



The relationship between psychosocial developmental and the sports climate experienced by underserved youth

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ABSTRACT

Objectives: This study was designed to assess developmental outcomes underserved youth report from their sports participation; identify perceptions of the sports climate their coaches create; and, measure the relationships between participants reported gains and perceptions of the psychosocial sports climate. **Method:** Participants were 239 urban youth sports participants from an underserved community who completed the Youth Experiences Scale (YES-2), Sport Motivational Climate Scale, Caring Climate Scale and measures of the importance their coaches placed on life skills.

Results: Multivariate analyses revealed a number of significant relationships between YES-2 outcomes and motivation and caring climate predictor variables, which clearly show that the more coaches create caring, mastery-oriented environments, the more likely positive developmental gains result.

Conclusion: These findings are consistent with the previous motivational (Smith, Smoll, & Cumming, 2007) and caring climate (Fry & Gano-Overway, 2010) research and shows that coaching actions and climates have an important influence on personal and social development of young people.

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Sport psychologists have shown considerable interest in understanding the role that the sports experience plays in positive personal and life skills development of youth (e.g., Gould & Carson, 2010; Jones & Lavalley, 2009). Much of this interest has been spurred by research in developmental and general psychology that focuses on the experiences youth have and the benefits they derive from taking part in organized out of school activities. For example, Larson, Hansen, and Moneta (2006) had over 2000 high school students complete the Youth Experiences Survey-2 (YES-2), a measure of the development gains young people can derive from extracurricular activity participation, and an activity participation survey. Findings revealed that when compared to other activities, those youth involved in sports and arts scored higher on initiative (e.g., reported more experiences related to sustaining effort and setting goals). Sports participants, however, also reported higher levels of one negative experience: stress.

In a follow-up manuscript using the same sample, Hansen and Larson (2007) identified variables that they hypothesized “amplified” or moderated the relationship between activity participation

and developmental experiences in youth activities. In addition to completing the YES-2, activity dosage or amount, motivations for taking part, lead roles experienced and the ratio of the number of adults to youth were assessed for each participant. It was found that the more the young person is motivated by enjoyment and future goals, experienced a greater program dosage, held a lead role, and took part in programs characterized by higher adult-to-youth ratios, the more he or she reported a higher frequency of positive developmental experiences. The authors concluded that these factors be further verified and that additional factors like staff quality and the relationship between youth and adult leaders be further explored.

Following up on the call to explore additional factors that might moderate the demonstrated relationships between developmental gains youth perceive from activity participation and factors which influence those gains, Gould and Carson (2010, 2011) examined young athletes’ perceptions of their coaches’ behaviors and their own developmental experiences. In two separate studies school sports participants completed the Youth Experiences Scale-2 (a measure of positive and negative developmental experiences), the Coaching Behavior Scale for Sport (Côté, Yardley, Hay, Sedgwick, & Baker, 1999) and a series of items based on the qualitative findings from a coaching life skill study by Gould, Collins, Lauer, and Chung (2006, 2007). In the first study (Gould & Carson, 2010), multivariate analyses showed that young athletes who reported that higher

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levels of the development of emotional regulation, cognitive skills, feedback, prosocial norms and linkages to community, characterized their sports experience as ones where their coaches had more positive rapport with them, exhibited more competition strategy coaching behaviors, goal setting, and talked about how sport lessons related to life. Results also showed that the young athletes who perceived greater negative rapport with their coach felt that their coach less likely modeled sportsmanship, was less likely to assist them on competition strategies and mental preparation, goal setting, and provided less motivation to work hard independently, indicated that they experienced stress, social exclusion, and negative group dynamics through their participation more often.

In the second study, Gould and Carson (2011) found that coaching behaviors (e.g., positive and negative coaching rapport, emphasis on the development of competition strategies, emphasis on coaching life skills behaviors) and athletes' perceived developmental sport experiences (e.g., effort, time management) were linked. Significant gender differences on life skills experienced also emerged with females reporting more positive gains than their male counterparts. Hence, these two studies demonstrated that significant relationships existed between perceived coaching actions and the developmental gains young people derive from their sport participation and that females may derive more benefits than males.

