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Involvement in Physical Activity: Adolescents' Perceptions of Outcomes

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Abstract

A total of 1,096 adolescents participated in 123 focus groups regarding the perceived outcomes of their involvement in sports and physical activity (PA). The groups, segmented by grade level, sex, and school types, were conducted in both public and private high schools in Montreal, Quebec. We sought to understand, through the participants' own words, their perception of the outcome matrix of involvement in sports and PA. Focus group questions emphasized changes that adolescents associated with such engagement. In particular, participants were asked how sports and PA might influence behaviors, emotional states, personal characteristics, and other outcomes. Twelve themes were identified in the responses: Positive Health and Physical Changes (18.5%), Activity-Related Positive Emotions (15.6%), and Personal Learning (11.3%) were most prevalent in the discussions. A cluster of deeper personal changes thematically described as Self-Identity, Autonomy, and Positive Character Development accounted for another 16.5% of the responses. Relatively few commentaries emphasized negative effects (7.1%). Converting the proportions of qualitative data into a quantitative index allowed us to analyze potential differences in emphasis according to sex, age, and school type. Though a few significant findings emerged, the larger pattern was of a uniform perceptual map across the variables for this adolescent sample. Implications drawn from this investigation highlight the need to clearly articulate concrete pathways to positive nonphysical changes (e.g., mood states, autonomy, positive character development) from engagements in sports and PA.

Keywords

adolescents, physical activity, perceptions, attitudes, theory of reasoned action, theory of planned behavior, focus groups

A broad interest in appreciating how adolescents understand the likely impacts of sports and physical activities (PAs) on their lives gave impetus to this investigation. Given that adolescents would generally recognize exercise and sports as bringing about certain kinds of personal changes, we wanted to understand their perceptions of the effects of sports and PA participation. The reason behind such interest was to gain a better appreciation of the perceived positive outcomes of PA as these are believed to influence attitude and ultimately intention to engage in this health-promoting behavior.

New American and Canadian guidelines suggest that youth aged 5 to 17 should accumulate at least 60 min of moderate-to-vigorous PA daily to reap health benefits (Centers for Disease Control and Prevention, 2011; Statistics Canada, 2011). This amount can be reached through lifestyle or leisure activities, though both the Centers for Disease Control and Prevention (2011) and the Canadian Physical Activity Guidelines (Statistics Canada, 2011) advised that children and adolescents engage in vigorous-intensity aerobic activity for 60 min on at least 3 days per week. Data from the 2007-2009 Canadian Health Measures Survey indicated that only 7% of Canadian youth attain this level of activity (Colley et al., 2011). Comparably, research conducted in 2003-2004 demonstrated that 92% of American adolescents do not participate in PA to the extent recommended (Troiano et al., 2008).

Compounding these disappointing indicators of adolescent involvement in PA for population health is that levels of participation have been shown to decline with age (Booth et al., 2006). The low activity participation rates among adolescents coupled with the numerous identified consequences of sedentary lifestyles represent significant societal concerns. Failure to meet recommended levels of PA often results in overweight and obesity (Sulemana, Smolensky, & Lai, 2006). The percentage of children aged 6 to 11 years in the United States who are obese increased from 7% in 1980 to nearly 20% in 2008. Similarly, the percentage of adolescents aged 12 to 19 years who are obese increased from 5% to 18% over the same period (http://www.cdc.gov/healthyyouth/obesity/facts.htm). In Canada, more than 26% of children and youth (1.6 million children) are considered overweight

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or obese (http://www.childhoodobesityfoundation.ca/). The most significant long-term consequence of obesity in childhood is adult obesity and its related comorbidities (Biro & Wien, 2010). Indeed, research suggests that preadult involvement in organized sports increases the likelihood for a physically active lifestyle into adulthood (Kjonniksen, Anderssen, & Wold, 2009).

A number of theoretical models have guided research on the topic of adolescent participation in PAs and sports. In this research, we relied on postulates from the theories of reasoned action (TRA; Ajzen, 1991; Ajzen & Fishbein, 1980) and planned behavior (TPB; Ajzen, 1991) to appreciate how adolescents' perceptions about PA might influence their attitude toward the behavior and consequently their intention to exercise. In particular, TRA hypothesizes that an individual's intention to engage in a behavior, which is under his or her volitional control, is a key predictor of performing that behavior (Ajzen & Fishbein, 1980; Downs & Hausenblas, 2005; Sheppard, Hartwick, & Warshaw, 1988). More to the point of this investigation, intentions to engage in a behavior are seen to derive from individuals' attitudes toward the behavior—personal component—as well as from subjective norms—social-normative component. Attitudes are often described as derivatives of positive or negative evaluations of performing a behavior while subjective norms are beliefs concerning what others will think about performance of that behavior (Ajzen & Fishbein, 1980; Sheeran, Norman, & Orbell, 1999). Perceived behavioral control, a variable akin to self-efficacy (Bandura, 1999), was later added to TRA in an effort to map the entire sequence of action for behavior that is not entirely under one's control. The resultant TPB (Ajzen, 1991) has been used extensively in research that seeks to predict and explain adolescents' engagement in PA (Bélanger et al., 2011; Duncan, Rivis, & Jordan, 2012; Hamilton & White, 2008; Plotnikoff et al., 2011).

