predicted life skills scores at posttest after controlling for pretest scores and demographics. These findings point to the importance of peers as significant social influences contributing to youth's life skill outcomes in a sport-based PYD program. Sport practitioners can intentionally promote youth development through facilitated group processing, optimal peer group composition, and autonomy supportive staff practices.

THE INFLUENCE OF PEERS ON LIFE SKILL DEVELOPMENT AND TRANSFER IN A SPORT-BASED POSITIVE YOUTH DEVELOPMENT PROGRAM

Life skills are intra- and interpersonal assets that enable youth to successfully adjust to the challenges and stressors of life (Camiré et al., 2012; Danish et al., 2005). One context utilized to promote life skill development and transfer is sport-based positive youth development (PYD) programs. PYD is a strength-based conceptualization of development, in which youth are viewed as having assets to be developed rather than problems to be solved (Lerner et al., 2005). Youth sport programs designed to intentionally teach youth life skills and promote life skill transfer to non-sport settings are categorized under the term sport-based PYD (Fraser-Thomas et al., 2005; Gould & Carson, 2008). Sport-based PYD programs utilize implicit and explicit strategies to achieve life skill development and transfer. Moreover, Holt et al. (2017) proposed implicit processes from a PYD climate (e.g., relationships between youth and peers, parents, other adults) can produce PYD outcomes, as well as explicit processes in the presence of a PYD climate (e.g., life skill building and transfer activities). Programs optimize PYD outcomes as they move up the continuum of life skill development and transfer from implicit strategies (e.g., structuring the sport context, facilitating a positive climate) to explicit strategies (e.g., practice of life skills and transfer; Bean et al., 2018).

Keywords: youth sport; positive youth; development; life skills; peers; friends

Sport-based PYD programs utilize varying sport activities (e.g., single versus multiple sports, team versus individual sports) and contextual assets (e.g., coaches, staff, parents, and peers) to target different youth developmental outcomes (e.g., competence, confidence, positive identity) depending on the program's mission (Jones et al., 2017). Many sport-based PYD programs focus primarily on the needs of youth who are socially vulnerable as these youth may benefit the most from programming (Anderson-Butcher, 2019; Super et al., 2017). Moreover, socially vulnerable youth are confronted with complex challenges in their environment, such as poverty, food insecurity, lack of access to educational and sport opportunities, and lack of social support (Lower-Hoppe et al., 2020; Newman, 2020). These particular youth are often underserved, marginalized, and/or oppressed (Newman, 2019). Collectively, these risk factors increase the likelihood a problem—such as school failure, alcohol and drug abuse, and violence—will impede youth's healthy development and future success (Anthony et al., 2009). Through facilitating life skill development, sport-based PYD programs can help socially vulnerable youth deal with the environmental stressors they face to successfully transition into adulthood (Hermens et al., 2017; Newman, 2019).

Meta-analyses, systematic reviews, and other critical syntheses suggest the value of sport-based PYD and similar forms of youth sport for underserved populations (e.g., Hermens et al., 2017; Holt et al., 2017; Whitley et al., 2019). More specifically, research has demonstrated that among socially vulnerable youth, sport participation was related to the development of an array of life skills, including self-regulation and social skills (Hermens et al., 2017), self-esteem and personal/social responsibility (Whitley et al., 2019), communication and leadership skills (Holt et al., 2017), social competence and teamwork (Lower-Hoppe et al., 2020), and overall competence and social relationships with adults and peers (Eime et al., 2013). The positive impact of such programming, however, is not automatic (Whitley et al., 2019).

The literature highlights several seminal heuristic models that help explain how life skill development and transfer can be intentionally facilitated through sport, however, each has recognized limitations. For example, the Coaching Life Skills through Sport model accounts for youth's internal and external assets that influence their sport experience, but then exclusively focuses on the role of the coach in facilitating life skill development and transfer (Gould & Carson, 2008). The Model of PYD through Sport framework recognizes the influence of distal ecological systems (e.g., community, policy, culture) on sport programs and outlines a process of using implicit and explicit processes to produce PYD outcomes, yet does not distinguish developmental and transfer outcomes (Holt et al., 2017). One of the most comprehensive and integrative models in the literature is the Life Skills Transfer Model developed by Pierce and colleagues (2017). The model differs from others in that it accounts for the individual assets of the learner and multiple learning contexts (i.e., school, sport, family, vocational, extracurricular) that facilitate life skill development and transfer.

Life skill development and transfer models have received criticism in the literature that must be addressed. Kochanek and Erickson (2020) argued "PYD through sport may discount non-dominant ways of being and reinforce (White) status quo life skills" leading to cultural appropriation and possibly further inequality (p. 9). A co-creation process is encouraged in which sport-based PYD programs work with youth to achieve PYD outcomes through sport. Moreover, Kochanek and Erickson (2020) called for theory and practice to center around the voices of young people of color. Within sport-based PYD models, life skill development and transfer are predominantly examined through adult-centric perspectives, "with little knowledge of how youth—who are actually involved in the process—conceptualize life skills" (Newman, 2020, p. 643). We centered the current study around the socially vulnerable youth engaged in a sport-based PYD program, intentionally collecting data directly from youth participants—rather than coaches or parents/caregivers—to take an initial step towards addressing these issues.

Across the life skill development and transfer models (Gould & Carson, 2008; Holt et al., 2017; Pierce et al., 2017), youth's internal and external assets are consistently recognized as critical antecedents influencing life skill outcomes. Although social agents are considered integral to life skill development and transfer, sport-based models tend to focus exclusively on the role of the sport coach, without consideration of other important social agents—such as parents and peers. The present study aims to examine multiple peer influences related to life skill development and transfer among youth in a sport-based PYD program. The relevant literature and research context which informed the research methodology will next be reviewed.

Social Influences in Sport-Based Positive Youth Development

Seminal life skill development and transfer models point to the importance of social agents in promoting development and learning (Gould & Carson, 2008; Holt et al., 2017; Pierce et al., 2017). However, these models do not fully explain how key social agents influence this process.

Consequently, the social mechanisms of life skill development and transfer are often examined through social cognitive theory (e.g., Lower-Hoppe et al., 2020; Riley et al., 2017). Bandura's (1986) social cognitive theory highlights the dynamic interaction of person, behavior, and environment. Specifically, through a person's interaction with the social environment (e.g., modeling, group norms), their behavior is influenced. The environment provides opportunities for youth to not only observe the behaviors of significant others, but also apply and model new behaviors learned. The social environment also affords behavioral feedback, reinforcement, and consequences from others, which in turn can influence youth's experiences, motivation, and developmental outcomes (Simons-Morton et al., 2012). Therefore, youth may develop life skills through their interactions with others, especially those with social agents who offer ongoing support and connectedness.