While the exploratory studies by Gould and Carson (2010, 2011) demonstrated that coaching actions are linked to developmental gains in young athletes, expanding the range of coaching behaviors assessed would be a valuable extension of their initial studies. Theoretically, two variables that are likely to be related to the gains young athletes derive from sports participation are the motivational and caring climates created by the coach. Motivational climate, for example, focuses the pattern of normative influences and evaluative standards and sanctions that are emphasized and communicated in the environment. These typically take the form of the emphasis placed on mastery or self-referenced goals (e.g., individual improvement) versus ego or social comparison goals (e.g., winning). An abundance of research conducted over several decades shows that mastery-oriented climates lead to more adaptive achievement, motivation and ethical patterns of behavior on the part of athletes (see Duda, 2005 for a review). For instance, Smith et al. (2007) found that an intervention in which coaches adopted a mastery approach decreased young athletes' anxiety over the course of a season, whereas the anxiety of a control group of athletes increased. In another study, it was found that attitudes toward one's coach were positively related to perceptions of a mastery-oriented climate (Cumming, Smoll, Smith, & Grossbard, 2007). It makes logical sense, then, that focusing on creating a more mastery-oriented motivational climate would be related to developmental and life skill gains in young people because the sport environment would facilitate the young athlete being more motivated and focused on self-improvement. Ego orientation may cause young athletes to focus more of their attention on beating others and demonstrating ability than on improving their personal and social skills.

In addition to the motivational climate created by youth sport coaches, a caring environment fostered by coaches may be another coaching-related factor that is likely to influence positive youth development through sport. Newton, Fry, et al. (2007) developed the Caring Climate Scale (CCS) which assesses the degree to which youth perceive a particular setting to be safe, inviting, and supportive, and that they are valued and respected. Using the CCS to study underserved youth in a summer camp setting, Gano-Overway et al. (2009) found that a significant relationship existed between youth perceptions of a caring climate with increased prosocial and decreased anti-social behaviors. In another recent study, Fry and Gano-Overway (2010) found that young athletes who perceived that the climates of

their teams were more caring reported greater enjoyment, a greater commitment to their sport and were more caring toward their teammates and coaches. This suggests that coaches who create more caring climates will increase the likelihood that the athletes who play for them developing life skills and prosocial behaviors because those coaches will be more concerned with their athletes' personal development. It is also consistent with relationship theorists in the general field of youth development who contend that close relationships with caring adults allow youth to feel secure and stable enough to take on challenges (Larson & Walker, 2005)—as well as with mentoring and relationship-building literature (see Hamilton, Hamilton, & Pittman, 2004). Close relationships with adults also serve as sources of empathy and acceptance for youth which help them to effectively deal with threats to self esteem and to regulate emotions. Hence, one would expect that positive developmental experiences and life skills development would more likely occur when young people participate in sport climates perceived as higher in caring.

Finally, there is a need to study underserved youth—as much of the previous youth sports research has been conducted with white middle-class populations. This is especially important because sport is often touted as means of enhancing positive youth development for underserved youth. On one hand it could be argued that due to the communities these young people live in (e.g., higher crime rates, gang influences, fewer school resources) positive youth development is less likely to occur. At the same time, one might expect that programs emphasizing positive youth development might have greater impact in underserved populations because of their need. This study was designed to explore the developmental gains that young people from underserved communities derive from sport participation and factors that might amplify any demonstrated relationship.

Specifically, the present study had three purposes. These included to: (1) assess what developmental outcomes underserved youth report from their sports participation; (2) identify these youths' perceptions of the sports climate their coaches create; and, (3) measure the relationships between participants reported gains and perceptions of the psychosocial sports climate. Based on the previous research we would expect that there would be a significant relationship between mastery motivational climate and positive developmental gains in young athletes. It was also expected that greater developmental gains would be associated with greater perceptions of a caring coaching climate.

Method

Participants

Participants were 239 middle school and high school participants in Think Detroit/PAL (TDP) baseball and softball leagues. The sample included 153 (64%) male and 86 (36%) female participants. The mean age was 14.51 years ($SD = 1.97$), with a range of 10–19 years. The racial and ethnic make-up of the sample was predominantly Black (72.2%), followed by Hispanic (11.8%), "Other" (10.5%), and White (4.6%) demographics. Two participants failed to describe their race, and one participant identified as both Asian and Native American. Based on the schools these youth attended, the average likelihood that participants in this study were eligible for federally funded free and reduced lunch for children below the poverty level was approximately 52% ($SD = 25.9$).

Procedure

Based on conversations with the sponsoring organization's staff, the researchers' previous experiences working with this research population, and previous research in underserved communities,

a very low return rate of parental consent forms was anticipated as a result of factors such as unstable addresses. Because of this fact and the minimum risk involved in this study, the investigative team applied for a waiver of parental consent to the University's Committee for Conducting Research with Human Subjects. Thus, human subjects approval for the study did not require signed consent forms from parent or coaches, nor signed assent forms from youth participants. As a condition for receiving passive consent, coaches and parents were repeatedly informed about the study and its purposes in the following ways: (a) sponsoring organization staff called and emailed each coach; (b) letters explaining the study were given to youth and their parents by each coach; and (c) a brief description of the study was placed on the organization's website on the baseball/softball homepages. The study included both youth surveys (described in this paper), and observations of games and practices (not discussed in this paper). Parents and coaches were informed about both elements of the study. None refused to participate. Youth participants were also informed that participation was voluntary and that they were free to withdraw without any sanctions. Participants were given a five-dollar restaurant gift certificate upon completion of the survey.