Though the significance of all TRA/TPB constructs has been demonstrated in relation to predicting exercise behavior (Godin & Kok, 1996), the current study focuses on adolescents' behavioral beliefs because attitude has been found to have the most pervasive influence on intention and ultimately on performance of a given behavior (Downs & Hausenblas, 2005; Hagger, Chatzisarantis, & Biddle, 2002),

The extensive literature on factors influencing adolescents' participation in PA identifies a number of factors, both positive and negative, correlated with attitude toward the behavior. These include the motivational variables associated with self-determination theory (Deci & Ryan, 2000, 2002), which suggest that satisfying the basic needs of autonomy, relatedness, and competence is closely related to increased satisfaction with the activity (Jõesaar & Hein, 2011; Weiss & Williams, 2004) and consequently with continued performance. The range of variables affecting PA participation extends from positive body image and the negative impact of barriers that detract from engagement (Biddle, Atkin, Cavill, & Foster, 2011) to psychosocial variables such as self-efficacy and goal orientation (Sallis, Prochaska, Taylor, Hill, & Geraci, 1999), perceived physical competence, and social support (Graham, Schneider, & Dickerson, 2011). Sociodemographic factors (Toftegaard-Støckel, Nielsen, Ibsen, & Andersen, 2011), including gender and parental education as well as physical education/school sports participation (Van der Horst, Paw, Twisk, & Mechelen, 2007) and the desire for fun and enjoyment (Weiss & Williams, 2004), are also relevant variables related to adolescents' participation in PA.

While the literature also encompasses analyses of the interaction of personal and environmental factors (Rhodes, Courneya, Blanchard, & Plotnikoff, 2007; Weiss & Ferrer-Caja, 2002) and the role of family involvement and support (Beets, Cardinal, & Alderman, 2010; Clark, 2009; Gustafson & Rhodes, 2006; Lee et al., 2010), our focus was more on adolescents' perceptions of the outcome matrix they believed to be associated with activity participation. We wanted to hear in their own words what they had to say about being active in sports and exercise programs. From this, we intended to map positive and negative attitudes that hypothetically could affect their intention to engage in activity.

Because sports and exercise programs have varying short- and long-term impacts on participants (Centers for Disease Control and Prevention, 2012), we believed we could best extract opinions from adolescents about their participation in PA by inquiring about how such engagements might *change* them.

Method

A qualitative paradigm seemed the most appropriate approach to answer our research question, namely, "What are adolescents' perceptions of the effects of their participation in PA?" In a language geared to our adolescent population, our research question became what activity involvement "does to" or "does for" them. The researchers had extensive academic and practical training in qualitative methodology to address research questions regarding access to different facets of participants' lived experiences.

Within the scope of qualitative approaches to data gathering, it seemed reasonable to collect our data within relatively nonthreatening focus groups. Focus groups have been described as a method that involves in-depth group interviews with participants who are elected as a purposive, though not necessarily representative, sample of a given population (Krueger & Casey, 2009; Rabiee, 2004). Typically, participants are chosen based on criteria such as their capacity to offer something relevant concerning the research topic, an appropriate age range, and having sociocultural characteristics that would allow them to experience comfort with the interviewer in this context.

Participants

Based on practical considerations, we wanted to be sensitive to factors such as age, sex, and type of school (public vs.

Table 1. Number of Focus Groups/Number of Participants (Mean Age) According to Sex, Grade Level, and School Type.

Sex	Grade level	School type		Total
		Private	Public	
Boys	Secondary 2 and 3	12/111 (13.3)	11/115 (14.0)	23/226 (13.6)
	Secondary 4 and 5	12/118 (15.6)	16/128 (16.0)	28/246 (15.8)
	Total	24/229 (14.5)	27/243 (15.0)	51/472 (14.8)
Girls	Secondary 2 and 3	12/108 (13.2)	11/99 (13.7)	23/207 (13.4)
	Secondary 4 and 5	35/302 (15.8)	14/115 (16.1)	49/417 (15.9)
	Total	47/410 (15.1)	25/214 (15.0)	72/624(15.1)
Total	Secondary 2 and 3	24/219 (13.3)	22/214 (13.9)	46/433 (13.6)
	Secondary 4 and 5	47/420 (15.7)	30/243 (16.0)	77/663 (15.8)

private) in constituting our focus groups. Fortuitously, we were able to conduct a sufficient number of groups to understand the potential differences among groups organized according to these three factors. Consequently, our study allowed us not only to investigate the perceptions of adolescents regarding sport and PA participation but also to estimate whether these perceptions varied as a function of age (operationalized as grade level), sex, and type of school.

Following institutional ethics approval, we were successful in gaining access to the adolescent population through the public and private English high school systems in the greater Montreal area and, more specifically, through teachers in the physical education curriculum who acted as gatekeepers within these schools. An initial community-based experience with three small groups of adolescents (approximately seven participants in each group) served to pilot our focus group questions, sharpen our research design, and refine the facilitation skills of our research assistants. Based on the community groups, we determined that separating boys and girls would be quite important as well as restricting the age range in the groups. Though we considered including French high schools, we decided not to add yet another variable beyond age, sex, and school type at this point in our research.

Data collection involving 123 focus groups in six high schools took place over the period of a school year. The number of focus groups according to sex, grade level, and school type can be seen in Table 1, along with the numbers of participants and mean ages by category. As noted, we operationalized age as school grade level and opted to restrict our study to Secondary 2 to 5 (Grades 8-11; 13-17 year old) students; moreover, we created two age levels by combining focus groups in Secondary 2 and 3 and those in Secondary 4 and 5. All data for boys in the private school sector came from one high school, whereas data for girls in private schools came from three schools. Data from public schools were obtained from focus groups in two public schools. Slight age differences between private and public schools are likely the result of the fact that private school focus groups were conducted toward the beginning of the school year, while those for public schools occurred toward the end of the year. A total of 1,096 adolescents participated in the study with a range of 7 to 10 adolescents in each group.