Research in sport and sport-based PYD supports the role of social agents in life skill development, most notably coaches (Camiré et al., 2012; McDonough et al., 2013; Riley et al., 2017), parents (Gould & Carson, 2008; Hodge et al., 2017; Newman et al., 2020), and peers. These social agents can collectively create the PYD climate necessary to promote youth develop outcomes such as improved self-perceptions, interpersonal skills, and motor and health lifestyle skills (Holt et al., 2017). However, the influence of peers (e.g., friends and teammates) on life skill development and transfer in sport-based PYD programs has been examined less extensively in English-speaking literature. Although the researchers of the current study focused on English-speaking scholarly literature due to our language barriers, there are many relevant studies in the French literature on the subject of peer influence that should be considered in future research (e.g., Brodaty, 2010; Deflandre et al., 2004; Wylleman et al., 2004).

The literature suggests friendships form as early as age four, with children observed to have regular, reciprocal, cooperative interactions with peers in group settings (Howes, 1996). During the primary school years, more than 30% of youth's total social interactions involve peers, with youth said to "participate in a separate social world of their peers"—though not independent from family and other institutions (Gifford-Smith & Brownell, 2003, p. 236). Within sport-based PYD contexts, scholars largely point to peer group membership, role modeling, and reinforcement as suggested mechanisms of life skill development (Eccles et al., 2003; Gould & Carson, 2008).

The Influence of Peers on Life Skill Development and Transfer

English-speaking literature on traditional sport emphasizes the role of peers in shaping youth experiences. Moreover, research has found youth sport participants (age 10-18) in adaptive peer relationships who perceive peer acceptance and support experience positive contextual emotional responses toward their sport participation and have enhanced motivation to continue participating (Sheridan et al., 2014; Weiss & Smith, 2002). Similarly, positive friendship qualities—such as supportiveness, loyalty, commonality, and companionship—have been shown to foster ability beliefs, emotions, commitment, enjoyment, and motivation among youth (age 11-14) in traditional sport settings (Reichter & Weiss, 2019). Taken together, scholarship suggests youth are more inclined to actively engage and benefit from new developmental experiences in a psychologically safe environment where youth feel supported and related, with peers a critical social agent influencing the sport environment (Lower-Hoppe et al., 2020).

Only a few studies in the English language explore friendships and peer dynamics in sport-based PYD. McDonough and colleagues (2013, 2018) found positive peer interactions among low-income youth (age 9-16) in sport- and physical activity-based PYD programs contributed to youth feeling included, wanted, and cared for which improved their perceived competence, confidence, assertiveness, and self-esteem. The importance of peer interactions was also reported by Riley and Anderson-Butcher (2012), with parents indicating opportunities to interact with peers from diverse backgrounds contributed to their children's (age 11-13) "…increased ability to deal with/adapt to different people and also an increased ability to relate to others" (p. 1373). Another study found that peer reinforcement, expectations, and modeling of prosocial behaviors fostered life skill development among youth (age 9-14) from socially vulnerable circumstances over the course of a sport-based PYD program (Newman, 2019). Moreover, engaging peers in a sport-based PYD setting provided opportunity for youth to observe their peers model life skills—contributing to their understanding—and meaningfully practice and apply life skills—contributing to their development.

Some research on peers explores how youth differ in relation to position and friendships on a team, and therefore accrue different outcomes via their youth sport experiences. For instance, youth (age 15-16) identified by peers as central to teams have been found to be change agents, as they have significant influence on the behavior of other

team members and can positively impact youth development when acting as role models for their peers (Fujimoto et al., 2018). Further, youth (age 15-16) reported as more central within their team (i.e., more peer connections and relationships) at the beginning of a sport season have been found more likely to demonstrate prosocial behaviors toward their teammates at the end of the season, possibly to maintain peer acceptance (Herbison et al., 2019). Generally speaking, youth with more relationships are afforded greater opportunities to engage in and further develop life skills, as opposed to youth who lack social connections.

The life skills of peers of whom they associate with (i.e., peer group life skills), and youth's relative life skills within a social group may influence life skill development and transfer (Gifford-Smith & Brownell, 2003; Henry & Rickman, 2007). Indeed, research in education suggests this may be the case. For example, in schools with a high proportion of low-achieving peers, youth (age 15-16) tend to regress or under-perform (Lavy et al., 2012). Lavy et al. (2012) identify several potential mechanisms of ability peer effects, including youth are distracted by the low-achievers, youth try to emulate the behaviors of their peers, the teacher is adapting their pedagogical practice to suit the lowest achiever, and/or the teacher has fewer resources to give due to time and energy directed towards the lowest achievers. Additionally, youth (age 12-14) who have high-achieving peers predictably had fewer problem behaviors over time (Véronneau & Dishion, 2010). Véronneau and Dishion (2010) determined having high-achieving peers is more of a compensatory factor than protective factor, as it was found beneficial for all youth, regardless of their risky peer experiences (e.g., antisocial friends). High-achieving peers are often well-adjusted and model coping skills, social competence, and self-control—life skills youth can observe and learn from. In other words, youth with peers who are more socially competent may experience better outcomes as they mimic their peers' social behaviors and receive reinforcement for their positive behaviors in the social setting.

In the end, sport-based PYD programs can help socially vulnerable youth develop and transfer life skills to successfully transition into adulthood (Hermens et al., 2017; Newman, 2019). Several seminal life skill development and transfer models have been created to explain how life skill development and transfer can be intentionally facilitated through sport (e.g., Gould & Carson, 2008; Holt et al., 2017; Pierce et al., 2017), yet the literature has criticized sport-based PYD theory and practice for examining life skills through White, adult-centric perspectives (Kochanek & Erickson, 2020; Newman, 2020). Further, these models do not fully explain the social mechanisms of life skill development and transfer, warranting further research. Social cognitive theory provides a complementary lens to study the influence of peers on youth outcomes, emphasizing how the social environment shapes youth behaviors (Bandura, 1986). However, the limited scope of peer constructs measured within English-speaking scholarly literature often restricts the ability to adequately understand the complex role peers may have in influencing youth development (Smith & McDonough, 2008).