Before administering the survey, coaches helped to organize the young players, but coaches did not oversee the completion of the surveys. Participants were told that their information would not be shared with coaches or parents. The researchers described the purpose of the study and provided directions to help complete the survey (e.g., explained the likert scale, etc.). Researchers then read 10–15 questions from the survey that might be difficult to understand for older children and younger adolescents. Simpler synonyms were provided in parentheses on the survey in order to explain more advanced terms. The survey administrator also helped to answer questions, to keep participants focused, and ensure that each player completed her/his survey without being influenced by teammates.

After approximately 15–25 min, participants returned surveys to the administrator who then checked for completion of all items, and for patterns of responses that would indicate a lack of consideration (i.e., rating all questions as '5's'). If the administrator saw incomplete items or suspicious patterns of scoring he/she asked the participant to go back over the survey and be sure of their answers.

Measures

Demographic survey

The demographic survey consisted of four questions that asked about the participant's: years of TDP involvement; number of TDP sports played; how involved they were in their current team; and if they would participate in TDP baseball/softball next year. The survey also assessed participants' age, gender, race, and school attended.

Youth Experiences Survey-2.0 (YES-2)

The YES-2 (Hansen & Larson, 2005), was constructed to assess the types of positive and developmental experiences youth may encounter while participating in organized activities, such as sports. The authors argue that while links have been established between youth participation in extracurricular activities and the development of young people (e.g., Eccles & Gootman, 2002), little scientific information existed on the "specific" developmental processes that occur from youth activity participation or how these experiences differ across youth. Hence, an instrument that assessed key "specific" personal and interpersonal experiences, like identity and teamwork and social skills, that would likely be associated with extracurricular activity participation needed to be developed. The resulting YES-2 self-report questionnaire, then, asks the participant to respond to items concerning positive and negative experiences

within a specific activity. More specifically, in this study participants were instructed to answer the items regarding their TDP baseball or softball program by rating to what degree they had experiences such as "learned to push myself," "learned to find ways to achieve my goals," "learned about developing plans for solving a problem" and "became better at dealing with fear and anxiety" in their TDP involvement. For each item, participants used a four-point Likert-type scale ranging from 1 ("not at all") to 4 ("yes definitely") to describe the degree to which they feel a given experience was characteristic for their sport involvement. The YES-2 has been shown to be valid and reliable with past research showing the positive and negative items exhibited alpha coefficients greater than .90 ($\alpha = .97$ and $\alpha = .95$ respectively; Hansen & Larson, 2007).

The YES 2.0 is comprised of 7 major scales (including 6 positive and 1 negative scale) and 22 subscales that fall within the major scales. These include: *identity work* (exploration, reflection); *initiative* (goal setting, effort, problem solving, time management); *basic skills* (emotional regulation, cognitive skills, physical skills); *teamwork and social skills* (group process, feedback, leadership and responsibility); *interpersonal relations* (diverse peer relationships, prosocial norms); *adult networks* (integration with family, linkages with community, linkages to work); and *negative experiences* (stress, negative peer interaction, social exclusion, negative group dynamics, inappropriate adult behavior).

The original scale was revised for the purposes of the present study so that the instructions directed participants to reflect on their TDP experiences. For instance, items pertaining to cognitive skill developmental experiences (e.g., academic skills of reading, writing, math, etc.), skills for finding information, and computer/internet skills were removed because of their perceived irrelevance to typical sport experiences. The "Basic Skill" scale was retained with the four "Emotional Regulation" questions, the "Communication Skills," and the "Physical Skills" question. Additionally, items that could be perceived as controversial or potentially intrusive were not included because of the inability to follow up on those concerns and the fact that a passive parental consent procedure was approved by the Institutional Review Board. Items deleted included: "youth in this activity got me into drinking alcohol or using drugs," "adult leaders 'hit' on me," and "adult leaders make inappropriate sexual comments or jokes." This reduced the "Inappropriate Adult Behavior" subscale from four items to two; and the "Negative Peer Influences" subscale from four to three items.

Caring climate scale (CCS)

To address youths' perception of the team climate, the Caring Climate Scale (Newton, Fry, et al., 2007) was administered. Thirteen questions assessed the "extent to which individuals consistently perceive a particular setting to be interpersonally inviting, safe, supportive and able to provide the experience of being valued and respected" (p. 67). It has been shown to have the predicted factor structure, good internal consistency ($\alpha = .83-.92$), and to have good convergent and discriminate validity.