Data Collection

The focus groups were conducted during the students' regularly scheduled physical education classes, with participants convening with their usual classmates. The schools provided quiet meeting spaces, and teachers were never in proximity of the sessions. The sessions lasted 50 min in all cases.

Based on our preliminary sampling with community focus groups, two decisions about data collection emerged: The first was that it was helpful to participants to have their ideas recorded on flip charts throughout the sessions. This allowed them to keep track of comments and build on ideas that had previously been offered. The second decision was that audio-recordings of session were unlikely to yield high-quality data. Factors such as participants' speaking in soft voices and loud ambient noise could not reliably be controlled. The data used for this study therefore consisted of the verbatim remarks of participants as publicly written on flip chart sheets by the recorders and validated by participants during the sessions.

Each focus group was led by two research assistants: a focus group leader, who conducted the session by covering the introduction, ethical consent process, and questioning period, and a recorder, who was responsible for noting all responses verbatim on flip chart paper on a large easel positioned in plain view of the group. Following a brief overview of the process, the leader addressed ethical considerations. An emphasis was placed on the fact that adolescents could choose whether or not to participate. If they declined to take part in the study, they could simply sit comfortably on the periphery of the group. Consent forms were reviewed and participants were asked to complete and return them to the group leader. Once this was done, a warm-up question was asked, namely, "What activities do you like to do?" This was conducted in a round-table manner requiring each participant to answer. Following the warm-up, a series of questions pertaining to the research topic was asked. The focus group

leader would encourage participation by repeating or rephrasing the question in parallel wording and by using predetermined prompts. The recorder would normally ask for verification and clarification of what he or she was writing if this was deemed necessary; she or he also validated the transcripts with the participants.

The focus group questions were posed in a set sequence, beginning with a broad focus on what people might get out of participation in sports and PA. The focus was then narrowed to include emotional and behavioral impacts as well as impacts on personality. More specifically, the sequencing of questions was as follows:

1. What do you think people get out of sports or PA?
2. How do you think sports and PA affect the way you feel? When you do sports or PA, how does it affect your moods or feelings?
3. How do you think sports and PA affect the way you act? How might being active in sports and PA influence or change the way you act and behave?
4. How do you think sports and PA affect your personality? If you play sports or do PA for a long time, do you think it changes your personality?

A fifth question was asked concerning whether adolescents thought different sports attracted different types of people; this was included to further explore what perceptions they had of sports and PA. In addition, a series of questions intended to examine adolescents' reflections about aspects of in-school physical education programs was included at the end of the interview. Responses to these questions were not included in this analysis.

Data Analysis

Qualitative

The selected method of data gathering through focus group interviews precluded the inclusion of research participants in the meaning-making process. Consequently, members of the research team had sole responsibility for interpretation of the data once all sessions had been transcribed. Thematic analysis was used to make sense of the data set and to identify themes and patterns (Braun & Clarke, 2006) that addressed the research questions. Two analysts from the research team, who had also facilitated some of the focus groups, independently read all recorded comments to thoroughly familiarize themselves with the entire data set. They annotated the texts with in vivo codes (Cresswell, 1998) drawn from the participants' own words or marked them with inductively generated concepts—using either sensitizing concepts (Blumer, 1969) or constructs from the literature. An example of in vivo codes is "anger/aggression," which was extracted from comments such as "contact sports are aggressive" or "in golf, you get angry easily, [it is] very easy to miss the ball or hit too far or not far enough. You need to be very concentrated; and concentration creates frustration." Examples of codes using sensitizing concepts or informed by theory are "physical benefits of PA" such as "[PA] helps you stay healthy" and "autonomy/self-determination" exemplified by "it's not about the outcome of the game, but how you perform."

Three researchers, including the two analysts, later met to discuss the different themes and concepts that had been proposed. Together, they agreed on a list of 27 concepts that were then used to code the entire data set. To ensure further trustworthiness of the study (Mishler, 1986), a codebook (Medin & Brasalou, as cited in Dey, 1993), which contained rules for inclusion, exemplars, and boundary definitions for each of the codes, was elaborated prior to the start of the coding process. An excerpt from the codebook for "learning" is as follows:

> Code name: Learning
>
> Rule for inclusion: A skill, life skills, cognitive abilities or personal competencies, that is learned or acquired as a result of doing a sport or participating in PA. Could be a life skill, technique, cognitive ability, or personal competence.
>
> Exemplar: "I learned technique"
>
> Boundary definition: Does not include leadership, team skills or a skill meant to increase one's health or physical ability (those are included in health benefits).

The data gathered from each focus group were coded separately. Subsequently, the researchers reduced the original 27 codes to 12 distinct codes, given the similarities between the data extracts collated under each code (Braun & Clarke, 2006). These represented the 12 themes to be described in the "Results" section.

