Trajectories of Participation in Athletics and Positive Youth Development: The Influence of Sport Type[1]

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Jennifer P. Agans

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Abstract

In order to examine youth experiences in athletic activities with different characteristics, the present study explored the developmental outcomes associated with participation in three different types of sport (individual sports, team sports, and dance-type sports) as well as across six patterns of participation (no participation, joining sports, constant participation, changing participation, dropping out, and inconsistent participation), using data from Grades 10, 11, and 12 of the 4-H Study of Positive Youth Development. Results indicated that female youth who participated in athletics across all three years, as well as youth who participated simultaneously in both individual and team sports, showed the most favorable outcomes when compared to youth who did not participate in athletics, with results varying by sex. Findings are discussed in relation to prior work on youth sport participation from an embodied relational developmental systems perspective, and suggestions for future research are made.

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Researchers interested in sport, education, health, and public policy have strongly criticized the current state of affairs with regard to physical activity among young people, and have made their recommendations for change widely available (e.g., Active Living Research, 2009; Beets, et al., 2009; Ogden & Carroll, 2010, Barros, Silver, & Stein, 2009; Carter & Micheli, 2011). For example, breaks in the school day for physical activity, recess, and daily physical education classes, have been found to benefit students' cognitive and physical development (e.g., Basch, 2011a, 2011b, 2011c). However, most students, especially low-income students, do not have access to schools where these opportunities for positive movement experiences are offered. Out-of-school time activities such as recreational sport participation are also promoted as alternative sources of physical activity, despite issues of accessibility and mixed findings as to the benefits of athletic participation (Le Menestrel & Perkins, 2007). The importance of changes in educational policies, school and activity funding, and the content of curricula are under discussion in the literature, although often with the recognition that since these solutions require top-down implementation, these modifications are unlikely to occur.

However, it is also unlikely that even a change in policy, or an increase in funding, will be enough to solve these issues. Rather, what is needed is a paradigm shift in the way we think about youth engagement in athletics and physical activity. In short, sport participation and increased time in physical education classes are not a panacea for the widespread problems of obesity and sedentary activity. Instead, by taking a more nuanced view of the relations

between individual youth and the activities available to them, researchers can promote an understanding of physical activity based on the unique characteristics of both the youth and the sport and on the ways in which these characteristics work together to produce a lived experience of athletics that can contribute to the positive development of youth.

Prior Research on Athletic Participation

Despite the wide variety of sports in which youth participate, studies of out-of-school time (OST) activities often group "athletics" into one type of activity, to be compared with other overarching categories such as "performing arts" and "community service" (see, for example, Hansen, Larson, & Dworkin, 2003; Pederson, 2005; Zarrett, et al., 2009). However, this procedure ignores fundamental differences in the nature of sports participation, e.g., differences in team structure (e.g., between team and individual sports), differences among levels of competitive play (e.g., between recreational and varsity teams), and differences in individual coaches and team environments. Within a relational developmental systems theoretical framework (Overton, 2010; Overton and Müller, in press), this fundamental diversity in the sporting environment affords different opportunities for individuals to engage in adaptive relations with their contexts (e.g., for the same youth, the experience of competing as part of an elite community basketball team will be very different from the experience of playing as part of a recreational school golf program). It is therefore important to examine variation within the athletic experiences of youth in order to better understand athletic participation and its influence on development.

In general, different types of OST activities (e.g., volunteering, playing sports, participating in academic clubs, etc.) have been found to provide distinct opportunities for positive development across multiple domains (e.g., personal, interpersonal, academic, etc.), although the reasons for these differences have not been thoroughly explored (Hansen, et al., 2003). Endogenous factors may account for some of these differences among activity groups, as individuals vary in the types of activities they seek out and enjoy. However, program characteristics also greatly contribute to shaping the experience of youth, and therefore programs that are similar in structure may provide contexts that offer comparable developmental opportunities (Hansen, Skorupski, & Arrington, 2010). For example, athletic activities that share the same team structure may provide similar opportunities, whereas athletic activities with different team structures may provide different opportunities for development. Within a theoretical framework emphasizing the fusion of the characteristics of the program environment and the characteristics of the individuals who choose to participate in it (Overton, 2010), it is possible to examine the active role of both individual and context in shaping the development of each other and of the mutually influential relations between the two (i.e., represented as individual ← → context relations) if we understand enough about the characteristics contributing to this system of relations.

Furthermore, this relational developmental systems perspective acknowledges that in addition to the development that occurs within each contextual setting, the combinations of activities in which youth participate

expose them to a variety of contexts, communities, and adult role models; such exposure generates a blend of influences and opportunities, all of which contribute to the development of the individual (Zarrett, et al., 2009). This complex and fused interconnection among contexts and individuals makes it difficult and often counterproductive to separate out the portion of the variance in outcomes that can be attributed to any one activity or activity type. Indeed, the difficulty and theoretical inadvisability of such separations illustrates the importance of a holistic perspective on activity involvement, on youth development more broadly; even as each activity offers its own development-enhancing qualities, each individual experiences a unique combination of activities with variation in these qualities (Pederson, 2005). Therefore, while the present research focuses on participation in specific types of activities within the athletic domain, it is important to remember that sports participation is only one facet of the multidimensional constellation of contexts in which each youth is embedded and to which each youth brings his or her own attributes.

Prior studies have shown differences in developmental outcomes among youth who participate in sports and youth who participate in other types of extracurricular activities, such as faith-based activities, arts activities, and service activities (e.g., Larson, Hansen, & Moneta, 2006). These differences include decreased risk of school drop-out for athletes, but not for youth involved in other extracurricular activities (McNeal, 1995), better mental health and academic outcomes for athletes when compared to peers uninvolved in extracurricular activities (Bartko & Eccles, 2003), and higher rates of alcohol use for athletes

than for their non-athlete peers (Barber, Eccles, & Stone, 2001). Sports participation has also been shown to offer developmental experiences related to initiative and emotional regulation, in addition to being more stressful than other types of activities (Larson, et al., 2006). Other studies (e.g., Zaff, Moore, Papillo, & Williams, 2003) do not find individual differences in outcomes among participants in different types of activities, although participation in extracurricular activities in general has been shown to be associated with developmental benefits (also see Mahoney, Vandell, Simkins, & Zarrett, 2009). The wide variety of outcomes associated with sports participation reflect in part the wide net cast by researchers, and, as well, the complex role of these experiences in the lives of youth.