Motivational climate scale for youth sports (MCSYS)

The MCSYS (Smith, Cumming, & Smoll, 2008) measures the degree young people feel the youth sports environment emphasizes mastery or self-referenced objectives, versus social comparison or winning-and-losing goal orientation. This instrument includes six mastery-orientation questions and six ego-orientation questions and has demonstrated good internal consistency for each subscale ($\alpha > .70$) and adequate test-retest reliability (.84 for mastery, .76 for ego) (Smith et al., 2008). Previous research has shown the mastery goal orientations correlate to more adaptive patterns of motivation and sustained physical activity involvement.

Coaching behavior life skill items (CBLs)

To assess coaching factors related to the facilitation of positive life skill development in athletes, a set of four questions derived from the results of a qualitative study (Gould et al., 2007) investigating the life skills development strategies used by excellent high school football coaches was completed by the participants. These items addressed the coach talking about how sport lessons relate to life, modeling good sportsmanship, how much fun it was to play for the coach, and how much the player liked playing for their coach. Each item used a five-point Likert-type scale, ranging from 1 (“Not at all true”) to 5 (“Very True”) and were combined to form a single measure of coaching life skills. The reliability of the combined scale in this study was acceptable ($\alpha = .79$).

Treatment of data

The data was checked for the degree of skewness and kurtosis and there was no need to conduct transformations. Six outliers were eliminated from the YES-2 dataset—including three from the positive regressions and three from the negative regressions. After eliminating the outliers, cleaner models with stronger overall R^2 values emerged. Finally, in order to create the “dedication” variable, the responses from the self-rating of ‘how important the team is to the player,’ and ‘years playing TDP sports’ from the demographic survey were combined by converting answers from each question to a z-score, and then aggregating the standardized values. No other manipulations or transformations of the raw data were made.

Results

Descriptive statistics

Descriptive statistics for middle (under 14) and high school (under 18) boys and girls as well as the total sample are reported in Table 1 along with reliability values for survey instruments and subscales. Considering that the YES-2 used a 4-point likert scale, positive ratings were relatively high (Total $M = 3.02$, with high school (HS) girls scoring highest ($M = 3.19$)), and negative scales were very low (Total $M = 1.72$, with girls, $M = 1.52$, scoring lower than boys). Relative to the scores for the total sample, highest positive subscale scores were found for teamwork and social skills

($M = 3.19$), basic skills versus skills ($M = 3.17$), and initiative ($M = 3.15$) while the highest negative subscale scores were evident for stress ($M = 1.95$), negative group dynamics ($M = 1.73$) and negative peer influences ($M = 1.70$). Noteworthy patterns among the scales based on league age and gender included higher scores for HS girls on Initiative, Skills, and Teamwork/Social Skills (the last scale scoring particularly low for middle school (MS) boys). HS Boys scored relatively highly on Stress, and on Social Exclusion subscales. There was also an interesting contrast between MS boys and HS girls on the Inappropriate Adult Behavior subscale, with girls describing much better (less negative) sport experiences.

Likewise, scores on the Motivation, Caring Climate, and Coaching Behavior Life Skills (CBLs) surveys were generally positive. Each of these instruments used a 5-point likert scale. Average ratings were: Mastery ($M = 4.29$, $SD = .82$), Ego ($M = 2.20$, $SD = .85$), Caring Climate ($M = 4.30$, $SD = .75$), and CBLs ($M = 4.21$, $SD = .86$). Across both age groups, boys described lower Mastery and higher Ego Climates. Interestingly, HS players rated the CBLs questions higher than the MS boys and girls. On average, participants described 4.63 years ($SD = 3.33$) of experience in TDP sport programs. Overall and including their participation in the baseball and softball programs, which was the focus of this study, participants did not participate in a large number of TDP sports ($M = 1.69$, $SD = .88$, Range = 1–6). Players described being very involved in their team ($M = 4.37$, $SD = .91$, on a 5-point likert scale), and 81.2% of them planned to play baseball/softball again next year.

Relationships between developmental experiences and team climate

Similar to the data analytic approach of Hansen and Larson (2007) and Gould and Carson (2011), two standard multiple regressions (see Pallant, 2009) were conducted to assess the relationship between team climate and youth experiences (both positive and negative). Positive and negative experiences were represented by aggregating the positive scales and negative subscales of the YES-2 (respectively). This approach is in keeping with previous literature (i.e., Larson et al., 2006), where researchers have commonly compared the six major positive scales to the five subscales that fall under the negative experience scale. Team climate was represented by four measures: Mastery climate, Ego climate, Caring climate, and CBLs. As such, each of the two

Table 1
Means (with standard deviations) for instrument's scales [with reliability values].