Purpose of the Current Study

To assuage these gaps and criticisms in the literature, the current study investigated peer influences of life skill outcomes among socially vulnerable youth involved in a sport-based PYD program, through the perspectives of the youth participants. Initially, youth perceptions of life skills were explored from pre-to-post programming. To assess the influence of peers on youth's life skill outcomes, multiple peer constructs were examined, including number of friends, peer group life skills, and youth's life skills relative to others within their group (i.e., youth's relative life skills). Specifically, we forwarded three main hypotheses:

H1: Youth's perceived life skills will increase from pretest to posttest in a sport-based PYD program, after controlling for youth's age, gender, and household income.
H2: Youth's perceived life skills at posttest will be significantly influenced by peer group life skills, after controlling for the youth's relative life skills within the peer group at pretest, as well as youth's age, gender, and household income.
H3: Youth's perceived life skills at posttest will be significantly influenced by their reported number of friends after controlling for the youth's relative life skills within the peer group at pretest, as well as youth's age, gender, and household income.

Research Context

A sport-based PYD summer camp for youth who were historically recognized as being socially vulnerable in a large urban city in the United States provided the context for this study. This summer camp was identified in Hermens et al.'s (2017) systematic review of evidence-based sport programs that foster life skill development among socially vulnerable youth and was the focus of several prior investigations (e.g., Anderson-Butcher et al., 2018). The program was created for youth in the local community, many of whom are youth of color from economically disadvantaged neighborhoods. There is no cost for participation, and youth receive two meals and free transportation to and from the program each day. Each year

the program serves approximately 600 youth between the ages of 9 to 15 through its 4-week, 19-day intervention designed to promote life skill development and transfer through sport-based activities and educational programming (Anderson-Butcher et al., 2014). Specific life skills this program targets include self-control, effort, teamwork and social competence (SETS), as well as the transfer of these life skills. Given the research context, these life skill outcomes were the focus of the current study. As a whole, the program curriculum is grounded theoretically in social cognitive theory and emphasizes how beliefs, attitudes, and the environment shape youth behaviors (Bandura, 1986).

Program strategies to promote the development of SETS involved direct instruction from trained adult program staff, pro-social interactions and modeling among peers, and opportunities to learn experientially. More specifically, all activities were led by program staff trained in PYD strategies, with the support of an additional staff member who traveled with the group of youth throughout camp. All program staff were provided curriculum with examples of how to frame instructions, facilitate the use of the SETS, and debrief the learned skills. At the beginning of a curricula session, staff described the specific social skill targeted, provided examples to further illustrate the social skill, and then explained how the social skill would be practiced through the activity. Next, staff facilitated an activity designed to provide youth ample opportunities to interact with and learn from peers in their group. Activities were interdependent in nature, requiring youth to work with their peers to practice the targeted social skill. During this time, youth were able to both observe their peers model the social skill and subsequently practice the skill themselves. At the end of the curricula session, staff engaged youth in debriefing the session, prompting interactive discussion with peers on the skills learned and practiced. Thus, the program integrated both implicit and explicit approaches to life skill development and transfer (Bean et al., 2018; Holt et al., 2017).

Each day for one hour, youth engaged in a play-based life skill development curriculum known as Chalk Talk. During Chalk Talk, youth were directly taught SETS, as well as provided opportunities to actively practice using SETS and reflect on their experiences through journaling. Additionally, youth participated in three different one-hour sport sessions with an assigned group of youth each day. Over the course of the program youth participated in 8 different sports (i.e., basketball, dance, football, lacrosse, soccer, softball, volleyball, and swimming), as well as a healthy lifestyle curriculum. Each sport was comprised of its own unique sport-specific curriculum that was designed to provide youth opportunities to practice using SETS within sport activities. For example, as part of the soccer curriculum, youth learned how to pass the ball to group members, while they simultaneously practiced using the life skill of teamwork (i.e., the ability to work, give feedback, ask for feedback, lead, follow, and communicate in a team context; Lower et al., 2017). The Chalk Talk and sport curriculum consistently followed the format outlined above for curricula sessions.

In addition to the program curriculum, the program structure of persisting peer groups also contributed to the influence of peers on youth's life skill development and transfer. At the beginning of the summer camp, youth were randomly assigned to one of 24 groups stratified by age and gender in order to group youth with peers of similar age and diverse gender. Groups consisted of approximately 30 youth, each with an assigned camp counselor responsible for providing constant supervision, building connections with youth and facilitating interactions across peers, guiding the youth through their daily schedule, reinforcing the life skills taught, and following safety guidelines. Youth would join their group at the beginning of each day for camp announcements, travel to four different curricula sessions with their group and collectively participate with their peers, eat lunch together as a group, and remain in their group until the end of camp each day. As a whole, the program structure and curriculum were designed to allow for group processing, informal and formal interactions among peers, peer modeling, and relationship development.

METHODS

Research Design

A descriptive pretest-posttest survey design was employed to test the study hypotheses (Bell, 2010). Inclusion of a pretest measure is considered an improvement from posttest only research designs assessing program outcomes. Administering a pretest and posttest survey allowed the researchers to assess change in youth's perceived life skills from pre-to-post programming and the influence of peers on youth's life skill outcomes. A pretest-posttest research design also has limitations, including history, selection, mortality, testing, instrumentation, regression to the mean, and maturation threats to internal validity (Bell, 2010; Dunbar-Jacob, 2018). Several strategies were employed to minimize these threats to internal validity, including randomly assigning youth to a peer group, enhancing youth's motivation to participate (e.g., 'swag bag', food, token incentives, transportation), utilizing researchers rather than program staff to administer the surveys, testing instrument reliability at pre and posttest, and controlling for the youth's relative life skills within the peer group at

pretest as well as youth's age, gender, and household income. Additionally, the use of only one repeated measure limits the potential learning testing effect, and the length of the program (19-days) limits the influence of youth maturation.

Participants and Recruitment

The program recruited youth to the summer camp through networking with local schools and youth-serving organizations. Any youth who registered for the program was eligible to volunteer for the study. During registration for the summer camp, parents/caregivers of youth were provided information regarding the study's purpose and asked to provide consent for their child's participation. Additionally, youth assent was collected from youth who had parent/caregiver permission and were 14 years of age and older on the first day of the program, given their age, maturity, condition, and capability of providing assent without their parent/caregiver's involvement. Only parent/caregiver consent were collected for youth younger than 14 years of age. Participation in the study was voluntary and was not a requirement for program registration.

Of the 533 youth registered for the program, a total of 483 youth with parent/caregiver consent completed all survey items of interest in this study. Demographics of the youth participants included 283 males (59%) and 200 females (41%). The majority of youth were Black/African American (83%), followed by "Some Other Race" (13%), and White/Caucasian (4%). Youth spanned an age range of 8 to 15 years old, with a mean age of 11.5 (SD = 1.63). Additionally, 61% of youth were eligible for free or reduced-price school lunch, as set by the federal government. In total, 13% of families reported an annual household income less than $10,000, 13% reported an income of $10-20,000 per year, 34% $20-40,000 per year, 19% reported $40-60,000 per year, and 15% reported an income above $60,000. The remaining sample did not provide an answer to the question.

