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Using a Naturalistic Ecological Approach to Examine the Factors Influencing Youth Physical Activity Across Grades 7 to 12

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High levels of inactivity in youth have led researchers and practitioners to focus on identifying the factors that influence physical activity behaviors in young people. The present study employed a qualitative ecological framework to examine the intrapersonal, social, and environmental factors influencing youth physical activity. In grade-specific focus group settings, 160 youth in grades 7 through 12 (aged 12 to 18) were asked how they would increase the physical activity levels of youth their age. Participants identified eight factors that they felt should be addressed in programs and interventions designed to increase the physical activity behaviors of youth. These factors included the importance of fun, having the time to be physically active, the benefits of activity, being active with friends, the role of adults, and the importance of being able to access facilities in their neighborhood.

Keywords: *youth; physical activity; factors; ecological model; qualitative*

Physical inactivity in youth remains a concern among industrialized nations (Spence & Lee, 2003). Despite an expanding body of research detailing the numerous physical and

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psychological health benefits of activity (Biddle, Bower, & Stensel, 2004; Wharf-Higgins, Gaul, Gibbons, & Van Gyn, 2003), the majority of Canadian youth are inactive. A recent survey reported that as many as 82% of Canadian youth were not active enough to meet international guidelines for optimal growth and development (Craig & Cameron, 2004). A report from the Centers for Disease Control and Prevention (2003) showed that 62% of American children aged 9 to 13 years do not participate in any organized physical activity during nonschool hours, and 23% do not engage in any free-time physical activity. These statistics illustrate the prevalence of physical inactivity among youth, which has become a major health problem and a top priority among health professionals and educators.

The high levels of inactivity in youth have led researchers and practitioners to address the factors that influence physical activity behavior (Sallis, Prochaska, & Taylor, 2000). Although a number of relationships have been identified, only about 15% to 20% of the variance in youth physical activity level has been accounted for by the predictors identified to date (Zakarian, Hovell, Hofstetter, Sallis, & Keating, 1994). These findings suggest that the search for new variables should continue.

One strategy to help in identifying new factors may be to expand our phenomenological approaches to examining youth physical activity factors. It is commonly accepted that individuals are not passive responders but rather are active participants within their environment (Sherif & Sherif, 1969). Yet, at the present time, there is little research examining the factors of physical activity from the perspective of youth. Thus, one of the main purposes of the current study was to identify factors influencing physical activity using youth participants as active agents. Furthermore, involving youth as active agents can provide the researcher with a unique opportunity to gain a more complete picture and in-depth understanding of such factors (Bauer, Yang, & Austin, 2004; Biddle, Markland, Gilbourne, Chatzisarantis, & Sparkes, 2001; Mássé, Dassa, Gauvin, Giles-Corti, & Motl, 2002).

Sallis and colleagues (2000) noted that physical activity is a complex behavior determined by many factors and, as such, support the use of ecological models of behavior that suggests behavioral influences emanate from intrapersonal (biological, psychological, behavioral), social, and physical environmental factors. This is consistent with health researchers and practitioners who have recognized the critical need to use an ecological model when trying to understand the factors that may be associated with behavioral change (Green, Richard, & Potvin, 1996). In line with this reasoning, the current study employed an ecological framework by examining intrapersonal, social, and environmental factors influencing physical activity behaviors of youth. Baranowski, Anderson, and Carmack (1998) have suggested that one of the ways to increase the predictive value of physical activity models may be to develop separate models for different situations; one wonders whether different grades present different situations and whether these situations affect the identification of the factors that emerge as important for involvement in physical activity. This may be an important issue to examine given that research suggests that youth become increasingly less active as age and grade in school increase (Sallis, 1999; Sallis et al., 2000; U.S. Department of Health and Human Services 2000; Woodfield, Duncan, Al-Nakeeb, Nevill, & Jenkins, 2002). Thus, a final purpose of the present study was to examine the participant-identified factors associated with physical activity in youth in grades 7 through 12.

METHOD

Data Generation

The participants for this study were recruited from intact classes in four high schools (grades 9 to 12) and five middle schools (grade 7 to 8) located in a midsized Western Canadian city. These schools were located in diverse socioeconomic and ethnic areas of the city.

Once ethical approval was obtained from the university and the participating school divisions and principals at each school, a research team visited selected classes in each of the participating schools to explain the study. The participating classes of students were randomly selected from the available grade 7 to 12 classes in each of the nine schools. Consent and assent forms were sent home with the students and returned within a 1-week period.