Scale [Cronbach Alpha]	MS girls	MS boys	HS girls	HS boys	Total
Valid number (listwise)	36	68	43	76	223
Age	12.71 (1.23)	13.00 (.87)	15.77 (1.31)	16.15 (1.36)	14.51 (1.97)
Years in TDP programs	3.59 (2.40)	4.53 (2.78)	3.53 (3.09)	5.82 (3.90)	4.63 (3.33)
YES-2 positive experiences [.898]	2.87 (.54)	2.93 (.51)	3.19 (.39)	3.09 (.49)	3.02 (.50)
Identity work [.567/.395]	2.78 (.70)	2.90 (.62)	3.11 (.55)	3.06 (.54)	2.97 (.61)
Initiative [.770]	3.03 (.55)	3.04 (.51)	3.36 (.39)	3.18 (.51)	3.15 (.51)
Basic skills [.670/.404]	3.06 (.66)	3.11 (.60)	3.37 (.50)	3.17 (.59)	3.17 (.60)
Interpersonal relationships [.753]	2.66 (.63)	2.73 (.65)	2.98 (.70)	2.91 (.71)	2.82 (.68)
Teamwork & social skills [.767]	3.17 (.57)	3.04 (.58)	3.43 (.36)	3.21 (.59)	3.19 (.56)
Adult networks & social capital [.645/.377]	2.51 (.72)	2.76 (.76)	2.87 (.64)	3.03 (.65)	2.83 (.72)
YES-2 negative experiences [.803]	1.55 (.58)	1.77 (.59)	1.52 (.74)	1.89 (.90)	1.72 (.74)
Stress [.622/.356]	1.81 (.84)	1.90 (.67)	1.73 (.76)	2.18 (.91)	1.95 (.81)
Negative peer influences [.846]	1.49 (.77)	1.80 (.82)	1.44 (.77)	1.86 (1.02)	1.70 (.89)
Social exclusion [.821]	1.32 (.45)	1.54 (.76)	1.48 (.76)	1.73 (.98)	1.55 (.81)
Negative group dynamics [.766]	1.62 (.75)	1.77 (.69)	1.53 (.79)	1.88 (.96)	1.73 (.82)
Inappropriate adult behavior [.723]	1.51 (.71)	1.84 (.90)	1.39 (.93)	1.80 (1.05)	1.68 (.94)
Motivation—mastery climate [.833]	4.66 (.56)	4.03 (.93)	4.66 (.43)	4.11 (.85)	4.29 (.82)
Motivation—ego climate [.704]	1.76 (.54)	2.28 (.80)	1.93 (.88)	2.50 (.89)	2.20 (.85)
Caring climate [.955]	4.24 (.68)	4.17 (.73)	4.60 (.70)	4.28 (.78)	4.30 (.75)
Coaching behavior life skills [.791]	4.13 (.86)	4.01 (.98)	4.51 (.46)	4.26 (.86)	4.21 (.86)

Note. Reliability values in bold are acceptable. Scales with two reliability values in brackets failed to reach a Cronbach Alpha level of .70, but have fewer than four items, so the inter-item mean was cited as the second value (with a critical level of .20).

regressions had a single outcome (positive or negative experience), and four (climate) predictors.

The first regression examined predictors of positive experience, and produced a significant model $F(4,228) = 22.79, p < .001$, with a low-moderate R^2 of .286. All four predictors were significant (in order of descending standardized beta-values): Caring climate ($\beta = .251, p < .001$), CBLS ($\beta = .232, p = .003$), Mastery ($\beta = .175, p = .021$), and Ego ($\beta = .157, p = .007$). The second regression examined predictors of negative experience, producing a significant model $F(4,229) = 43.27, p < .001$, with a moderate R^2 of .420. Only Ego climate significantly predicted negative experiences, $\beta = .617, p < .001$. Although the other three predictors had expected negative beta-values, none of the p values were below .100. Note that the standardized beta-value for Ego climate was much greater than the β 's in the positive experience regression, meaning that Ego climate has a stronger negative impact on youth experiences than any other factor has on positive experiences.

Relationships between developmental experiences and demographic factors

As with the previous analysis of team climate, two standard multiple regressions were conducted to assess the relationship between positive and negative experiences, and demographic factors. Demographic factors included Player age, Gender, and Dedication. Dedication was a composite of standardized z-scores for two survey questions: how many years have you participated in TDP sports, and how involved are you in your TDP sport?

The first regression examined predictors of positive experience, and produced a significant model $F(3,227) = 18.62, p < .001$, with a low-moderate R^2 of .197. Dedication ($\beta = .335, p < .001$) and Age ($\beta = .250, p < .001$) were significant predictors. The second regression predicted negative experience, producing a significant model $F(3,228) = 5.71, p = .001$, with a very low R^2 of .070. Only Gender significantly predicted negative experiences ($\beta = -.203, p = .002$). Note that the standardized beta-value for Gender was negative, indicating higher, more negative scores for boys (since boys were coded as 0 and girls as 1).