Instruments

A pretest/posttest questionnaire was developed to assess youth's perceptions of their life skills at the beginning and end of the sport-based PYD summer camp, and their number of friends in their assigned group at camp (posttest). A self-report questionnaire was employed for several reasons. Scholars have emphasized the importance of gathering self-report information from youth, as opposed to a proxy-respondent (e.g., parent, coach, researcher), as youth are in a unique position to report on their behaviors that occur across situations (Danielson & Phelps, 2003). In addition to information richness, Paulhus and Vazire (2007) identify ease of interpretability, motivation of respondents to report, and practicality (efficient and cost-effective) as advantages of self-reports. When considering the validity of self-report tools, Danielson and Phelps (2003) found significant correlations between youth's self-report and peer-rated social skills, providing some support for self-reported life skill data from youth. Lastly, scholars have proposed the process of reflecting on items in a self-report tool can indirectly catalyze self-awareness and personal development (Duckworth, 2019). As such, we sought to facilitate additional opportunities for youth reflection and development to contribute to the mission of the sport-based PYD program.

In total five outcomes central to the goals of the program were examined. These outcomes included the life skills of self-control, effort, teamwork, and social competence, as well as transfer of learning. The outcome measures selected have been previously tested and validated in youth sport programs with youth age 9 to 16 years old (see Anderson-Butcher et al., 2014). Additionally, three distinct constructs were used to examine the multidimensional influence of peers related to the measured life skill outcomes. These peer influences included peer group life skills, youth's relative life skills, and number of friends.

Self-Control

Perceived self-control was measured using the 8-item Sports Social Experiences Scale (SSES; Anderson-Butcher et al., 2018). Self-control is conceptualized as the ability to have control of one's self and own actions (Gresham & Elliot, 2008). Items included, "I control my temper when playing sports." For each scale item, youth reported how true they thought the statement was for them ranging from 1 (not at all true) to 5 (really true). The internal consistency estimates in this study, which were computed using Cronbach's Alpha (α), were $\alpha = 0.979$ with 95% confidence interval (CI; 0.976, 0.981) at pretest and $\alpha = 0.991$ with 95% CI (0.990, 0.992) at posttest.

Effort

Perceived effort was measured using the 5-item commitment subscale of the Multidimensional Sportspersonship Orientations Scale (MSOS; Vallerand et al., 1997). Effort is defined as self-directed initiative and behaviors (Anderson-Butcher et al., 2014). Items included, "I don't give up even after making many mistakes," with youth reporting how true they thought the statement was for them ranging from 1 (not at all true) to 5 (really true). The

Cronbach's Alpha internal consistency estimates in this study were α = 0.953 with 95% CI (0.948, 0.959) at pretest and α = 0.985 with 95% CI (0.983, 0.987) at posttest.

Teamwork

Perceived teamwork was measured using the Teamwork Scale for Youth, consisting of eight items (Lower et al., 2017). Teamwork is characterized as the ability to collaborate and work with others to achieve a common goal (Anderson-Butcher et al., 2014). Items included, "I make an effort to include other members of my group." Using a range from 1 (not at all true) to 5 (really true), youth reported how true they thought each statement was for them. The internal consistency estimates in this study, computed using Cronbach's Alpha, were α = 0.965 with 95% CI (0.961, 0.969) at pretest and α = 0.987 with 95% CI (0.985, 0.988) at posttest.

Social Competence

Perceived social competence was measured using a modified Perceived Social Competence Scale (PCSC; Anderson-Butcher et al., 2008). Social competence consists of exhibiting prosocial behaviors as a way to engage in positive social interactions (Gresham & Elliot, 2008). Items included, "I give support to others," with youth responses ranging from 1 (not at all true) to 5 (really true).

Anderson-Butcher et al.'s (2008) scale reliability and validity testing suggested the original 6-item scale be reduced to 4-items, for which the 4-item modification was employed in the current study. The internal consistency estimates in this study, computed using Cronbach's Alpha, were α = 0.966 with 95% CI (0.962, 0.970) at pretest and α = 0.989 with 95% CI (0.988, 0.990) at posttest.

Transfer of Learning

Perceived transfer of learning was measured using the 3-item Transfer of Skills Learned in Sport Scale which was previously used in a sport-based PYD program evaluation (Anderson-Butcher et al., 2014; Newman et al., 2020). Transfer of learning is considered the ability to learn and practice a skill in the context of sport, and then successfully use that skill in another context (Gould & Carson, 2008). Youth responded to each statement using the range from 1 (not at all true) to 5 (really true). Items included, "The skills I learn in sport are useful to me in other parts of my life." The internal consistency estimates in this study, computed using Cronbach's Alpha, were α = 0.800 with 95% CI (0.771, 0.827) at pretest and α = 0.842 with 95% CI (0.817, 0.864) at posttest.

Table 1. Correlations of Life Skills Reported by Youth Involved in a Sport-based PYD Program

	Self Control			Effort			Teamwork			Social Comp			Transfer		
	Pre	Post	Peer Group	Pre	Post	Peer Group	Pre	Post	Peer Group	Pre	Post	Peer Group	Pre	Post	Peer Group
Self Control															
Post	0.56	1													
Peer Group	0.06	0.07	1												
Effort															
Pre	0.56	0.42	-0.01	1											
Post	0.42	0.72	0.02	0.53	1										
Peer Group	-0.01	0.06	0.46	0.02	0.10	1									
Teamwork															
Pre	0.73	0.49	0.08	0.61	0.44	0.05	1								
Post	0.47	0.80	0.08	0.42	0.70	0.10	0.49	1							
Peer Group	0.07	0.12	0.76	0.02	0.05	0.55	0.14	0.10	1						
Social Comp															
Pre	0.59	0.40	0.07	0.46	0.34	0.00	0.70	0.39	0.08	1					
Post	0.44	0.71	0.05	0.40	0.62	0.04	0.48	0.77	0.09	0.50	1				
Peer Group	0.08	0.10	0.80	0.00	0.03	0.38	0.12	0.08	0.85	0.04	0.06	1			
Transfer															
Pre	0.52	0.40	0.06	0.51	0.30	0.03	0.55	0.36	0.10	0.50	0.33	0.06	1		
Post	0.42	0.71	0.06	0.36	0.63	0.07	0.41	0.71	0.12	0.35	0.63	0.08	0.47	1	
Peer Group	0.07	0.12	0.60	0.00	0.07	0.46	0.14	0.13	0.69	0.07	0.12	0.60	0.09	0.12	1

Note. "Social Comp." represents social competence. "Transfer" represents transfer of learning. "Peer Group" represents Peer Group Life Skills. Means and additional descriptive information are presented in Table 3.