In addition, studies that take a more multidimensional approach to youth involvement have found more nuanced results for sports participation. For example, Zarrett and colleagues (2009) found that youth who participated in athletics (both team sports and individual sports) in combination with youth development programs (such as 4-H or Big Brothers / Big Sisters) had higher scores on measures of positive youth development (PYD) than youth who only played sports and had low levels of participation in other activities. In turn, the sports-only group in this study had higher PYD scores than those youth who did not play sports at all (a cluster of youth with generally low levels of involvement in extracurricular activities). Similarly, Hansen and colleagues (2010) found differences in the types of skills and relationships youth gained from participation in individual sports when compared to team sports, as well as differences among

types of school clubs, and performing arts activities. Studies such as these illustrate the need for a deeper understanding of activity contexts. From an applied, positive youth development perspective, wherein every youth is assumed to have strengths on which to build (J. Lerner, et al., in press), the knowledge that each activity context offers different developmental experiences and opportunities allows policy-makers and practitioners to move away from a one-size-fits-all approach to youth programming. This knowledge promotes working with individual youth within the contexts that can best support their strengths. Similarly, from a relational developmental systems theoretical perspective (Lerner, 2006; Overton, 2010; Overton & Müller, in press), examining different types of athletic context more closely allows researchers to gain a more in-depth understanding of the nuances of the setting, thereby enabling a better understanding of the synthesis between the athlete and the sport.

However, in the sport psychology literature, as well as in the developmental science literature that discusses sport participation, youth sport is often treated as a predictor variable, or a moderator of other constructs (e.g., Le Menestrel & Perkins, 2007; Coatsworth & Conroy, 2007; Rutten, et al., 2008; Sandford, Duncombe, & Armour, 2008; Dworkin & Larson, 2006; Fredricks & Eccles, 2006; Moran & Weiss, 2006; Barber, Eccles, & Stone, 2001). Studies that focus on leadership, peer acceptance, or academic achievement in the context of sport, for example, are usually studies of leadership, peer acceptance, or academic achievement, and not studies of the characteristics of the sport context itself (e.g., Schernoff & Vandell, 2007). Similarly, studies of coaching style or of team

culture tend to focus on one or more aspects of the sport context, but usually limit the data collection to participants in only a small number of sports so as to be able to compare data across teams (e.g., Reinboth, Duda, & Ntoumanis, 2004). More problematic, some studies do not provide data on the specific sports in which their athletes participate (e.g., Amorose & Anderson-Butcher, 2007). In doing so, these studies have made it possible to examine coaching style or team culture within sport as a broad context, but are unable to generalize their findings to the broader sport context because cross-sport validation studies have not been done. Other studies (e.g., Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2009) have used participants from a wide variety of sports to validate measures, but have not explicitly examined possible differences among sports of different types.

These studies of youth athletic participation are important in that they increase knowledge of the various ways in which sport participation can play a role in the lives and development of youth. However, because these studies take a variable-centered approach they cannot speak to the holistic lived experience of individual athletes. Most people can think about their childhood and adolescence and recall a time that they participated in athletics, whether it was a mandatory physical education experience or involved a long-term commitment to competing in a sport. Still, when thinking about one's own athletic experiences, constructs like leadership, peer acceptance, coaching style, and team culture are likely to be intermingled and merged with one's own psychological experiences including factors from outside the sport context itself (such as events going on in the family, the wider social experience of the school, etc.) and tinged with one's own

emotional response to the experience. Accordingly, variable-centered studies of youth sport take the youth experience out of athletic participation, attempting to classify "sport" as a uniform black box and, depending on the study, often seeking to demonstrate that this box is universally beneficial to youth development (e.g., Le Menestrel & Perkins, 2007; Coatsworth & Conroy, 2007).

A New Approach: Relational Developmental Systems Theory

Relational developmental systems theory emphasizes the importance of studying human development through analyses of integrated, mutually influential exchanges among individuals and their contexts, the individual ← → context relations noted earlier, with the understanding that these relations form a fully integrated system involving unique individuals and complex contexts (e.g., Lerner, 2006; Overton, 2006; 2010). Therefore, within a relational developmental systems theoretical framework, the above-described emphasis on the variables rather than on the experience of sport clearly takes athletic participation out of context. The experience of participation in sport develops as the individual engages with the athletic context, and therefore the experience is fundamentally fused with both the individual and the particular context in which he or she participates. For example, splitting the construct of "coaching style" apart from the youth who are being coached, their interactions with the coach, and the relations of these individual factors with the broader context of their sporting and non-sporting environments reduces a complex developmental experience to a few variables. Such an approach limits our ability to describe what is actually

happening in the individual ← → context relations, to explain the results we find, and to optimize the athletic experiences of youth.

Because development is contextual and integrated, and can be described as resulting from mutually influential individual ← → context relations, it is essential to recognize that individuals and contexts exist as relational entities within this reciprocal system. The body is part of the system as well (Thelen, 2008), as an observable, and thus objectified, body and as a conscious subject. The concept of embodiment, wherein the experience of the organism is encapsulated in its perceptual abilities and physical form, attempts to describe the experience of human life more precisely through the concept of the "lived body" (e.g., Overton, 2008). The embodiment perspective rejects Cartesian dualisms, recognizing that the psychological self cannot be separated from the physical body (Liben, 2008), and therefore the concept of embodiment is fundamental to understanding individual lived experiences of participation in physical activity.

The "lived body" exemplifies individual ← → context relations; the experience of being in the world is necessarily embodied. Within the system of individual ← → context relations, the individual is constituted by physiological and psychological subsystems, and, in turn, the context is comprised of human and nonhuman subsystems. Relations among individuals and contexts are, then, lived experiences of the body in the world. It is important to note that, "complex systems often unfold from, and are enfolded in, other complex systems" (Liben, 2008, p. 192), and this embeddedness is true of the individual (as a complex system unfolding from complex biological and social processes, and enfolded in

complex social systems) and of the contexts in which the individual participates (as complex systems unfolding from complex relations among individuals, physical spaces, rule structures, and socio-historical precedents, and enfolded in complex systems of media, education, neighborhoods, families, etc.).

Therefore, it is important for researchers to begin examining some of the characteristics of the sport context that may provide different experiences for youth, as well as the various characteristics of youth that may differentially relate to the athletic environment. Such work will lead toward a better understanding of the individual ← → context relations that develop between the youth and the sport environment by allowing for a more nuanced view of the complexity of these embodied systems (Agans, Safvenböm, Bowers, & Lerner, in preparation). Only through a better understanding of the dynamic system of relations and its development over the course of the individual's involvement with sport can we begin to describe, explain, and optimize the athletic experience for all youth.