Canonical correlation analyses

In order to examine the relationship between the more precise subscales within the positive and negative domains of the YES-2, and the Climate and Demographic factors in sport, multivariate canonical correlation analyses (CCAs) were conducted (see Raykov & Marcoulides, 2008; Thompson, 2000). As Table 1 shows, all YES-2 and team climate measures were sufficiently reliable. Two separate CCAs were conducted using the four team climate measures and the three demographic items as 'predictors' (or covariates). The first series of CCAs included the six positive YES-2 scales as the 'criterion' (or dependent) variables; the second CCA included the five negative subscales from the YES-2. As such, the numbers of variables in each CCA were 12 and 13—within the subject-to-variable ratio recommended by Stevens (1986). The overall Wilks' Lambda values for both of the positive ($\lambda = .495$) and negative ($\lambda = .463$) CCAs were significant ($p < .001$), so both models were valid and subsequent analysis of the outputs was justified.

Positive outcomes

The positive YES canonical revealed two significant root correlations accounting for 87% of explained variance. The first root ($R_{c1} = .520$, 63.1% of explained variance) showed a moderate–strong relationship between the predictors and positive experiences (Wilks' $\lambda = .495, F(42,1030) = 3.96, p < .001$). Standardized coefficient weights for both roots are included in Table 2.

Table 2

Standardized canonical coefficients of items included in the canonical correlation analysis of positive YES-2 scales.

	Loadings	
	Root 1	Root 2
Predictors variables		
Player age	.36	-.06
Gender (boys = 0; girls = 1)	-.08	-.53
Dedication (years in TDP, dedication self-rating)	.43	.32
Mastery climate	.43	-.39
Ego climate	.00	.19
Caring climate	.20	-.48
Coaching behavior life skills	.24	.62
Criterion variables (YES-2 positive scales)		
Identity work	.06	.49
Initiative	.31	-.70
Basic skills	.10	.17
Interpersonal relationships	-.05	.22
Teamwork & social skills	.33	-.96
Adult networks & social capital	.41	.96

Note. Loadings in bold are greater than the critical value of .30.

Using a critical value of .3, the first root was comprised of three criterion items and three predictor items. The significant criterion items (with loadings in parentheses) were Adult networks and social capital (.41), Teamwork and social skills (.33), and Initiative (.31). The significant predictor items were Mastery climate (.43), Dedication (.43), and Age (.36). Note that all loadings were positive. This root suggests that the strongest relationships among all of these variables are between older, more dedicated youth, in mastery-oriented climates, associated with better networking, team and social skills, and personal initiative. In short, this correlation highlights the positive factors that have the strongest influence, as well as the most strongly associated outcomes in this underserved sport setting.

The second canonical root ($R_{c2} = .201$, 24.4% explained variance) represented a low-moderate significant relationship between relationship between the predictors and positive experiences (Wilks' $\lambda = .753, F(30,882) = 2.16, p < .001$). The first root was comprised of four criterion items and five predictor items. The significant criterion items were Adult networks and social capital (.96), Teamwork and social skills (–.96), Initiative (–.67), and Identity work (.49). Of these four, the first two were clearly much stronger items. As Table 2 shows, there were five significant predictors, but for the sake of identifying the most impactful and parsimonious combination of items, three were deemed most significant, including: CBLS (.62), Gender (–.53), and Caring climate (–.48). This root is a less discernable combination of positive and negative loadings. The root combination suggests that the strongest relationships among these variables have CBLS, being a boy (negative gender), and less caring climates, associated with more adult networks and social capital, but lower team and social skills. In short, this correlation highlights the fact that when sport settings have mixed positive and negative attributes, there are mixed positive and negative (i.e., less positive) outcomes.

Negative outcomes

The negative YES canonical revealed three significant roots accounting for 96% of explained variance. The first root ($R_{c1} = .658$, 70.3% of explained variance) showed a moderate–strong relationship between the predictors and negative experiences (Wilks' $\lambda = .463, F(35,928) = 5.32, p < .001$). Standardized coefficient weights for both roots are included in Table 3. Using a critical value of .3, the first root was comprised of two criterion items and one predictor. The significant criterion items (with loadings in parentheses) were Negative peer influences (–.41), and Inappropriate adult behavior (–.36). The significant predictor item was Ego

Table 3

Standardized canonical coefficients of items included in the canonical correlation analysis of negative YES-2 scales.