Peer Group Life Skills

Peer group life skills for each of the life skills was calculated for each individual youth as the mean of all other youth in their group on each of the five life skill outcomes at pretest (Note: individual youth were removed from their own group's life skills scores). Correlations of peer group life skills on the five life skills and other measures are listed in Table 1. Please note peer group life skills does not correlate highly with either the pretest or the posttest for any life skill outcomes.

Youth's Relative Life Skills

Each youth's relative life skills were calculated by subtracting each youth's scores at the beginning of the program from their respective group mean score at that same time point (i.e., peer group life skills). These are also referred to as group-mean centered scores. Youth whose relative life skills score was negative had higher skills than their group-peers at the beginning of the program. The opposite was true for those with a positive relative life skills estimate (i.e., the youth scored relatively worse than their peers at the beginning of the program). These measures of relative life skills were very highly correlated with the raw pretest variables (Self Control r = .97, Effort r = .98, Transfer r = .97, Social Competency r = .97, Transfer r = .96).

Number of Friends

Youth also answered one question about their friends at posttest, with youth given freedom to apply their own conceptualization of friend. Specifically, the youth were asked: "How many people in your group at Camp are your friends?" Youth responses to this item were normally distributed with an average of 13 friends (range 0 to 36, SD = 7.54, Skew = 0.46, Kurtosis = 0.47).

Data Collection

Upon enrollment, youth were randomly assigned into one of 24 groups, stratified by age and gender. There was an average of 30 youth per group (SD = 6.81, range 26-32 youth). Throughout the entire camp, youth engaged in all program activities with their assigned groups. Please note this peer group was used throughout the analyses and represents the small co-ed group of similarly aged youth (within 1 year age difference) who began the program on the same day and attended all program activities together. Youth completed pretest surveys on the first day of the program and posttest surveys on the last day of the program during Chalk Talk. The surveys took approximately 30 minutes to complete, with approved researchers present to provide assistance upon request. All study procedures were approved by a university institutional review board.

ANALYSIS

Data Cleaning

Prior to analyses, data were cleaned to ensure all variables were within acceptable and expected ranges. Enrollment numbers, data return rates, group sizes, and ages of youth were confirmed using administrative records. There were a few instances of detected outliers that were identified as coding errors (values outside the range of possible values), and these were deleted. All data cleaning and data analyses were conducted using SAS v. 9.3. Missing data were handled using multiple imputation, with ten datasets, conducted using SAS proc MI. All previously described variables, including covariates, were included during the imputation phase.

Additionally, data were checked for normality. All outcomes were negatively skewed. However, we also examined the residuals for all models described below. All described models showed normally distributed residuals, and thereby meet the assumption of regression-based models in that the errors are normally distributed, not that the variables themselves are normally distributed (Cohen et al., 2014). Therefore, the skewness was not problematic for the analyses presented here.

Preliminary Analyses

Initially we examined whether there was significant variance in the youth constructs measured at posttest that could be attributed to the 24 groupings, thus distilling whether there was a need to account for that variance statistically in the analyses of interest. This first analytic step is called unconditional modeling, and measures the variance accounted for by the grouping unit as a function of the total variance in the outcome (also called an intra-class-correlation; ICC). The ICCs for each of the life skill outcomes were small, with the group accounting for about 3% of the variance for each outcome. Though each of the variance components was non-significant (p-values ranged from 0.07 – 0.11), we elected to take a conservative approach and account for the nested structure of the data in subsequent analyses. Full variance components from these unconditional models are provided in Table 2.

Changes in Life Skill Outcomes

Means and standard deviations for the primary variables for

Table 2. Variance Components from Unconditional models of Post-test Life Skills Scores

	Tau	Sigma squared	ICC
Self Control	0.020	0.494	0.04
Effort	0.021	0.578	0.03
Teamwork	0.014	0.466	0.03
Social Comp	0.010	0.457	0.02
Transfer	0.015	0.686	0.02

Note. Tau = between group variance. Sigma-Squared = Within group variance. ICC = Intra-Class correlation, calculated as Tau as a percentage of total variance. None of the Taus were significantly different from zero.

the analyses are presented in Table 3. To test whether life skills significantly changed from pre to posttest, a hierarchical linear model was fit to the data (also known as a linear mixed effects model) with the youth life skill predicted by time, with participants nested within groupings. In addition, we included three covariates (youth's age, household income, and whether the youth identified as male or female). The results of the inferential tests are provided in Table 3. The inferential tests allow us to determine that skills generally improved from pre to posttest, with most outcomes showing a significant effect of time ($p < .001$). One exception was effect for Self-Control, which showed a p-value of exactly .05.

In addition to the significance tests, changes from pre to posttest were estimated in effect size units (Cohen's d) and calculated as the difference between the mean at pretest and the mean at posttest divided by the pooled standard deviation. We provide effect size units as a way of quantifying the magnitudes of these differences; magnitudes of effect-sizes are often compared to Cohen's benchmarks, such that 0.2 is small but substantively meaningful, 0.5 is considered to be medium, while 0.8 is large (Cohen, 1988). The smallest effect size was the change for self-control (d = 0.10), with a small to moderate change found for all other skills (d ranged from 0.20 to 0.39). H1 was accepted.

Peer Influences

For the second research hypothesis, we sought to examine peer influences on life skill development. We used hierarchical linear regression models (also known as mixed effects models) to predict the posttest outcome of each of the five life skill outcome variables (e.g., self-control, effort, etc.), from peer group life skills, and the youth's relative life skills within their group at pretest. By including relative skills, which is a variant of the youth pretest, our analyses now examine growth in youth skills during the

Table 3. Descriptive Statistics of Life Skills Reported by Youth Involved in a Sport-based PYD Program, and testing for change from pre- to post

	Descriptive Information					Pre-Post Differences	
	Min	Max	IQR	MEAN	SD	*d*	p-value
Self Control							
Pre	1.75	5.00	1.00	4.22	0.71		
Post	1.00	5.00	1.00	4.29	0.72	0.10	0.051
Peer Group	3.90	4.65	0.28	4.20	0.16		
Effort							
Pre	1.00	5.00	1.00	4.11	0.75		
Post	1.00	5.00	1.20	4.26	0.78	0.20	<.001
Peer Group	3.73	4.45	0.29	4.08	0.17		
Teamwork							
Pre	1.90	5.00	0.70	4.02	0.60		
Post	1.00	5.00	0.90	4.23	0.69	0.33	<.001
Peer Group	3.64	4.37	0.21	4.01	0.16		
Social Comp							
Pre	1.75	5.00	1.00	3.97	0.66		
Post	1.00	5.00	0.88	4.23	0.68	0.39	<.001
Peer Group	3.60	4.33	0.16	3.95	0.16		
Transfer							
Pre	1.00	5.00	1.33	4.03	0.86		
Post	1.00	5.00	1.33	4.22	0.84	0.22	<.001
Peer Group	3.17	4.42	0.27	4.00	0.23		