Quantitative

The quantitative analyses required a method for converting the extensive qualitative information obtained into numerical values. Miles and Huberman (1994) have previously demonstrated the value of assessing the strength of qualitative codes by enumerating their frequencies in a data set. Using this logic, it was a simple matter to count the number of examples of each theme in a particular focus group from our spreadsheets. After doing this, it was then necessary to create continuous variables from the frequency measures. The following procedure was used to do so: The first step was to convert frequencies into percentile scores. To do this, the frequency of responses reflecting a theme for a particular group was converted to a percentile score based on the total number of responses to all themes by that group. The second step was to convert the percentile scores into four percentile groups. Cutoffs at the 0, 25th, 50th, and 75th percentiles were used to stipulate a low to high number of times the group discussed

a particular theme. If there was no discussion of the variable by participants, it received a 0. The number of utterances occurring between 1% and 25% based on all groups received a score of 1, the number of utterances from 26% to 50% of total occurrences received a score of 2, from 51% to 75% a score of 3, and a score of 4 was given for those 75% and above. A higher percentile represented more discussion of the variable in relation to the other groups. Using these percentile-grouping scores, between-subjects three-way ANOVAs (by public vs. private, by boys vs. girls, by Levels 2-3 vs. Levels 4-5) were conducted to examine differences in occurrence of themes elicited in the focus groups. Pearson product–moment correlations among the 12 thematic variables were also generated.

Results

Qualitative

Twelve themes were identified in the analysis of focus group data. Definitions are provided along with verbatim examples from participants. Taking all 123 focus groups into account, a tabulation of the number of comments noted in each theme was made, thereby allowing an estimate of the percentage of all comments judged to fall into each of the 12 themes. The themes are presented according to their relative predominance across all focus group sessions.

1. Positive Effects (18.5%): Comments representative of this theme pertained to perceived positive outcomes from participation in sports and PA with the exception of remarks reflecting positive moods or self-image (see Sport–Positive Emotions). For the most part, these positive effects concerned health improvements, positive physical changes, gains in specific physical competencies such as eye–hand coordination or flexibility, greater endurance, and higher fitness levels. Examples: "You get stronger," "You become more coordinated," "You don't get sick so often," "I'm able to bench press 50 kilos."
2. Sport–Positive Emotions (15.6%): Any references to positive emotions experienced as a result of participation in sports and PAs were included in this theme. Beliefs about the positive emotional impact of activity as well as personal reports were included. Examples: "I feel better after I play," "It makes me happy," "I feel good," "After I play, I feel all relaxed."
3. Learning (11.3%): This theme reflects remarks that connect sport and activity participation with learning of life skills, cognitive abilities, or personal competencies, but not including leadership, team skills (see Leadership and Team Skills), health, or physical skills (see Positive Effects) learned through participation. Examples: "I think faster and that helps me in school," "It makes you see how to solve problems anywhere," "You deal with your mistakes better and you learn from it."
4. Leadership and Team Skills (9.4%): Remarks included in this theme are expressive of positive experiences of teamwork as well as the development of leadership and self-discipline through participation in sports and PAs. Examples: "You learn discipline—You have to," "You become a leader," "You have to work together to be a team," "You figure out how to be the best team you can be."
5. Positive Character Development (8.8%): Comments under this theme represent connections between positive character development and involvement in sports or PA. These include personal remarks as well as general beliefs or stereotypes pertaining to the reinforcement of positive characteristics through sports and activity participation. Examples: "You feel more self-confident when you work out," "Sports make nice people nicer," "I feel more mature," "It can make you a better person."
6. Negative Effects (7.1%): Under this theme are references to negative outcomes from participation in PAs and sports that are almost entirely of a physical nature. Examples: "I get really tired from doing sports," "I can't sleep the night before a game," "You can get seriously hurt," "I have less personal time because of sports."
7. Social Skills and Friends (6.4%): Remarks representing this theme associate participation in PAs and sports with the fostering of social relationships, friendships, and social skills. It does not include explicit references to leadership or team development (see Leadership and Team Skills). Examples: "You make a lot of new friends," "You learn tolerance," "I like playing team sports because you get to be with other kids," "You can share a lot of stuff when you're always training together."
8. Sport Compatibility (5.9%): This theme comprised comments reflecting perceived parallels between individual characteristics and different activity types either from a general belief perspective or more personal observations. Comments included do not explicitly refer to changes in characteristics as a result of participation (see Self-Identity). Examples: "Guy and girl dancers are gentle. Basketball players are all over the place. If you are quiet, you walk," "Confused people do yoga," "You do an aggressive sport if you're an aggressive person," "My sister is a quiet type so she does yoga."
9. Competition (4.8%): Remarks are included here that refer to competitiveness, winning, or losing in relation to sports and PAs, without further reference to the emotional impacts of competitiveness (e.g., "Winning makes me happy" would be in Sport–Positive Emotions). Examples: "If you're going to

Table 2. 12 Themes: Means and Standard Deviations by Grade Level, Sex, and School Type.