In the study of athletic participation in particular, where the context itself is of substantive interest, it is all the more important to examine the characteristics of the context in relation to the characteristics of individual participants, rather than using participation only as a moderating variable. Not only is it necessary to individualize the person, but it is also necessary to individualize the context, making sure to consider factors such as resources (e.g., facility conditions, equipment, adult supervision), coaching style, competition level, team structure, and other characteristics. Much as it is already common practice to identify the sex, race/ethnicity, and SES of individual participants, identifying the

characteristics of the athletic context is a vital next step for the study of youth participation in sport.

A movement toward research focused on the developmental relations between the athlete and his or her sport environment would be an important shift in the field, especially for those researchers and policymakers whom Coakley (2011) terms "sport evangelists," due to their advocacy for sport and athletic participation and lack of recognition of the importance of individual differences in experience. While Coakley presents a call for more critical research and theory to counteract these voices promoting increased participation for all youth, adding the opposing viewpoint to the discussion (a task that has been taken up already by some, e.g., Hansen, Larson & Dworkin, 2003, etc.) may not be enough. Both sport evangelists and those more critical of athletic participation are taking a positivist approach to sport, one that supports the black-box view of sports discussed above. A paradigm shift to a relational developmental systems perspective, however, involving an emphasis on person-context fit (i.e., on adaptive person ← → context relations), allows for the idea that each person, and each sport context, is unique. The shift involves as well looking at the mutually influential relations among the athletes and their sport context, which will provide insight into the black box and enable research to move away from the "sport is good for everyone" versus "sport is harmful" dichotomy. What is more important than categorizing sport as good or bad is examining how individual youth can engage in a sport context that fosters their positive development, and how the

sport context can be used to foster positive development for a wider proportion of youth.

One way to begin moving from a variable-centered study involving sport and into an embodied relational developmental systems perspective on athletic participation is to begin examining some of the comparable or contrasting characteristics among the various types of sport. Within the literature, terms such as "team sport" are often used to limit or describe the types of athletes who participate in the study, but these terms are rarely defined or justified from a theoretical perspective (e.g., Bortoli, et al., 2011; Moran & Weiss, 2006; Reinboth & Duda, 2006; Reinboth, Duda, & Ntoumanis, 2004; Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2009). Other characteristics of the sport context that may influence the experience of the individual athlete include coaching style (e.g., mastery focused versus performance focused; Smith & Smoll, 1997), level of competitiveness (e.g., recreational, junior varsity, varsity, etc.), community location (e.g., school-based versus club-based contexts), energy expenditure during practice (e.g., extent of cardiovascular exercise; Leek, et al., 2011; Liu, et al., 2010), type of team structure (e.g., individual, team, etc.), evaluation type (e.g., judged, endurance, weight-based, or scoring; Fay, Economos, Lerner, Becker, & Sacheck, 2011), and type of game structure (e.g., invasion games such as football, soccer, or basketball versus non-invasion games such as volleyball, baseball, or tennis; Anderson, 2010), among others. Although there have been no studies of this variation *across* sports, many studies do rest on the underlying assumptions that different "types" (e.g., defined as involving one or more of the

above categories) of sport have different qualities, and therefore can be grouped together in a study.

The Present Research

In order to determine whether focusing in on the sport context to see differences among types of sports might provide insight into the nuances of the sport context, the present study analyzes the characteristic of team structure to see if it constitutes a useful differentiating factor among sports. The characteristic of team structure was chosen due to the fact that, although prior studies rarely provide details about the sport contexts in which their participants are embedded, team structure is the characteristic most often referenced (e.g., Larson, Hansen, & Moneta, 2006; Zarrett, et al., 2009). Based on the general categories often used in prior research (e.g., Bortoli, et al., 2011; Reinboth, Duda, & Ntoumanis, 2004), this study examines youth development in relation to three types of team structure: *individual sports*, defined as sports that feature an individual athlete competing alone in the moment of competition, although scores may be aggregated across team members to determine winners (e.g., martial arts, gymnastics, wrestling, equestrian sports, cross-country, track, swimming, diving, etc.), *integrative team sports*, defined as sports that involve multiple athletes working together in the moment of competition, with both teams on the playing surface at the same time (e.g., basketball, soccer, football, volleyball, tennis, hockey, etc.), and *dance*, defined as participation in dance classes or teams or participation in an activity that involves teams competing in sequence (e.g., dance class, dance team, cheerleading, show choir, color guard, etc.).

This method of categorizing athletic activities is only one of the many ways in which one could examine the potential distinctions among sports, and this method is used here not as a strict call for these categories to be employed in all future studies but as an example of the type of exploratory work into the characteristics of the athletic context that will need to be done before we can fully begin to examine the development of adaptive individual ← → context relations between young people and the sport environment from an embodiment perspective.

In exploring these categories of team structure, the purpose of this study is to 1. examine the patterns of youth athletic participation across the high school years; 2. investigate the relations (if any) among type of sport (operationalized as type of team structure) and the youth development outcomes of PYD, contribution to community, depression, and substance use; and 3. assess the patterns of stability or change in participation across the high school years and the relations (if any) among these patterns of participation and the youth development outcomes listed above. Although each sport context is unique, and each athlete has a unique lived experience of his or her sport context, there may be similarities across types of sport (operationalized in any number of ways, including type of team structure, as is done in this study), a categorization procedure that can be used by researchers to study the nuances of the context while still being able to generalize findings. Based on the relational developmental systems perspective presented above, this study addresses the hypothesis that different types of athletic activities, and different patterns of activity over time, may provide distinctive

opportunities for youth development, and these differences may vary by the sex of the participant.

The youth development constructs selected as outcome variables for this study reflect the diverse array of findings (discussed above) for the role of athletic participation in youth development. While many sport researchers have focused on positive outcomes (e.g., Zarrett, et al., 2009; Larson, Hansen, & Moneta, 2006; Bartko & Eccles, 2003), which are represented in the present study by PYD and contribution, other studies have focused on more negative outcomes (e.g., Barber, Eccles, & Stone, 2001; Larson, et al., 2006). Such outcomes are represented in the present study by depression and substance use. The present study thus examines a range of outcomes in relation to participation in various types of sports and diverse patterns of participation across high school.

Many researchers (e.g., Hedstrom & Gould, 2004) have pointed out that sport participation tends to decline in the teenage years. However, it is unknown whether youth are dropping out of athletics entirely or simply moving to a new sport, and what (if any) effects these changes in participation may have. The present study, therefore, assesses what patterns of athletic participation exist among youth across their high school years, and whether these patterns of participation remain stable. In addition, because the literature on OST activities suggests that different types of activities, and different combinations of activity types, are associated with different outcomes for youth (Zarrett, et al., 2009), this study also assesses both positive and negative outcomes in relation to patterns of athletic participation.