Note. "Social Comp." represents social competence. "Transfer" represents transfer of learning. "Peer Group" represents Peer Group Life Skills. d = Cohen's d. The p-value was determined through an inferential test accounting for the nested structure of the data and controlling for Age, Income, and whether student identifies as Female.

development program (Allison, 1990). In addition, we included three covariates (youth's age, household income, and whether the youth identified as male or female). These hierarchical linear models were fit using SAS Proc Mixed, with full information maximum likelihood estimation as our primary focus was on the significance of specific regression coefficients, and the results were synthesized across the ten imputed datasets using SAS Proc MI-Analyze.

Each of the hierarchical linear models were estimated following a random intercepts model. In other words, each intercept was allowed to vary across groupings. A random intercept only model was chosen for parsimony, and due to minimal between-grouping variance. The model can be written as follows:

$$Y_{ij} = B_{0j} + B_{1j}(Peer\ Skill_{ij}) + B_{2j}(Relative\ Status_{ij}) + B_{3j}(Covariates_{ij}) + u_{0j} + e_{ij}$$

Where Y_{ij} is the life skill at posttest for person *"i"* in grouping *"j"*. The B_{1j} coefficient associates the average life skill of the peers of person "i" in grouping "j" with the outcomes, and B_{1j} associates the relative status of the

youth within their group and their posttest score on that same life skill outcome. The error terms u_{0j} and e_{ij} represent the variance associated with each grouping (*j*) and the residual or individual variance (*"i"* in grouping *"j"*) respectively. This model was fitted to the data five times; once for each of the five outcomes.

Table 4. Youth's Post-test Life Skills Scores predicted Peer Group Life Skills and Pretest Life Skills

Parameter	Estimate	S.E.	*t*	*p*
Self-Control				
Intercept	1.56	1.41	1.10	.270
Peer Skill	0.65	0.28	2.33	.020
Relative Skill at Pretest	0.63	0.07	8.39	<.001
Age	-0.01	0.03	-0.46	.643
Income	0.01	0.02	0.57	.572
Female	-0.07	0.06	-1.27	.202
Effort				
Intercept	1.06	0.90	1.18	.238
Peer Skill	0.79	0.20	3.91	<.001
Relative Skill at Pretest	0.72	0.08	8.71	<.001
Age	-0.02	0.02	-0.96	.339
Income	0.01	0.02	0.46	.646
Female	-0.11	0.06	-1.83	.067
Teamwork				
Intercept	1.76	1.30	1.35	.177
Peer Skill	0.61	0.27	2.29	.022
Relative Skill at Pretest	0.60	0.09	6.58	<.001
Age	-0.01	0.03	-0.43	.669
Income	0.00	0.02	-0.04	.965
Female	-0.04	0.06	-0.71	.475
Social Comp				
Intercept	1.77	1.37	1.29	.196
Peer Skill	0.61	0.28	2.15	.032
Relative Skill at Pretest	0.49	0.08	6.07	<.001
Age	-0.02	0.03	-0.62	.536
Income	0.01	0.02	0.35	.729
Female	0.03	0.06	0.58	.559
Transfer				
Intercept	0.86	1.15	0.75	.455
Peer Skill	0.75	0.22	3.46	.001
Relative Skill at Pretest	0.61	0.08	7.77	<.001
Age	0.00	0.03	0.05	.960
Income	0.02	0.03	0.67	.503
Female	-0.04	0.07	-0.52	.603

Note. "Social Comp." represents social competence. "Transfer" represents transfer of learning. "Peer Skill" represents the average skill of the youth's peers on the given life skill. All analyses accounted for the nested structure of the data using Hierarchical Linear Modeling.

The results of these five models are shown in Table 4, with table spanners representing the five different outcomes. In all five outcomes, peer influences significantly predicted youth's end-of-program scores on all five life skill outcomes (see Table 4). For example, for Self-Control (the first outcome examined), peer group life skills was significantly predictive of self-control (Estimate = 0.65, p =.020). Similarly sized effects were seen for all five of the examined outcomes. Therefore, H2 was accepted.

To test the third research hypothesis, we next examined how the youth's number of friends contributed to the development of each of the five life skills (see Table 5). The same model was fit as was described pursuant the second hypothesis, with the addition of the friendship variable. We found the number of reported friends did have a small but significant positive main effect on youth's posttest life skills for Effort (.013, p = .001), Teamwork (.011, p = .004), Social Comp (.013, p = .006), and Transfer (.02, p < .001). The effect of number of friends on Self-Control was similar in size to the other life skills, however was not significantly different from zero (.007, p = .053). Therefore, H3 was partially supported.

DISCUSSION

The ability to effectively promote life skill development and transfer is critical for sport-based PYD programs, especially those serving populations of youth who are socially vulnerable. This study provides additional support for the value of a sport-based PYD program, as all assessed life skill outcomes demonstrated increases from pre- to post-program, even with data being negatively skewed at pretest. Though the program is designed for socially vulnerable youth, the summer camp is voluntary with youth self-selecting to participate in the program, resulting in a more diverse sample of youth with low/high perceptions of life skills. The diversity of the sample provided variability, enabling us to examine the relative life skills of the peer group, however, youth who entered the program with favorable life skills may have also skewed the data. Previous studies examining life skill outcomes of this program have demonstrated similar negatively skewed outcomes (Anderson-Butcher et al., 2014, 2018), with cluster analysis revealing youth who enter the program with low perceived life skills report the greatest growth in outcomes compared to youth who enter with favorable life skills. Therefore, the program is most impactful for socially vulnerable youth, who may benefit the most from the programming (Anderson-Butcher, 2019; Super et al., 2017).