Type of school	Private				Public			
Gender	Male		Female		Male		Female	
Grade level	2-3	4-5	2-3	4-5	2-3	4-5	2-3	4-5
Variable	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Positive Effects	1.58 (.90)	1.50 (.80)	1.71 (.95)	1.7 (.78)	1.63 (.90)	1.65 (.79)	1.73 (1.01)	1.50 (.82)
Sport–Positive Emotions	1.60 (.67)	1.17 (.39)	1.43 (.79)	1.68 (.75)	1.81 (.87)	1.56 (.81)	1.75 (.68)	2.17 (.83)
Learning	2.08 (.79)	2.17 (.94)	1.57 (.79)	1.68 (.85)	1.55 (.93)	1.31 (.70)	1.50 (.73)	1.25 (.62)
Leadership and Team Skills	1.83 (.94)	1.42 (.79)	2.14 (.90)	1.64 (.92)	1.55 (.82)	1.69 (.79)	1.50 (.82)	1.67 (.89)
Positive Character	1.67 (.78)	1.33 (.65)	1.71 (.95)	1.59 (.80	1.18 (.60)	1.50 (.73)	1.63 (.81)	1.75 (1.06)
Negative Effects	2.08 (1.00)	2.00 (.85)	1.29 (.76)	1.62 (.98)	1.45 (1.13)	1.19 (.98)	1.38 (.96)	1.17 (.94)
Social Skills and Friends	1.42(1.08)	2.08 (1.00)	1.43 (.98)	1.65(.98)	1.46 (1.12)	1.81 (.98)	2.06 (.93)	1.33 (.78)
Sport Compatibility	1.00 (1.28)	2.25 (.87)	2.00 (1.00)	1.40 (.83)	1.82 (1.08)	1.69 (.95)	1.19 (.98)	1.67 (.83)
Competition	1.42 (.90)	1.50 (.90)	.86 (.38)	1.38 (.98)	1.36 (1.29)	1.31 (.87)	1.19 (.83)	1.75 (1.06)
Aggression	1.67 (.78)	1.83 (.72)	1.00 (1.00)	1.10 (.91)	1.45 (1.13)	1.50 (.89)	1.31 (1.14)	.92 (.90)
Autonomy	2.08 (1.00)	1.08 (.67)	1.00 (.58)	1.43 (.93)	1.18 (.75)	1.56 (1.09)	1.50 (1.10)	1.25 (.87)
Self-Identity	1.17 (.94)	1.33 (1.23)	.71 (1.11)	1.36 (1.09)	1.27 (.90)	.75 (.58)	.94 (.44)	1.25 (1.14)

play, you've got to be really competitive," "It's all about winning and losing," "When you're younger, you just go and play—When you get older, you get more competitive."

10. Aggression (4.6%): Comments within this theme reflect the emotional experiences of anger, aggression, or violence in connection with sports and PA. Such emotional expressions were not seen as part of Sport–Positive Emotions. Both self-reported experiences and observations of others in these emotional states were included. Examples: "Boxing and football make people aggressive," "I get really angry during practice," "Sometimes there's a lot of violence in a game," "On the field, I just feel like pushing [others] more."
11. Autonomy (4.5%): This theme is represented by remarks that referred to being autonomous, self-motivated, determined, or self-reliant in regard to participation in PAs and sports. Examples: "I want to work harder to become better," "I just want to play—No one has to tell me to do it," "It's something I do just for me."
12. Self-Identity (3.2%): Comments within this theme reflect a connection between activity participation and personal identity without explicit evaluative overtones. This theme takes into consideration references to core personality change and how activities shape personal character. Examples: "The way you are in sports is the way you are in life," "You show your real personality on the field," "You change—You become like a different person."

Quantitative

Table 2 displays the means and standard deviations for the 12 themes studied according to grouping by level, age, and school type. Between-subjects three-way ANOVAs were mostly nonsignificant. Exceptions include the following: With respect to the theme of Aggression, there was a significant main effect found for gender: Boys scored higher than girls, $F(1, 116) = 7.82$, $p < .01$. With regard to the theme of Sport–Positive Emotions, a significant effect of type of school was found where scores were higher in private than in public schools, $F(1, 116) = 6.14$, $p < .05$. Within this same theme, an interaction effect was found between gender and grade level, $F(1, 116) = 5.22$, $p < .05$, which indicated that girls scored higher than boys in Grades 4 and 5 only. There was a main effect found in the Learning theme for type of school: Scores were higher in private than public, $F(1, 116) = 5.70$, $p < .01$. In the Negative Effects theme, a main effect for school type was found: Scores were higher in private than in public, with $F(1, 116) = 5.41$, $p < .01$. In the Sport Compatibility theme, an interaction effect was found between gender and grade level, $F(1, 116) = 10.32$, $p < .01$, in that

boys scored higher than girls in the Grades 4 to 5 group. In the Social Skills and Friends theme, a two-way effect was found (Gender × Grade Level), $F(1, 116) = 3.90$, $p < .05$.

A correlation analysis was also conducted and revealed significant correlations between Self-Identity and Sport Compatibility, $r(121) = .18$, $p < .05$. A significant correlation was also found between Autonomy and Positive Effects, $r(121) = .18$, $p < .05$; between Learning and Negative Effects, $r(121) = .18$, $p < .05$; and between Social Skills and Friends and Sport Compatibility, $r(121) = .22$, $p < .05$.

Given the largely nonsignificant ANOVA differences between groups, an appreciation of the proportion of comments by themes across all groups becomes more relevant. Two themes consumed over a third of the comments in all groups: Sport–Positive Emotions (15.6%) and Positive Effects (18.5%). All other themes ranged between 3% and 7% except for Positive Character Development (8.8%), Leadership and Team Skills (9.4%), and Learning (11.3%).

Discussion

If we consider the broad question of whether adolescents perceive a sufficient range of important positive outcomes from participation in sports and PA, we would answer affirmatively based on the results of this investigation. From TRA and TPB (Ajzen, 1991; Ajzen & Fishbein, 1980), we can surmise that adolescents' intentions to engage in PAs should be enhanced by such wide-ranging positive perceptions. Of course, these theories speak more directly about the relevance of positive and negative attitudes for intentionality. Though positive attitudes toward PA were not always explicit in the verbatim comments of our research participants, negative attitudes seemed more apparent. If we summate the two thematic categories of Negative Effects (7.1%) and Aggression (4.6%), we would have evidence of a relatively small proportion of adolescents' perceptual maps of the outcome matrix from activity participation as being undesirable. By contrast, we find support in this investigation for significant degrees of positive emotional experiences and other more tangible positive outcomes (e.g., weight loss) from participation. Moreover, adolescents in our study seemed to believe that PA participation is a rich source of learning, self-development, friendship development, and leadership and team experiences.