Cluster analysis was used to describe the patterns of participation present in Wave 6 (Grade 10), Wave 7 (Grade 11), and Wave 8 (Grade 12) of the 4-H Study of Positive Youth Development (e.g., Lerner, et al., 2005; J. Lerner, et al., in press), allowing for an assessment of the patterns of participation in sports of different team structures across the high school years, as well as of the patterns of developmental outcomes (Positive Youth Development, contribution to community, depression, and substance use) associated with participation in various combinations of athletic activities. This approach allowed for an examination of the patterns of participation in athletics present in the data set and their associations with psychosocial outcomes, as well as an assessment of the individual trajectories within these patterns across the high school years, and therefore provides a first step toward the more nuanced understanding of sport contexts that will be necessary before studies can take a truly embodied relational developmental systems approach to the study of athletic participation.

Method

Participants

Sample. The current study included a subset of participants in the 4-H Study of Positive Youth Development, a national, longitudinal study (Lerner, et al., 2005, Phelps, et al., 2009; J. Lerner, in press). Overall, across all eight waves of the study, 7,071 youth (59.9% female) in 42 states have been surveyed, along with 3,173 of their parents. Across waves, 3,234 of these students were tested two or more times. The present study utilized a subsample of youth from Wave 6 (Grade 10), Wave 7 (Grade 11), and Wave 8 (Grade 12), selected for their

participation in two or more waves across the three times of measurement. The exclusion of youth who only had data at one time of measurement reduced the sample size to 710 adolescents, but allowed for less potential error through multiple imputation.

Overall, in Grade 10, 1,882 youth were surveyed from 31 states along with 228 of their parents. These youth were 62.7% female, with a mean age of 15.86 years (SD= 1.04). Self-reported race for these youth was European American, 77.7%; Latino/a, 7.3%; African American, 6.2%; Multiracial, 3.2%; Asian American, 1.7 %; and American Indian, 0.9%. Of these youth, 578 also participated in Grade 11 and/or Grade 12, and were therefore included in the present study.

Overall, in Grade 11, 994 youth were surveyed from 30 states along with 91 of their parents. These youth were 67.3% female, with a mean age of 16.88 years (SD= 0.95). Self-reported race for these youth was European American, 82.7%; Latino/a, 3.5%; African American, 5.3%; Asian American, 2.9%; Multiracial, 2.4%; and American Indian, 1.5%. Of these youth, 577 also participated in Grade 10 and/or Grade 12, and were therefore included in the present study.

Overall, in Grade 12, 721 youth were surveyed from 34 states along with 46 of their parents. These youth were 68.0% female, with a mean age of 17.71 years (SD= 0.96). Self-reported race for these youth was European American, 79.1%; Latino/a, 5.8%; African American, 4.2%; Asian American, 4.0 %; Multiracial, 2.8%; and American Indian, 1.4%. Of these youth, 452 also

participated in Grade 10 and/or Grade 11, and were therefore included in the present study.

The current sample of 710 youth who completed the survey at two or more times of measurement was 68.7% female, with a mean age in Grade 10 of 15.8 years (SD = 0.98). Self-reported race for these youth was European American, 84.1%; Latino/a, 4.5%; African American, 4.2%; Asian American, 2.7 %; American Indian, 1.3%; and Multiracial, 2.4%.

Based on research documenting the link between maternal education and youth educational and career attainment (e.g., Hauser & Featherman, 1976), maternal education was used as an indicator of participants' socioeconomic background/status (SES). The items pertinent to maternal education asked about mother's/guardian's (and both if the participating guardian is not the child's mother) education level. There are nine categories, from 8th grade or less to doctoral degree, with higher scores indicating higher levels (i.e., more years) of formal education. The variable was recoded to reflect the number of years of education, and ranges from 8 to 20. In the current subsample of the 4-H Study dataset, the mean number of years of maternal education was 14.74 (SD = 2.23).

Not all youth participated in all waves due to planned missingness (i.e., new participants were added at each wave) as well as due to attrition. Two strategies were employed to account for missing data: only youth who participated in two or more waves were included in analyses, and the Amelia II package for R statistical software was used to impute five data sets. Five imputed data sets have been shown to be sufficient to account for missing data

(Asparouhov & Muthén, 2010), although if loss of statistical power is a concern, which it was not in this study, Graham, Olchowski, and Gilreath (2007) recommend 20 imputations. In accordance with Rubin's rules (1987) analyses were performed by pooling across data sets using SAS 9.2 software.

Procedure

For the first three waves of data collection of the 4-H Study of Positive Youth Development, teachers or program staff gave each child an envelope to take home to the parent or guardian. The envelope contained a letter explaining the study, two consent forms (one that was returned to the school and one that could be kept for the records of the parent or guardian), a parent questionnaire, and a self-addressed stamped manila envelope for returning the parent questionnaire and consent form. Data collection was conducted by trained study staff or assistants hired for more distant locations. A protocol was used to ensure that data collection was administered uniformly and to ensure the return of all study materials. The procedure began with reading the instructions for the student questionnaire to the youth. Participants were instructed that they could skip any questions they did not wish to answer. A two-hour block of time was allotted for data collection, which included one or two short rest periods. During Waves 2 and 3, students who were unable to be surveyed at their school or 4-H site, in that they were either absent during the day of testing or the school superintendent did not allow testing to occur in the school, received a survey in the mail.

For Waves 4, 5, 6, and 7 youth were surveyed in their schools or youth programs following the same procedure as in the first three waves. Youth who

were absent on the day of the survey or were from schools who did not allow on-site testing were contacted by e-mail, mail, or phone, and were asked to complete and return the survey to us. Beginning in Wave 5, youth could go online to complete the survey. Youth tested at 4-H clubs were either tested with the paper survey or used club computers to complete the survey online.

Measures

The current study used an assessment of athletic participation as well as indices of several individual characteristics including positive youth development (PYD), contribution to community, depression, and substance use. Maternal education was used as an indicator of socioeconomic status.

Athletic Activity Participation. Participation in different types of athletic activities was operationalized in several ways. In the 4-H study, participants were asked to indicate how often they participated in various athletic activities: community sports or physical activities outside of school, dance lessons or groups, gymnastics, martial arts, skating, school sports teams, or other sports. Participants were also given the opportunity to write in the sports teams they participated in out of school, in school, and any other outside of school athletic activities. Intensity of participation was measured by asking youth how often they participated in each of the programs, from "never," "once a month or less," "a couple of times a month or more," "once a week," "a few times a week," to "every day." For this study, to be included as an athlete in any of these categories youth needed to participate at least "a couple of times a month or more."

Participants who did not respond to the athletic participation questions were considered to have missing data for athletic participation.