The increases in life skill outcomes demonstrated in this study were marginal, therefore the study findings should be interpreted with caution. More specifically, small to

Table 5. Post-test Life Skills Predicted from Peer Group Life Skills and Number of Friends

	Estimate	SE	*t*	*p*
Self-Control				
Intercept	1.54	1.411	1.09	.274
Peer Skill	0.66	0.282	2.34	.020
Relative Status	0.60	0.043	14.10	<.001
Number of Friends	0.01	0.004	1.93	.053
Age	-0.01	0.027	-0.48	.632
Income	0.01	0.021	0.54	.589
Female	-0.07	0.056	-1.25	.211
Effort				
Intercept	1.03	0.908	1.13	.259
Peer Skill	0.80	0.206	3.89	.000
Relative Status	0.55	0.043	12.99	<.001
Number of Friends	0.01	0.004	3.25	.001
Age	-0.02	0.021	-0.98	.328
Income	0.01	0.023	0.46	.649
Female	-0.11	0.062	-1.77	.077
Teamwork				
Intercept	1.76	1.303	1.35	.178
Peer Skill	0.62	0.269	2.29	.022
Relative Status	0.60	0.052	11.67	<.001
Number of Friends	0.01	0.004	2.87	.004
Age	-0.01	0.026	-0.42	.671
Income	0.00	0.021	-0.04	.969
Female	-0.04	0.057	-0.72	.474
Social Comp				
Intercept	1.77	1.375	1.28	.199
Peer Skill	0.61	0.285	2.15	.032
Relative Status	0.51	0.047	10.81	<.001
Number of Friends	0.01	0.004	3.44	.001
Age	-0.02	0.027	-0.61	.544
Income	0.01	0.021	0.35	.724
Female	0.03	0.057	0.60	.550
Transfer				
Intercept	0.93	1.135	0.82	.410
Peer Skill	0.74	0.213	3.45	.001
Relative Status	0.47	0.042	11.17	<.001
Number of Friends	0.02	0.005	4.67	<.001
Age	0.00	0.030	-0.03	.973
Income	0.02	0.027	0.56	.573
Female	-0.03	0.070	-0.43	.667

Note. "Social Comp." represents social competence. "Transfer" represents transfer of learning. "Peer Skill" represents the average skill of the youth's peers on the given life skill. All analyses accounted for the nested structure of the data using Hierarchical Linear Modeling.

moderate effect sizes were found for the life skills of self-control, effort, teamwork, social competence, and transfer of learning, demonstrating the value of a sport-based PYD program for promoting life skill outcomes among socially vulnerable youth. A recent meta-analysis of physical activity interventions with children and adolescence demonstrated small to moderate effect sizes among program interventions (Vazou et al., 2019), which our findings align with. The program investigated intentionally designed their sport- and play-based curriculum to target the desired life skill outcomes (i.e., self-control, effort, teamwork, social competence, transfer of learning), facilitating four 1-hour curricula sessions for 15 days. Previous randomized controlled trials assessing the effects of physical activity programs have found even brief interventions can significantly improve youth outcomes (e.g., 10-minutes per week x 4 weeks, 2-hours per week x 10 weeks; Zeng et al., 2017), highlighting the integration of relevant tasks as critical for achieving desired outcomes.

Although the literature highlights several seminal heuristic models of life skill development and transfer through sport (e.g., Gould & Carson, 2008; Holt et al., 2017; Pierce et al., 2017), these frameworks predominantly focus on the role of the sport coach and do not fully explain how other social agents influence the life skill development and transfer process. Peers have been identified as a critical social agent influencing youth outcomes (Gifford-Smith & Brownell, 2003; Howes, 1996; Newman, 2019), yet the influence of peers has been examined less extensively in English-speaking literature. This research utilized social cognitive theory as a complementary lens to understand how peers contribute to youth's life skill outcomes in a sport-based PYD context (Bandura, 1986). Specifically, the study examined multiple peer dimensions, including the degree of life skills among peers in one's group (i.e., peer group life skills), the youth's relative life skills within their group, and the youth's number of friends. Peer influences and life skill outcomes were assessed through the perspectives of the socially vulnerable youth engaged in the sport-based PYD program studied to address previous criticisms of life skill development and transfer research reinforcing White, adult-centric perspectives (Kochanek & Erickson, 2020; Newman, 2020). Ultimately, findings illustrated the role of peers in promoting life skills among socially vulnerable youth involved in a sport-based PYD program, a notion that previously has been suggested in English-speaking literature with preliminary evidence (e.g., Holt et al., 2017; Jones et al., 2017; Riley & Anderson-Butcher, 2012), but warranted additional empirical support.

Results suggest that peer group life skills were predictive of posttest scores on all five life skill outcomes. In other words, youth engaging in peer groups with life skills more favorable than their own were more likely to demonstrate higher levels of life skills at posttest after controlling for pretest scores. This is an interesting finding, given that most sport-based PYD programs focus primarily on the needs of youth who are socially vulnerable and at-risk for experiencing negative outcomes that can impede healthy development and future success (Anderson-Butcher, 2019; Anthony et al., 2009; Super et al., 2017). This finding

suggests that even within a socially vulnerable population, there is a need for variability in the adaptive functioning of the peer group to promote live modeling, behavioral feedback, reinforcement and consequences, and interaction with others in order to cultivate youth's life skill outcomes (Bandura, 1986; Simons-Morton et al., 2012). Previous research in education supports this contention. For instance, Lavy and colleagues (2012) demonstrated that low achieving peers with low levels of skills negatively influenced youth, pointing to youth emulation and the teacher's pedagogical focus as possible effects. Comparatively, Véronneau and Dishion (2010) found high-achieving peers beneficial for all youth, as these peers are often well-adjusted and model life skills. In light of the importance of peer behaviors in contributing to youth's life skill outcomes, sport-based PYD programs may apply these findings by providing ample opportunities for youth to interact with peers in positive social environments. The sport context and program curricula may be modified to allow for more group processing, informal and formal interactions among peers, and relationship development. Additionally, team sports may incorporate strategies which allow for more prosocial interactions among youth.

Findings also support an association between youth's relative life skills within their peer group and their own life skill outcomes. Research in sport has explored youth's relative skill—in relation to motor skills—and found higher skilled youth had a healthier identity, stronger social relationships, and greater intention to persist due to positive sport experiences, whereas less skilled youth had more difficulty navigating social networks, relied upon extrinsic motivation from others to participate, and demonstrated poor coping skills when in stressful situations due to negative sport experiences (Timler et al., 2020). Bortoli et al. (2012) suggested if a youth's perception of their ability is low it can manifest into maladaptive behaviors (e.g., avoiding challenges, decreased persistence, antisocial actions) out of worry over their ability level comparative to their peers. Put simply, peers and their skill levels, as well as youth's relative skill level to their peers, influence youth's skill outcomes, perhaps both positively and negatively.