How well the perceptions detailed in this study translate into positive attitudinal influences on intentionality unfortunately remains somewhat of a speculation. Adolescents in our investigation sometimes spoke personally, while at other times they offered generic comments or observations about the worlds in which they live. For instance, the following comment, which we categorized under the theme of competition, does not easily permit affective assessment: "When you're younger, you just go and play—When you get older, you get more competitive." It is unclear whether such an element in an adolescent's perceptual map of the world of PA participation would enhance his or her intention to engage.

We are also mindful of the fact that all of our data derived from focus groups that took place as a substitute for regularly scheduled physical education classes. Would this contextual factor have biased our results toward a stronger affirmation of the positive face of sports and PA? Teachers were not present and the researchers gave participants every reassurance of confidentiality, yet the stage may have been set for a positive response bias.

However, conducting our study within the school system yielded an unexpected boon. Our good fortune was to be able to conduct a large number of focus groups with strong similarity in such conditions as settings (classrooms and open exercise areas), timing (the sacrosanct class period that guaranteed timely arrivals and departures), segmentation (by sex and age), and comportment (in a school setting that reinforced positive group behaviors). With 123 focus groups, we then had the opportunity to convert our qualitative data into quantitative measures to investigate potential differences due to age, sex, and school type. Our analysis of these differences provided another degree of confidence in the robustness of our findings. For each ANOVA, we tested for three main effects, three 2-way interactions and one 3-way interaction, resulting in 84 tests of significance. Of these, only 7 (or 8.3%) reached significance at the .05 level or beyond. Consequently, it made more sense for us to speak of a relative absence of differences rather than to focus attention on the few significant findings.

Normally, this absence of strong differences might be seen as unsupportive of either implicit or explicit hypotheses embedded in the research design. However, we chose to investigate potential differences according to age, sex, and school type not because we expected them, but rather because we thought they could be of potential importance. For the most part, the implications of the quantitative analyses seem to be as follows: (a) Boys and girls hold similar perceptual maps of PA; (b) within the restricted age range of approximately 13 to 18, major differences in perceptions are not apparent; and (c) attendance at interscholastic sport-intensive private schools versus intramural activity-focused public schools matters little regarding adolescents' perceptions and attitudes regarding PA. Perhaps, then, these results allow us to take a wider lens to the meanings of our investigation.

We noted earlier that studies and reviews of studies on adolescents' attitudes, motivations, and facilitating conditions for reliable activity participation have highlighted a number of important variables. Relative to the nature of our study, past research lends support for some themes that we identified from the focus group data. For instance, the significance of perceived physical competence for PA participation (Graham et al., 2011; Deci & Ryan, 2000, 2002; Weiss & Williams, 2004) can be linked to our identified themes of Autonomy, Positive Character Development, Learning, and Positive Effects. The variable of self-efficacy previously

identified in research (Van der Horst et al., 2007) was clearly prominent in our investigation. Fun and enjoyment (Weiss & Williams, 2004) were also evident in our themes of Sport–Positive Emotions and Social Skills and Friends.

While these overlapping indicators of potential influences on intentionality to be physically active are noteworthy, we believe our investigation has implications beyond such intersections. With mindfulness of the important caveats about interpretation of these findings owing to the subjective methodology and parameters of our research, we nonetheless would suggest that the resultant hierarchy of themes as indicated by proportions of mentions in the focus groups speaks to the perceptual maps or "mind-sets," if you will, of adolescents regarding sports and PA. The most frequently described theme across the 123 focus groups was that of Positive Effects, which largely comprised positive physical outcomes and changes that adolescents believed to be a reliable benefit of participation. Second, they frequently associated positive emotional experiences with involvement in activities. As the third most mentioned theme, adolescents described learning processes evolving from engagement in sports and PA. Finally, if we think of Self-Identity (3.2%), Autonomy (4.5%), and Positive Character Development (8.8%) as a rough clustering of themes indicating core-level shifts in an adolescent's personal life orientation, we can envision a hypothesis worthy of further investigation, namely, that adolescents' motivation for engagement in sports and PA derives from far more than somatically based incentives such as strength, weight, or body image. In their evident linkage of these issues to PA (16.5% of all comments), we can read a significant desire for personal and psychological transformation through activity engagement.

This encouraging perceptual map of adolescents' self-described outcome matrix from participation stands in the face of the low involvement rates cited earlier. If we were to speculate about this discrepancy, we would suggest that a high proportion of comments about what one experiences in or receives from a physically active life goes well beyond weight management, a healthy body, or athletic prowess. Perhaps it is time to turn up the volume on well-documented findings about the nonphysical benefits of exercise in messaging to this population (McPhie & Rawana, 2012; Weiss, Amorose, & Kipp, 2012). There is certainly little evidence from this study that adolescents detest or dislike being physically active. Negative effects (7.1%) were mostly about resultant fatigue or injury from activity participation and time investments required; adolescents rarely commented on psychological harm or assaults to participants' self-esteem.