New variables were then created to indicate if youth were participating in three categories of sports; individual, team, and dance. These categories were determined based on a general understanding of team structure within the various sports in the data set, working at the level of detail allowed by the data. For example, due to the presence of a general "dance" item in the data set, the dance category could not be refined to separate dance classes from dance teams or performing groups. As described above, the three categories were defined as follows: *individual sports* (all sports that feature an individual athlete competing alone in the moment of competition, although scores may be aggregated across team members to determine winners, e.g., skating, gymnastics, golf, swimming, diving, wrestling, equestrian sports, motocross, running, snowboarding, skateboarding, bowling, powerlifting, etc.), *integrative team sports* (all sports that feature multiple athletes working together in the moment of competition, with multiple teams on the playing surface at the same time, e.g., basketball, soccer, volleyball, football, lacrosse, (field) hockey, tennis, rowing, tennis, sailing, curling, paintball, airsoft, etc.), and *dance* (all youth who indicated that they participate in "dance" e.g., ballet, tap, jazz, etc., as well as all youth who indicated participation in an activity that involves teams competing or performing in sequence, e.g., cheerleading, color guard, drill team, synchronized swimming, show choir, etc.). In addition, because "sport" was defined as a competitive movement activity, in which contestants are ranked, earn scores, or are judged

based on their performance, all other movement activities (e.g., jogging, hiking, working out, yoga, hunting, fishing, 4-wheelers, etc.) were not included in the analyses of sport participation. Scores on these three dichotomous participation variables (individual sport, integrative team sport, and dance) relied on responses to both the quantitative and the qualitative activity participation items. Coders (N = 2) achieved a good level of inter-rater reliability ($\kappa = 0.97$).

Positive Youth Development (PYD). A PYD score (ranging from 0 to 10) for each participant was computed at each time of testing as the mean of the scores for each of the Five Cs (Competence, Confidence, Connection, Character, and Caring, also ranging from 0-10), provided that at least three of the Cs had valid values (in past research, a range of 0 to 100 was used; Phelps, et al., 2009). Higher scores represent higher levels of the Five Cs and therefore, higher levels of PYD. In the 4-H data set, the Cronbach's alpha for PYD in Grades 10, 11, and 12 ranges from .94 to .95. The Five Cs comprising the PYD construct contain a total of 78 items, and are operationalized as follows:

Competence is a positive view of one's action in domain-specific areas including the social and academic domains (11 items). In the 4-H data set, the Cronbach's alpha for Competence in Grades 10, 11, and 12 ranges from .83 to .84.

Confidence is an internal sense of overall positive self-worth, identity, and feelings about one's physical appearance (16 items). In the 4-H data set, the Cronbach's alpha for Confidence in Grades 10, 11, and 12 ranges from .92 to .95.

Character involves respect for societal and cultural rules, possession of standards for correct behaviors, a sense of right and wrong, and integrity (20 items). In the 4-H data set, the Cronbach's alpha for Character in Grades 10, 11, and 12 ranges from .89 to .90.

Connection involves a positive bond with people and institutions that are reflected in healthy, bidirectional exchanges between the individual and peers, family, school, and community in which both parties contribute to the relationship (22 items). In the 4-H data set, the Cronbach's alpha for Connection in Grades 10, 11, and 12 ranges from .89 to .90.

Caring is the degree of sympathy and empathy, i.e., the degree to which participants feel sorry for the distress of others (9 items). In the 4-H data set, the Cronbach's alpha for Caring in Grades 10, 11, and 12 ranges from .81 to .84.

Full details about these measures of the 5 Cs of PYD, as well as details about their construction, and their validity and reliability can be found in Lerner, et al. (2005) and Bowers, et al. (2010).

Contribution. Youth responded to 12 items, which were weighted and summed to create two subscales, action and ideology. The Contribution items are derived from existing instruments with known psychometric properties and used in large-scales studies of adolescents, i.e., the Profiles of Student Life-Attitudes and Behaviors (PSL-AB; Benson, Leffert, Scales, & Blyth, 1998) survey and the Teen Assessment Project (TAP; Small, & Rodgers, 1995) survey question bank. Items from the leadership, service, and helping scales measured the frequency of time youth spent helping others (e.g., friends or neighbors), providing service to

their communities, and acting in leadership roles. Together, the leadership, service, and helping subsets comprise the action component of Contribution. The ideology scale measured the extent to which Contribution was an important facet of the participants' identities (e.g., 'It is important to me to contribute to my community and society'). The action and ideology components are weighted equally to calculate the Contribution scores. As with the PYD scores, in this study, the Contribution scores range from 0 to 10 (in past research, a range of 0–100 was used; Jeličič, Bobek, Phelps, Lerner, & Lerner, 2007). In the 4-H data set, the Cronbach's alpha for Contribution in Grades 10, 11, and 12 ranges from .79 to .81.

Depression. The Center for Epidemiological Studies Depression (CES-D) scale is a 20-item self-report measure of depressive symptomatology (Radloff, 1977). Depression was conceptualized as feelings of frustration, sadness, demoralization, loneliness, and pessimism about the future (Radloff, 1977). Example items include "During the past week I was bothered by things that usually don't bother me" and "During the past week I felt sad." The response format ranges from 0 = *rarely or none of the time* to 3 = *most or all of the time* to indicate how frequently the respondent experienced symptoms during the past week. Items are summed for a total score, with a maximum score of 60, and higher scores are indicative of higher depressive symptomatology – greater frequency and number of symptoms of depression. The CES-D has an internal consistency of .85 for the general population and .90 for psychiatric patients (Radloff, 1977). The scale has been reported to also have good validity (i.e.,

CES-D correlates significantly with other measures of mood states such as Profile of Mood States-Short Form and Bradburn Positive and Negative Affect Scale) (Conerly, Baker, Dye, Douglas & Zabora, 2002; Radloff, 1977). The measure has been used extensively with adolescents and such studies have established this scale's validity and reliability with populations in high school and junior high school (Radloff, 1977). In the 4-H data set, the Cronbach's alpha for the CES-D in Grades 10, 11, and 12 ranges from .88 to .89.

Substance Use. Substance use was calculated as the sum of seven items asking participants if they had ever, in the last 12 months, used cigarettes; chewing tobacco or snuff; more than a few sips of alcohol; glue or other gasses; marijuana or hashish; other drugs such as ecstasy, heroin, or cocaine; and steroid pills or shots. Response options were *never, once or twice, occasionally*, and *regularly*, and all items were summed to calculate total substance use. In the 4-H data set, the Cronbach's alpha for this substance use scale in Grades 10, 11, and 12 ranges from .75 to .81.