If applying these findings to outside contexts, sport-based PYD programs should be intentional when creating groups of youth, having a balance of youth with both low and high levels of life skills. Sport practitioners may consider assessing skill prior to program administration to create optimal group composition. This way, youth with low levels of skills may learn from their peers who may have already mastered various life skills and other competencies. However, because peers' life skills also might have a relatively negative effect, program staff should remain cognizant and reinforce positive instances and examples of behaviors that exemplify targeted life skills. This intentional strength-based facilitation technique is a critical feature of sport-based PYD pedagogy, programming, and practice (Newman et al., 2020). For groups of youth that may emerge as having a high proportion of low achievers, program staff in charge of those groups may benefit from additional support given research demonstrating the influence of staff on youth outcomes (Ross et al., 2015). In the same vein, groups of youth with predominantly high achievers may need exposure to greater challenge, for which curriculum can be tailored.

The influence of friendships on youth's life skill outcomes also was examined. Findings suggest the number of friends youth had at the end of the program was important for life skill increases over the course of the program. This finding confirms the seminal research by Wethington and Kessler (1986) that found peer relationships represent a critical predictor of social development. This finding also aligns with the formative work by Smith (1999) examining Harter's Competence Motivational Theory, demonstrating that perceptions of peer relationships (i.e., friendship, peer acceptance) predicted physical activity motivation. Moreover, in a study of life skill development among youth who were socially vulnerable and participated in a community sport-based PYD program, Newman (2019) noted the specific influence of friends on life skill development. Specifically, the author noted, "youth in the study differentiated friends from other peers by using the specific term friend," and that "friends differ[ed] from other peers due to the closeness of the relationship" (Newman, 2019, p. 201). To apply these findings, sport-based PYD programs can aim to foster these close relationships, as well as capitalize on pre-existing friendships, through interactive curricula, autonomy supportive staff practices, and persisting peer groups (Lower-Hoppe et al., 2020; Riley et al., 2017).

LIMITATIONS AND FUTURE DIRECTIONS

There were several limitations that must be considered when interpreting the results of the current study. First, measure of outcomes related to life skill development was limited to five life skills, for which youth were asked to self-report their perceived skill level. The five life skill outcomes were found negatively skewed, suggesting a possible ceiling effect measurement limitation (Taylor, 2010). Future scholars may consider measures that can better discriminate youth with low versus high life skills. In addition to considering appropriate methods to measure life skill outcomes, researchers and practitioners engaged

in sport-based PYD programming may consider how to recruit socially vulnerable youth at risk for low life skills, to ensure the program is reaching those most in need (Anderson-Butcher, 2019; Super et al., 2017).

Although use of self-report is supported in the literature by data collected directly from youth rather than a proxy-respondent (Danielson & Phelps, 2003; Duckworth, 2019; Paulhus & Vazire, 2007), self-report measures have noted limitations. Self-report measures are susceptible to social desirability bias, response bias, mono-method bias, and systematic bias, which can result in measurement error (Chan, 2009). Due to the size of the program (483 youth participants) and resources constraints, the researchers were not able to triangulate the data through methods such as direct observation of youth behavior, report from parents/caregivers regarding youth life skills in different environments, objective measures of life skill development and transfer, etc. Future scholars are encouraged to collect multiple sources of data where possible to mitigate the limitations of self-report measures.

As previously noted, life skill development and transfer are predominantly assessed through adult-centric perspectives and not centered around the voice of the socially vulnerable youth engaged in the process (Newman, 2020). Although the researchers collected data directly from youth through self-report, youth did not receive the opportunity to engage in a co-creation process with the sport-based PYD program under investigation to achieve life skill development and transfer through sport (Kochanek & Erickson, 2020). Practitioners and scholars should consider ways to incorporate youth in program design, delivery, and evaluation to provide youth participants greater voice in their life skill development and transfer. Moreover, practitioners and scholars could use interviews, focus groups, photo voice, or other participatory research methods for a more in-depth exploration of the life skills of greatest interest to youth participants, how youth conceptualize those life skills, and appropriate ways to facilitate and measure life skill development and transfer.

As previously noted, the researchers focused on English-speaking scholarly literature due to our language barriers, limiting our review of empirical scholarship relevant to peer influences. Future researchers are encouraged to examine relevant scholarship in other languages (e.g., Brodaty, 2010; Deflandre et al., 2004; Wylleman et al., 2004) for a deeper understanding of how peers influence youth life skill development and transfer. The life skills examined in this study reported fairly high Cronbach's alphas potentially due to the theoretical and conceptual association across the social constructs. Within the literature, social competence is conceptualized as a multi-dimensional construct, consisting of intrapersonal and interpersonal social skills— each individually contributing to one's overall social competence (Raver & Zigler, 1997). Future research should seek to disentangle these social constructs and consider additional life skill outcomes not examined in the current study to further understanding of peer influences. When considering youth's number of friends, there is potential youth defined friendship differently or responded in a socially desirable way. Future research may consider providing youth a definition of friendship when asking youth to report their number of friends to ensure the question is interpreted consistently. Additionally, in the current study, youth reported number of friends in the program only at posttest. Growth in friendships over the course of a program or season might provide additional insights into the influence of peers from a developmental perspective.

Future research also should consider exploring the dynamic evolution of peers. The differentiation (i.e., types and forms) in peer influences based on life skill outcome warrants further investigation. Continuing to explore the multidimensionality of peer influences remains a priority. For instance, there is some research to support the role of peer reinforcement, support, and expectations for the demonstration of life skills (Newman, 2019; Pierce et al., 2019; Riley & Anderson-Butcher, 2012). Future research might consider, as well, how peer support and friendship quality along with peer group life skills, youth's relative life skills in the peer group, and number of friends collectively contribute to social development outcomes. Additionally, future studies should control for other related demographic variables, such as the gender and age composition of the group. Furthermore, data were limited to one sport-based PYD program, with no comparison group, a prevalent limitation of most PYD intervention research (Whitley et al., 2019). Researchers should seek to study multiple groups or incorporate multi-site comparisons to enhance the study design. Future studies should continue to explore the multiple peer influences on life skill development to distill the mechanisms most viable for creating outcomes.

CONCLUSION

The current study investigated peer influences on youth's life skill outcomes among socially vulnerable youth participating in a sport-based PYD program. The findings demonstrated the degree of life skills among peers in one's group (i.e., peer group life skills), the youth's relative life skills within their group, and the youth's number of friends in their group predicted life skill outcomes among youth participants. Relationships with peers may be especially important for youth who are socially vulnerable and/or

those with less developed life skills, as youth with low levels of life skills relative to their peers and those with more friends predicted life skill gains in the study. Overall, findings point to the importance of peer group composition when designing a sport-based PYD program and facilitating activities, especially as sport-based PYD programs desire to maximize life skill development outcomes. When applying these findings to outside contexts, this study provides support for the role of sport-based PYD in promoting life skills among socially vulnerable youth. Strategies to include youth most at-risk for poor developmental outcomes is of critical importance, as these youth may benefit the most from programming.

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