From the perspectives of adolescents who participated in this investigation, more clearly identified pathways and linkages between "hoped for" personal transformations and the requirements for experiencing such outcomes might be needed. From the TPB (Ajzen, 1991), we know that positive attitudes are thought to influence individuals' sense of control over intended behaviors, yet there is precious little guidance in the literature regarding evidence-based processes for producing sustainable shifts in personal functioning. While it is true that research tells us that "exercise is good for mental health" (Gerber et al., 2012; Rees & Sabia, 2010), both adolescents and adults alike may have inadequate maps regarding the ongoing requirements to maintain such states of being. To make this point by contrast, consider what we know and what we are able to tell participants about program design for successfully running a 10K race. If we wanted to promote the potential of activity participation for the enhancement of character, autonomy, self-identity, positive emotional states, leadership, or other themes identified in our investigation, how might we articulate the paths to these goals without sounding platitudinous? Health and sport science professionals would be most unlikely to advocate sporadic or episodic engagements in PA to generate lasting personality changes or character development, but what could they say? What do we know about these desired outcomes of PA? Adolescents might be quite curious not only to know that PA holds profound potential for positive personal transformations but also to hear about what constitutes a reliable pathway to these desired shifts.

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References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*, 179-211. doi:10.1016/0749-5978(91)90020-T

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Engelwood, CA: Prentice Hall.

Bandura, A. (1999). Self-efficacy: Toward a unifying theory of behavioral change. In R. F. Baumeister (Ed.), *The self in social psychology* (pp. 285-298). Philadelphia, PA: Psychology Press.

Beets, M. W., Cardinal, B. J., & Alderman, B. L. (2010). Parental social support and the physical activity-related behaviors of youth: A review. *Health Education & Behavior*, *37*, 621-644.

Bélanger, M., Casey, M., Cormier, M., Laflamme Filion, A., Martin, G., Aubut, S., & . . .Beauchamp, J. (2011). Maintenance and decline of physical activity during adolescence: Insights from a qualitative study. *International Journal of Behavioral Nutrition and Physical Activity*, *8*, 117-125. doi:10.1186/1479-5868-8-117

Biddle, S. J. H., Atkin, A. J., Cavill, N., & Foster, C. (2011). Correlates of physical activity in youth: A review of quantitative systematic reviews. *International Review of Sport and Exercise Psychology*, *4*, 25-49.

Biro, F. M., & Wien, M. (2010). Childhood obesity and adult morbidities. *American Society for Nutrition*, *91*, 1499S-1505S. doi:10.3945/ajcn.2010.28701B

Blumer, H. (1969). *Symbolic interactionism: Perspective and method*. Englewood Cliffs, NJ: Prentice Hall.

Booth, M. L., Okely, A. D., Denney-Wilson, E., Hardy, L., Yang, B., & Dobbins, T. (2006). *NSW schools physical activity and nutrition survey (SPANS) 2004: Full report*. Sydney, Australia: NSW Department of Health.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*, 77-101.

Centers for Disease Control and Prevention. (2011). *Youth physical activity guidelines toolkit*. Retrieved from http://www.cdc.gov/healthyyouth/physicalactivity/guidelines.htm

Centers for Disease Control and Prevention. (2012). *Adolescent and school health*. Retrieved from http://www.cdc.gov/healthyyouth/physicalactivity/facts.htm

Clarke, W. (2009). *Kid's sports*. Retrieved from http://www.statcan.gc.ca/pub/11-008-x/2008001/article/10573-eng.htm#a1

Colley, R. C., Garriguet, D., Janssen, I., Craig, C. L., Clarke, & Tremblay, M. S. J. (2011). *Physical activity of Canadian children and youth: Accelerometer results from the 2007 to 2009 Canadian Health Measures Survey*. Health Reports. Statistics Canada, Catalogue no. 82-003-XPE. 22(1). Retrieved from http://www.statcan.gc.ca/pub/82-003-x/82-003-x2011001-eng.htm

Cresswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: SAGE.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination theory. *Psychological Inquiry*, *11*, 227-268.

Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research*. Rochester, NY: The University of Rochester Press.

Dey, I. (1993). *Qualitative data analysis: A user-friendly guide for social scientists*. London, England: Routledge.

Downs, D. S., & Hausenblas, H. A. (2005). The theories of reasoned action and planned behavior applied to exercise: A meta-analytic update. *Journal of Physical Activity & Health*, *2*, 76-97.

Duncan, M. J., Rivis, A., & Jordan, C. (2012). Brief report: Understanding intention to be physically active and physical activity behaviour in adolescents from a low socio-economic status background: An application of the Theory of Planned Behaviour. *Journal of Adolescence*, *35*, 761-764. doi:10.1016/j.adolescence.2011.07.017

Gerber, M., Kalak, N., Lemola, S., Clough, P. J., Pühse, U., Elliot, C., & . . .Brand, S. (2012). Adolescents' exercise and physical activity are associated with mental toughness. *Mental Health and Physical Activity*, *5*, 35-42. doi:10.1016/j.mhpa.2012.02.004

Godin, G., & Kok, G. (1996). The theory of planned behavior: A review of its applications to health-related behaviors. *American Journal of Health Promotion*, *11*, 87-98.

Graham, D. J., Schneider, M., & Dickerson, S. S. (2011). Environmental resources moderate the relationship between social support and school sports participation among adolescents: A cross-sectional analysis. *International Journal of Behavioral Nutrition and Physical Activity*, *8*, 34-43.

Gustafson, S. L., & Rhodes, R. E. (2006). Parental correlates of physical activity in children and early adolescents. *Sports Medicine*, *36*, 79-97.

Hagger, M. S., Chatzisarantis, N. D., & Biddle, S. H. (2002). A meta-analytic review of the theories of reasoned action and planned behavior in physical activity: Predictive validity and the contribution of additional variables. *Journal of Sport & Exercise Psychology*, *24*, 3-32.