Results

The present study used cluster analysis to identify groups of athletes in Grade 10, 11, and 12 of the 4-H Study of Positive Youth Development, and used regression analysis to assess differences among clusters in positive youth development (PYD), contribution to community, substance use, and depression. I tested the hypothesis that different profiles of participation in the various types of athletic activities may be associated with different outcomes for both males and females in order to determine whether team structure constitutes a useful

differentiating factor among sports. Regression analyses used SAS 9.2 statistical software to assess results across five imputed datasets, and results were analyzed separately for males and females.

Cluster Analysis

Prior to addressing the research question, a hierarchical cluster analysis was performed using Ward's (1963) method and squared Euclidian distances as a similarity measure between cases. Cluster analyses were performed separately for each of the five imputed data sets using SPSS 19, and were found to be consistent across imputations. This procedure was used to describe clusters present in the data set for profiles of participation in the three types of athletic activities examined in this study: *individual sports* (youth compete alone but scores may contribute to a team); *integrative team sports* (youth compete as a team, working directly against opponents); *dance* (competition is in sequence and may be individual or team-based). Agglomeration results indicated a five cluster solution for athletic participation at each of the three waves for both males and females, differentiated by the type of sports played by the youth in each cluster. As shown in Table 1 (page 48), these five clusters are *no participation* (characterized by youth who do not participate in sport), *individual only* (characterized by youth who participate only in individual sports), *team only* (characterized by youth who participate only in team sports), *team and individual* (characterized by youth who participate in both team sports and individual sports), and *dance* (characterized by youth who participate in dance, who may or may not also participate in other activities).

In order to group youth longitudinally, in addition to grouping them within time in the clusters, youth were assigned to trajectories. Logically, there are six inclusive trajectories of participation that could occur across these clusters, and indeed I was able to place all youth within one of these trajectories. These trajectories are: *no participation* (characterized by youth who did not participate in athletics across the three years of the study), *joiner* (characterized by youth who were in the *no participation* cluster in Grade 10, but were in one of the participation clusters in Grade 11 and/or 12), *participant* (characterized by youth who were in the same participation cluster for all three waves of data collection), *changer* (characterized by youth who were in one of the participation clusters at each wave, but who changed clusters across the study), *drop out* (characterized by youth who were in a participation cluster in Grade 10, but were in the *no participation* cluster in Grade 11 and/or 12), and *inconsistent* (characterized by youth who were in a participation cluster only in Grade 11, or who were in the *no participation* cluster only in Grade 11). Table 2 (page 49) illustrates the cluster and trajectory groupings, including the percentages of males and females in each cluster and trajectory.

Athletic Participation as a Predictor of PYD, Contribution, Depression, and Substance Use

Data analysis was performed using SAS 9.2 software to conduct an ordinary least squares regression analysis across the imputed data sets. Patterns of results illustrating differences in PYD, contribution, depression and substance use by cluster and by trajectory were analyzed separately for males and females,

due to the sex-segregation of organized athletic activities. Table 3 (page 50) shows the correlations and significance tests for female participants, and Table 4 (page 51) shows the correlations and significance for male participants, for analyses both by cluster and by trajectory.

Female athletic participants generally showed more favorable outcomes than non-participants, except on substance use where the data showed no differences among any of the groupings (see Table 2, page 49). In the cluster model, female youth in the *team and individual* cluster had higher Contribution and PYD than females in the *no participation* cluster across Grades 10, 11, and 12. Female participants in the *dance* cluster showed higher PYD scores in Grade 10 and higher contribution scores in Grade 12 than females in the *no participation* cluster, and female participants in the *team only*, or *individual sport only* clusters also had higher contribution scores in Grade 12 than females in the *no participation* cluster. For depression all female participants who participated in sport, but not youth who participated in dance, had lower depression scores in Grade 11 than females in the *no participation* cluster.

In the trajectory model, female participants in the *participant* trajectory had higher PYD in Grade 10 and higher contribution in Grade 12 than youth in the *no participation* trajectory. In addition, female participants in the *changer* trajectory also had higher PYD in Grade 10 than females in the *no participation* trajectory, but they were no different from females in the *no participation* trajectory at all other time points.

For male participants, fewer significant results emerged with most of the differences among athletic participants and non-participants appearing in Grade 10 only. In Grade 10, male participants in the *team and individual* cluster reported higher PYD and contribution and lower depression than males in the *no participation* cluster, and male participants in the *dance* cluster also reported higher PYD than males in the *no participation* cluster. In addition, male participants in the *individual only* cluster reported higher levels of substance use than males in the *no participation* cluster both in Grade 10 and in Grade 11. In the trajectory model, there was only one significant difference for males; youth in the *joiner* trajectory had significantly lower PYD than male youth in the *no participation* trajectory.

Discussion

Prior studies have indicated that different out-of-school time (OST) activities provide different opportunities for youth development (e.g., Larson, Hansen, & Moneta, 2006; Zarrett, et al., 2009), however research has yet to fully examine these differences among various types of athletic activities. Therefore, the present study examined the patterns of athletic participation across three years of high school through a cluster analysis of participation in activities with different types of team structure and a series of regression analyses. Results supported the hypothesis that differences in developmental outcomes (PYD, contribution, depression, and substance use) may be associated with clusters of athletes organized by team structure and pattern of participation, and that these differences vary by sex. Through analyses of differences in developmental

outcomes across youth participating in different types of activities, the present study provides initial understanding of the characteristics of the high school sport context, which is an important first step in understanding the dynamic system of relations among individuals and athletic contexts and the development of this system of relations over the course of the individual's development.

The results of the present study differed considerably by sex, a finding that is unsurprising given that organized sports are traditionally a sex-segregated environment and therefore even for the same type of sport, the female and male teams may differ considerably across a wide range of factors (e.g., team culture, coaching style, etc.). For females, simultaneous participation in both team and individual sports was associated with higher PYD and contribution when compared with non-participation across all three grades. However, the relationships among participation clusters and developmental outcomes for females in other types of athletic participation varied across the three time points of the study, with athletic participants generally showing either more favorable outcomes or no difference from non-participants. For males, simultaneous participation in both team and individual sports was associated with higher PYD and contribution and also with lower depression when compared with non-participation, but only in Grade 10. Males who participated in dance in Grade 10 also had higher PYD than non-participating males, but in Grades 11 and 12 no differences were found among any of the male clusters for PYD, contribution, or depression.