	Loadings		
	Root 1	Root 2	Root 3
Predictors variables			
Player age	-.06	-.68	.07
Gender (boys = 0; girls = 1)	.03	-.22	-.27
Dedication (years in TDP, dedication self-rating)	-.08	.19	.45
Mastery climate	-.07	-.02	1.09
Ego climate	-.92	-.15	-.21
Caring climate	.10	.18	-.79
Coaching behavior life skills	.18	-.69	-.31
Criterion variables (YES-2 negative subscales)			
Stress	-.24	-.39	1.35
Negative peer influences	-.41	.48	-.57
Social exclusion	-.21	-1.51	-.55
Negative group dynamics	.08	.49	-.02
Inappropriate adult behavior	-.36	.86	-.08

Note. Loadings in bold are significant, based on the critical value of .30.

climate (–.92). Note that all three loadings were negative, so for ease of interpretation, all three can be treated like positive coefficients. This root suggests that the strongest relationships among all of these variables are between ego-oriented climates, and negative peer influences and inappropriate adult behavior. This correlation highlights the ego-oriented climates as being the strongest predictor of negative experiences—in particular, with negative peer and negative adult influence experiences.

The second canonical root ($R_{c2} = .140$, 14.9% explained variance) represented a low-moderate significant relationship between relationship between the predictors and negative experiences (Wilks' $\lambda = .768$, $F(24,772) = 2.53$, $p < .001$). The first root was comprised of all five criterion items and two predictor items. As Table 3 shows, there were five significant criterion items, but for the sake of parsimony, two items were deemed most significant: Social exclusion (–1.51), and Inappropriate adult behavior (.86). There were two significant predictors: CBLs (–.69), and Age (–.68). This root suggests that there is a strong relationship between younger players whose coaches are less dedicated to intentionally teaching life skills, and more inappropriate adult behavior, yet less social exclusion. Though mixed, this result is understandable if younger participants experience more inclusive experiences, but that the failure of their coaches to emphasize psychosocial development was also associated with poor adult role modeling. Once again then, the CCA shows that mixed (positive and negative) predictors are associated with mixed outcomes.

The third canonical root ($R_{c3} = .097$, 10.4% explained variance) represented a low-moderate significant relationship between relationship between the predictors and positive experiences (Wilks' $\lambda = .875$, $F(15,613) = 2.02$, $p = .012$). The first root was comprised of three criterion items and four predictor items. The significant criterion items were Stress (1.35), Negative peer influences (–.57), and Social exclusion (–.55). There were four significant predictors, but for the sake of parsimony, two were deemed most significant based on the magnitudes of the loadings: Mastery climate (1.09), and Caring climate (–.79). This root is difficult to interpret and contributed relatively little to the overall analysis. However, the root suggests that a mastery-oriented climate that lacks caring coaches is associated with positive peer influences and social inclusion, yet higher levels of stress.

Discussion

This study was designed to assess what developmental outcomes underserved youth report from their sports participation,

identify these youth's perceptions of the sports climate their coaches create, and to measure the relationships between participants reported gains and perceptions of the psychosocial sports climate. An inspection of the YES-2 means and standard deviations shows that these youth most often perceived teamwork and social skills, physical skills development and initiative as the benefits they felt they most often derived from their sports experience. Stress was the negative experience most often experienced. These results compare favorably with Larson et al. (2006) who found that the positive experiences of initiative, emotional regulation and teamwork, and the negative experience of stress were most experienced by sport participants. Participants in the present study most often perceived that mastery versus ego climate was created in their program and that overall the climate was a caring one. This is not surprising since the league these young people play in specifically focuses on achieving positive youth development through sport and emphasizes the importance of creating a caring and mastery-oriented climate in their coach training program.

A number of significant relationships were evident when the relationships between YES-2 outcomes and motivation and caring climate predictor variables were examined. This pattern of results clearly shows that the more coaches create caring, mastery-oriented environments, the more likely positive developmental gains result. This is consistent with the previous motivational (Smith et al., 2007) and caring climate (Fry & Gano-Overway, 2010; Newton, Watson, et al., 2007) research. These results also support the previous work of Gould and Carson (2010; 2011) showing that coaching actions and behaviors have an important influence on personal and social development of young people involved in sport in general and in underserved populations in particular.

Looking more specifically at our results, however, shows that some of these relationships are more complex than might be initially thought. As would be expected, the more a mastery and caring climate is perceived the greater the positive influence on the positive YES outcomes. Similarly, negative YES outcomes are more likely the more an ego climate is perceived. However, greater mastery and caring climate scores were not associated with decreased negative YES experiences. Ego climate had a significant positive effect on positive YES-2 scores. However, the negative impact of ego climate scores was much stronger than its positive effects. The results from these analyses show, then, that positive coaching in the form of creating a both a mastery and caring climate has a positive influence on life skills experiences of youth, and negative coaching in the form of creating an ego-oriented climate has a predominantly negative influence. Of the three predictors, the strongest influence on youth experiences came from ego-oriented climates, suggesting that avoiding an ego-oriented climate is especially important in foster positive psychosocial development.