Hamilton, K., & White, K. M. (2008). Extending the theory of planned behavior: The role of self and social influences in predicting adolescent regular moderate-to-vigorous physical activity. *Journal of Sport & Exercise Psychology*, *30*, 56-74.

Jõesaar, H., & Hein, V. (2011). Psychosocial determinants of young athletes' continued participation over time. *Perceptual and Motor Skills*, *113*, 51-66.

Kjonniksen, L., Anderssen, N., & Wold, B. (2009). Organized youth sport as a predictor of physical activity in adulthood. *Scandinavian Journal of Medicine & Science in Sports*, *19*, 646-654. doi:10.1111/j.1600-0838.2008.00850.x

Krueger, R., & Casey, M. A. (2009). *Focus groups: A practical guide for applied research* (4th ed.). Thousand Oaks, CA: SAGE.

Lee, S. M., Nihiser, A., Strouse, D., Das, B., Michael, S., & Huhman, M. (2010). Correlates of children and parents being physically active together. *Journal of Physical Activity and Health*, *7*, 776-783.

McPhie, M. L., & Rawana, J. S. (2012). Unravelling the relation between physical activity, self-esteem and depressive symptoms among early and late adolescents: A mediation analysis. *Mental Health and Physical Activity*, *5*, 43-49. doi:10.1016/j.mhpa.2012.03.003

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: SAGE.

Mishler, E. G. (1986). *Research interviewing: Context and narrative*. Cambridge, MA: Harvard University Press.

Plotnikoff, R. C., Lubans, D. R., Costigan, S. A., Trinh, L., Spence, J. C., Downs, S., & McCargar, L. (2011). A test of the theory of planned behavior to explain physical activity in a large population sample of adolescents from Alberta, Canada. *Journal of Adolescent Health*, *49*, 547-549. doi:10.1016/j.jadohealth.2011.03.006

Rabiee, F. (2004). Focus-group interview and data analysis. *Proceedings of the Nutrition Society*, *63*, 655-660. doi:10.1079/PNS2004398

Rees, D. I., & Sabia, J. J. (2010). Exercise and adolescent mental health: New evidence from longitudinal data. *Journal of Mental Health Policy and Economics*, *13*, 13-25.

Rhodes, R. E., Courneya, K. S., Blanchard, C. M., & Plotnikoff, R. C. (2007). Prediction of leisure-time walking: An integration of social cognitive, perceived environmental, and personality factors. *International Journal of Behavioral Nutrition and Physical Activity*, *4*, 51-61. doi:10.1186/1479-5868-4-51

Sallis, J. F., Prochaska, J. J., Taylor, W. C., Hill, J. O., & Geraci, J. C. (1999). Correlates of physical activity in a national sample of girls and boys in Grades 4 through 12. *Health Psychology*, *18*, 410-415. doi:10.1037/0278-6133.18.4.410

Sallis, J. F., Simons-Morton, B. G., Stone, E. J., & Corbin, C. B. (1992). Determinants of physical activity and interventions in youth. *Medicine & Science in Sports & Exercise*, *24*(6 Suppl.), S248-S257.

Sheeran, P., Norman, P., & Orbell, S. (1999). Evidence that intentions based on attitudes better predict behaviour than inten-

tions based on subjective norms. *European Journal of Social Psychology*, *29*, 403-406.

Sheppard, B. H., Hartwick, J., & Warshaw, P. R. (1988). The theory of reasoned action: A meta-analysis of past research with recommendation and future research. *Journal of Consumer Research*, *15*, 325-343.

Statistics Canada. (2011). *Canadian health measures survey: Physical activity of youth and adults*. Retrieved from http://www.statcan.gc.ca/daily-quotidien/110119/dq110119b-eng.htm

Sulemana, H., Smolensky, M. H., & Lai, D. (2006). Relationship between physical activity and body mass index in adolescents. *Medicine & Science in Sports & Exercise*, *38*, 1182-1186.

Toftegaard-Støckel, J. J., Nielsen, G. A., Ibsen, B. B., & Andersen, L. B. (2011). Parental, socio and cultural factors associated with adolescents' sports participation in four Danish municipalities. *Scandinavian Journal of Medicine & Science in Sports*, *21*, 606-611. doi:10.1111/j.1600-0838.2010.01093.x

Troiano, R. P., Berrigan, D., Dodd, K. W., Masse, L. C., Tilert, T., & McDowell, M. (2008). Physical activity in the United States measured by accelerometer. *Medicine & Science in Sports & Exercise*, *40*, 181-188. doi:10.1249/mss.0b013e31815a51b3

Van der Horst, K., Paw, M. J. C., Twisk, J. W. R., & Van Mechelen, W. (2007). A brief review on correlates of physical activity and sedentariness in youth. *Medicine & Science in Sports & Exercise*, *39*, 1241-1250.

Weiss, M. R., Amorose, A. J., & Kipp, L. E. (2012). Youth motivation and participation in sport and physical activity. In R. M. Ryan (Ed.), *The Oxford handbook of human motivation* (pp. 520-553). New York, NY: Oxford University Press.

Weiss, M. R., & Ferrer-Caja, E. (2002). Motivational orientations and sport behavior. In T. S. Horn (Ed.), *Advances in sport psychology* (2nd ed., pp. 101-183). Champaign, IL: Human Kinetics.

Weiss, M. R., & Williams, L. (2004). The why of youth sport involvement: A developmental perspective on motivational processes. In M. Weiss (Ed.), *Developmental sport and exercise psychology: A lifespan perspective* (pp. 223-268). Morgantown, WV: Fitness Information Technology.

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