These findings provide support for the hypothesis that different types of athletic activities may provide distinctive opportunities for youth development, and that these differences may vary by the sex of the participant. Furthermore, the results point to the possibility that variety in athletic experiences (i.e., simultaneous participation in both individual sports and team sports) may be an important unexplored factor for both male and female athletes. This conclusion is in line with previous findings that the broader OST context plays an important role in youth development (Zarrett, et al., 2009) and with the relational developmental systems concept of mutually influential relations among individuals and their multiplicity of contexts. Furthermore, it illustrates the importance of a more comprehensive approach to the study of OST activity participation, due to the interconnected nature of youth experiences of a variety of activity contexts both within sport and within the wider range of OST activities.

In addition, the finding that youth who participated in individual sports and team sports in combination, irrespective of sex, had more positive outcomes across three years of high school points to an interesting theoretical omission in the literature on athletic participation. Athletics (generally operationalized as team sports) is often promoted as a context in which youth learn teamwork and cooperation (e.g., Sandford, Duncombe, & Armour, 2008). However in the present study youth were more likely to have favorable outcomes compared to non-participants when they participated in individual sports in addition to team sports, whereas those participating only in team sports were more often statistically indistinguishable from youth who did not participate in sport at all

(especially for males). These results may be linked to the importance of variety in athletic experiences discussed above, but could also be associated with issues of quantity of participation or increased opportunities for positive movement experiences across contexts.

Furthermore, no differences were found among female participants and non-participants for substance use at any time point. Although prior research has indicated higher levels of alcohol use among athletes (Barber, et al., 2001), the present study found higher substance use exclusively among male athletes who participated only in individual sports, and this finding only in Grades 10 and 11. This difference in results across studies may be due to differences in sample or cohort (i.e., because youth engage in substance use differently across cohorts, see Johnston, O'Malley, Bachman, & Schulenberg, 2012). However, it is also likely that different operationalizations of substance use (e.g., alcohol use only, versus the inclusion of a variety of additional substances as was done in this study) may have different associations with athletic participation. Further research is needed to examine the nuances of these relationships among various types of athletic participation and different aspects of substance use for both males and females.

When youth development outcomes were analyzed in relation to longitudinal patterns of participation, females who participated in the same type of sport across the three years studied showed higher levels of PYD in Grade 10 and higher levels of contribution in Grade 12 when compared to non-participating females. Females who participated in athletics across the three years of the study but who changed the type of sport in which they were involved also had higher

PYD in Grade 10 than non-participating youth, but showed no differences from non-participants in later years. These results may indicate a selection effect in which female athletes continue to participate in sports across their high school years, however, further research is needed to determine the developmental process involved in continuous or discontinuous patterns of participation and to assess the potential endogenous factors.

For males, only one difference was observed when developmental outcomes were assessed in relation to longitudinal patterns of participation. Males who did not participate in athletics in Grade 10 but who went on to join a sport in Grade 11 or 12 had lower PYD in Grade 10 than male youth who never participated in sport. This finding is intriguing, however, there are many factors related to athletic participation and non-participation that were not measured in this study (e.g., athletic ability, access to organized sports, GPA cut-offs for high school participation, etc.) all of which could be related to both PYD and changes in participation status.

In addition, in schools where athletic participation is a valued status attribute for males, non-participation may have a detrimental effect on youth for whom this aspect of their identity is important (e.g., see Barber, Eccles, & Stone, 2001). Self-perception has been shown to be more heavily impacted by highly valued competencies (Harter, 1999), such that youth who value athletic competence but who are not skilled athletes may experience decreases in positive self-perceptions. Furthermore, expectancy value theory posits that youth who perceive athletic participation to be a highly valued option, but who have little

expectation of success in the athletic domain, may experience anxiety and fear of failure that could prevent them from working to achieve their desired goal (Wigfield & Eccles, 2000). Future studies should therefore incorporate indicators of athletic identity, or the importance of athletic participation, in research examining longitudinal patterns of participation, and distinguish among the ways in which beliefs about the importance of athleticism intersect with participation and self-perceived skill levels.

Overall, the differences in outcomes observed across both clusters and trajectories of participation among high school students illustrate the importance of examining more of the characteristics of athletic participation contexts in order to better understand the experience of youth participants. The findings of this study point to the variety of opportunities and life lessons that youth gain through their participation, and to the interactions of these contexts with the different individuals who choose to participate in these types of activities, and provide evidence for increasing the level of detail at which out-of-school time programs and contexts are studied. In order to better understand why some youth participate in athletic activities and others choose a more sedentary life style, it will not be enough to increase time spent in physical education classes. Instead, research examining the characteristics of different types of sport contexts is needed to expand our understanding of youth participation in sport.

In addition, as illustrated by the present findings, it is important that future studies take a person-centered approach to the study of athletic participation, and with it a more careful focus on the contexts in which individuals participate. The

integrated relations among individuals and their contexts that form the fundamental unit of analysis in human development rely on the unique characteristics of both individual and context (Overton, 2010), and as such, both aspects should be included in studies of development. Although the individuality of the person is widely recognized, the context is often reduced to a general category (e.g., sports, performing arts, or religious youth group) with little known about its characteristics. The present study demonstrates that there are important further distinctions to be made within categories of activities in order to understand the development that takes place in these contexts.

Limitations

The small and homogeneous sample used in this study provides limitations in the generalizability of the findings, as the 4-H Study of PYD does not contain the ethnic and socioeconomic diversity needed to understand the potential differences in both patterns of participation in athletics and the effects of such patterns among youth of a wide variety of status attributes. In addition, the present study used data only from youth who completed the survey at two or more time points, and this selective sample prevents generalizations from being made to the type of youth who did not elect to take the survey a second time, who may also have different patterns of participation if this tendency toward attrition carries over to the athletic domain as well. Future longitudinal studies of athletic participation should attempt to sample a wider diversity of participants, and should employ alternative methods of data collection to assess athletic

participation levels (e.g., coach or peer report) to control for attrition from the study.

The use of cluster analysis has been criticized for failing to provide non-arbitrary groups (Bauer & Shanahan, 2007). However, the present study utilized this technique not as an attempt to define or locate true groups in the population, but to describe the groups of youth present in the data set. Therefore, although cluster analysis is not a procedure without flaws, the present study does not attempt to draw conclusions about the clusters as reified groups. Future studies, however, should consider alternative techniques such as latent profile analysis (see Bauer & Shanahan, 2007) for classification.

A further limitation of the present study is that although all youth are embedded in multiple contexts, the analyses featured here examined only their participation in athletic activities. As discussed by Zarrett and colleagues (2009), the combination of OST activities in which youth participate also impacts developmental outcomes, and future studies should examine more thoroughly the full assortment of programs in which youth are engaged. Relatedly, although an individual's experience of his or her athletic context is shaped by a combination of factors, the present study examined only team structure. Aspects of the sport context such as coaching style, level of play, peer relations among teammates, community versus school-based teams, the status of a given sport within the school culture, whether the sport is aesthetically judged, etc. should all be examined, and, ideally, integrated into studies that allow researchers to better understand the athletic context as it is experienced by youth. Data assessing more

of these elements of the context would constitute a better look into the "black box" of the program, and, as such, would allow a more comprehensive analysis of the specific activity context in which youth experience their participation in athletics. These analyses should additionally be performed involving cross-group comparisons, above and beyond comparisons with non-participating peers.