Age and dedication were strong predictors of positive youth experiences and weaker predictors of negative YES subscales based on the R^2 values of the regression models. Also, boys described more negative experiences than did girls. Further research should be conducted to examine gender differences. In particular, it would be valuable to ascertain if boys consistently describe more negative sport experiences and if so, to determine why? It is interesting to note that R^2 values across the four regression models were higher for the analyses of climate factors than for the demographic regressions—meaning that climate predicts youth sport experiences more robustly than demographic factors. This suggests that it is extremely important to create a caring climate supporting the theoretical contentions of Newton, Watson, et al. (2007).

The canonical analysis provides support for the regression analyses. In the canonical analysis using the positive YES scales, the first root suggests that age, dedication, and mastery-oriented climates are the strongest predictors of positive YES experiences,

and than the positive outcomes most prominent in this underserved sport setting included better networking, personal initiative, and team and social skills. In the canonical analysis using the negative YES subscales, the first root was by far the strongest and the clearest to interpret: showing a strong negative effect of ego-oriented sport climates. The other two negative roots and the second positive root each support one simple theme: mixed settings (imperfect ones that have both positive and negative elements) result in mixed outcomes (less than optimal positive experiences).

In summary, then, our results suggest that optimal life skills development most often result when climates are created that are low in ego orientation, but high in mastery and coach caring. Ego climate was found to be the single most powerful predictor of youth experiences; suggesting that it is very important to avoid creating an ego climate. This implies that coaches in programs like the one studied here that have positive life skill development as a primary goal should not only create coaching climates that foster mastery experiences and caring environments, but also avoid the creation of an ego climate.

Things get much more complicated when climates are mixed—for example, ego climates may have a slightly positive impact in instances where coaches also display high levels of mastery-orientation and high caring. Mixed coaching or team climates, then, result in mixed outcomes because they are associated with both positive and negative experiences. Given that youth sports programs most likely attract volunteer coaches with a range of motivational and caring climate orientations an interesting question is to what degree coaches who adopt an ego-oriented or mixed coaching climate are capable and willing to change to a high mastery and caring climate. In addition to replicating the results found here research should be conducted to examine this issue.

Like all studies, this study has several limitations that must be considered. First, we only surveyed youth from summer baseball and softball programs and not other sports sponsored by the organization. This certainly limits generalizability. Second, in addition to youth perceptions of their coach's behavior we had hoped to supplement the assessment of coaching behaviors through the youth of an observational measure (The Youth Program Quality Assessment instrument, High Scope Educational Research Foundation, 2006). While the investigators were trained to use the instrument and a large number of games were observed, psychometric issues with scale reliabilities prevented its use in this study. Although this was disappointing we recommend continued efforts to supplement survey data with observational measures.

Observational data would have helped to validate the self-report data in this study. Over-reliance on self-report is a recognized shortcoming of much psychosocial research (Hagger & Chatzisarantis, 2009). The validity of motivational climate measures in this paper are worthy of discussion as 2 of the 239 participants were 10 years old (.8%), and 11 participants were under the age of 12 (4.6%). Eleven is a significant age because it is at this point that children differentiate effort from ability (Nicholls, 1989). However, the Smith et al. (2008) have validated the instrument for athletes with reading levels at or above grade four, and for children ages 9–14. While the impact on the results of this study were likely to be very minimal, it is worth noting that instrumentation must be developmentally sensitive. This practice is particularly challenging when the study involves comparisons across age groups that may understand developmental concepts differently. Finally, these results are non-causal and therefore only provide a glimpse into the relationship between the youth sports coaching environment and the development of life skills. Intervention studies and studies using longitudinal are badly needed.

Combined with the authors' previous research in urban Detroit, the results of this study inform the following recommendations for

fostering positive sport climates that promote youth development. A case should be presented to coaches that, while ego-oriented climates can be associated with some positive youth experiences, this motivational climate is also associated with negative youth experiences. If coaches want to have the most positive impact, ego orientation must be minimized in favor of mastery settings—and in either case, a caring climate should be developed. Educators could adopt the slogan “what you're doing is okay, but if you want to be the best—if you really want to have an impact on your players—create a caring, mastery climate that is less ego-oriented.” To promote mastery orientation and reduce ego orientation, coaches must learn how to translate their competitive objectives into process goals that emphasize personal development in athletes. Deemphasizing results in favor of personal development on the field can segue into the promotion of personal development off the field (in terms of life skills and character development). Finally, regardless of the motivational orientation that coaches reinforce, caring climate is vital. Relationship building is a particularly crucial factor in fostering a sense of caring and support. As the saying goes, 'kids don't care what you know until they know that you care.' The more that a coach shows that she/he cares about the player as a person, the more malleable youth will be to psychosocial development.

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