Conclusions

The present study provides a necessary first step in the direction of better understanding the embodied lived experience of individual participation in athletic contexts. However, studies incorporating qualitative analyses and mixed methodologies will be required to gain a clearer understanding of these issues. Future research should continue to pursue the study of athletic participation through the embodied relational developmental systems lens used in this study, and should expand these techniques to gain a more nuanced perspective on the relations among the characteristics of participants and the characteristics of their contexts.

The findings of this study illustrate the importance of examining athletic participation on a more nuanced level than the overarching category of "sport" allows. The finding that male and female youth participating in different types of activities, in diverse patterns over time, show different developmental outcomes across three years of high school provides evidence that the characteristics of various athletic contexts provide distinctive opportunities for youth. As such, these characteristics of sport contexts, and the lived experience of participants, constitute important foci for future research.

In sum, the present study moves toward an embodied relational developmental systems perspective on youth participation in sport, in which researchers can promote an understanding of how different athletic contexts provide unique developmental opportunities, and the ways in which individual youth may benefit from the lived experience of participation in different sport contexts. Through an understanding of the individual ← → context relations that make up the relational developmental system, research can promote healthy active lifestyles for all youth without taking the sport evangelists' one-size-fits-all approach. Instead, the characteristics of the individual and the characteristics of the sport context, once they are better understood, can be aligned to optimize the experience of athletic participation and increase the probability that youth will find a context in which they love to move and which supports their positive development.

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Table 1. Frequency ranges across imputations for cluster profiles in Grades 10, 11, and 12.

Grade 12 **Frequency ranges**	**Team**	**Individual**	**Dance**	**Total**
Dance	68 - 74	61 - 77	113 - 123	113 - 123
No participation	0	0	0	205 - 221
Team only	128 - 141	0	0	128 - 141
Team and individual	134 - 153	134 - 153	0	134 - 153
Individual only	0	93 - 109	0	93 - 109

Grade 11 **Frequency ranges**	**Team**	**Individual**	**Dance**	**Total**
Dance	73 - 94	70 - 93	148 - 171	148 - 171
No participation	0	0	0	173 - 189
Team only	122 - 134	0	0	122 - 134
Team and individual	149 - 162	149 - 162	0	149 - 162
Individual only	0	84 - 96	0	84 - 96

Grade 10 **Frequency ranges**	**Team**	**Individual**	**Dance**	**Total**
Dance	79 - 91	71 - 101	127 - 152	127 - 152
No participation	0	0	0	149 - 162
Team only	141 - 149	0	0	141 - 149
Team and individual	144 - 172	144 - 172	0	144 - 172
Individual only	0	102 - 111	0	102 - 111

Table 2. Cluster and trajectory membership across all three times of measurement. Percentages of participation by cluster show the range of participation across the three time points.

Participation Clusters	Participation Trajectories
No Participation (*N* male = 18% – 25%) (*N* female = 24% – 38%)	No Participation: in the No Participation cluster across all 3 waves (*N* male = 6%) (*N* female = 12%)
Individual Only (*N* male = 15% - 17%) (*N* female = 12% – 15%)	Joiner: in the "No Participation" cluster in Wave 6 only (*N* male = 8%) (*N* female = 9%)
Team Sport Only (*N* male = 22% – 23%) (*N* female = 16% – 19%)	Participant: in the same participation cluster across all 3 waves (*N* male = 22%) (*N* female = 19%)
Team and Individual (*N* male = 32% – 24%) (*N* female = 18% – 19%)	Changer: in various participation clusters across waves (*N* male = 35%) (*N* female = 29%)
Dance (*N* male = 11% – 14%) (*N* female = 19% – 25%)	Drop-out: participated in Wave 6, No Participation later (*N* male = 15%) (*N* female = 17%)
	Inconsistent: participation and cluster membership varied (*N* male = 13%) (*N* female = 14%)

Table 3. Cluster and trajectory differences from No Participation groups for females. Clusters and trajectories not listed were not found to be significantly different from No Participation groups.

	Female cluster differences from No Participation Cluster	**Female trajectory differences from No Participation Trajectory**
Grade 10		
PYD	Dance (b = 3.80, p < .01) Team & Individual (b = 5.50, p < .001)	Participants (b = 4.40, p < .05) Changers (b = 3.76, p < .05)
Contribution	Team & Individual (b = 5.78, p < .05)	No significant differences
Depression	No significant differences	No significant differences
Substance Use	No significant differences	No significant differences
Grade 11		
PYD	Team & Individual (b = 4.13, p <.05)	No significant differences
Contribution	Team & Individual (b = 6.46, p < .05)	No significant differences
Depression	Team Only (b = -4.06, p < .05) Team & Individual (b = -3.70, p < .05) Individual Only (b = -3.36, p < .05)	No significant differences
Substance Use	No significant differences	No significant differences
Grade 12		
PYD	Team & Individual (b = 5.40, p < .01)	
Contribution	Dance (b = 7.02, p < .05) Team Only (b = 6.48, p < .05) Team & Individual (b = 10.59, p < .001) Individual Only (b = 7.56, p < .05)	Participants (b = 9.12, p < .05)
Depression	No significant differences	No significant differences
Substance Use	No significant differences	No significant differences

Table 4. Cluster and trajectory differences from No Participation groups for males. Clusters and trajectories not listed were not found to be significantly different from No Participation groups.

	Male cluster differences from No Participation Cluster	**Male trajectory differences from No Participation Trajectory**
Grade 10		
PYD	Dance (b = 6.71, p < .05) Team & Individual (b = 7.04, p < .05)	Joiners (b = -11.00, p < .05)
Contribution	Team & Individual (b = 10.55, p < .05)	No significant differences
Depression	Team & Individual (b = -1.99, p <.05)	No significant differences
Substance Use	Individual Only (b = 1.56, p < .05)	No significant differences
Grade 11		
PYD	No significant differences	No significant differences
Contribution	No significant differences	No significant differences
Depression	No significant differences	No significant differences
Substance Use	Individual Only (b = 1.53, p < .05)	No significant differences
Grade 12		
PYD	No significant differences	No significant differences
Contribution	No significant differences	No significant differences
Depression	No significant differences	No significant differences
Substance Use	No significant differences	No significant differences