The research team met with school-based administrators and teachers to develop criteria for participant selection that ensured that the youth selected would represent both sexes, have diverse levels of physical activity (i.e., from low to high activity levels), have a variety of physical activity experiences (played on school or community teams or were active in less organized activities like pick-up games), live in different areas of the city, and come from families that may or may not support physical activity for their children. This criterion was used to purposefully select 5 to 7 students per grade (7 to 12) from each of the nine schools involved in the study. A total of 160 students (80 males and 80 females) participated in semistructured group interviews. Forty-nine of the participants were in grades 7 or 8, 59 were in grades 9 or 10, and 52 were in grades 11 or 12. A total of 29 group interviews were conducted. Because the participants were selected from both co-ed and single-sex classes, they were interviewed in both co-ed and single-sex groups.

Group interviews were chosen as the method of data collection as this type of interview allows participants to come together to address a broad question (Morse & Richards, 2002). The group interviews were centered on one overarching question (Spradley, 1979). To focus participants' attention on physical activity, they were initially asked if they were aware of research that suggested that people their age needed to be more physically active. They were then asked to design an ideal physical activity opportunity for youth their age. Specifically, the participants were asked one overarching question: "If you could be the one in charge of increasing the physical activity levels of kids your age, what would you do?" Guiding questions that related to the three components of the ecological model were used to probe the overarching question. Examples of such questions included the intrapersonal ("Would you need to be skilled to participate in this activity or program?"), social ("Would you do this activity alone or with friends?"), and environmental ("Where would this activity be done?"). All group interviews were approximately 60 minutes in length and occurred during class time in the second semester of the school year (January to May). The participants did not receive any remuneration for participating in the interviews; however, each participating school received approximately 10 pieces of equipment for their physical education program (i.e., Frisbees, basketballs, skipping ropes).

The guiding questions used in the group interviews were developed with the assistance of teachers, consultants, and youth workers. The questions were pilot tested with five groups of students that represented the ages and grades involved in the study. The

pilot interviews confirmed that the overarching question was of interest to the ages of the youth we wished to involve in the study. Thus, no major changes were made to the interview guide as a result of the pilot interviews. Three research assistants acted as moderators for all of the interviews. Each moderator participated in three training sessions and either observed or conducted all of the pilot interviews. The three moderators had extensive experience working with adolescent youth. Two were in their thirties and were former high school teachers, and the third moderator was 25 years old and had experience working with youth in community programs. At the conclusion of the pilot interviews, the moderators met to discuss revisions to the interview guide. Each moderator kept a journal and, after each interview, they recorded their general impression of the interview and recurring issues and themes related to the research question. When half of the interviews were completed, the moderators met to debrief and compare thoughts and findings. It was apparent at the halfway point, and again several weeks later that similar findings were emerging on a consistent basis. This information helped us to determine when the data collection phase should come to a close.

Data Analysis

Data analysis was an ongoing process that began with the first interview. Key points and ideas were recorded, and issues in need of greater exploration were noted. This procedure allowed the data-gathering process to be data driven so that future interviews could expand the knowledge already gained (Morse & Richards, 2002). All focus group interviews were audiotaped and transcribed verbatim, following guidelines outlined by Merriam (2002) and Patton (2002). All of the transcripts were examined for accuracy prior to data analysis. Using the procedures consistent with content analysis (Patton, 2002), the transcripts of the interviews were reviewed by two members of the research team. This review facilitated the identification of preliminary patterns in the data. These patterns were identified as categories of information, which were then reviewed and clustered to identify themes within the data (Merriam, 2002). The emerging themes were classified according to the three components of the ecological model.

To enhance the credibility of the findings in this study, analyst triangulation was used in both data collection and data analysis (Patton, 2002). Multiple moderators were used to help ensure that the findings emerging from the interviews were not a result of personal bias or leading questions. In addition, the transcripts were reviewed independently by two research team members. Trustworthiness was enhanced through the use of an external consultant who had extensive experience working with youth in physical activity settings. This individual reviewed all of the transcripts, interpretations of the data, and data-analysis strategies. Once this review was complete, the researchers met with the external consultant to discuss their interpretation of the analysis.

RESULTS

The present study used an ecological model as a framework to analyze and organize the results from the focus group interviews. Because we interviewed the participants in same-grade groupings, we initially analyzed the data by grade. However, during data analysis, it became apparent that the responses of participants clustered into four groups: (a) grades 7 and 8, (b) grade 9, (c) grade 10; and (d) grades 11 and 12. The results from these groups have been organized within each domain of the ecological model (see Table 1).

Table 1. Summary of Results

Grades	Intrapersonal	Social	Environmental
7-8	1. Fun <ul style="list-style-type: none"> • perceived competence • perceived skill structured, dependent on skill level 	1. Friends <ul style="list-style-type: none"> • fun • meet people • make new friends 2. Adult involvement <ul style="list-style-type: none"> • supervise • facilitate 	1. Facilities <ul style="list-style-type: none"> • repair and maintenance • safety 2. Programs <ul style="list-style-type: none"> • community and school activities • age specific • highly organized 3. Accessibility <ul style="list-style-type: none"> • proximity • cost
9	1. Fun <ul style="list-style-type: none"> • perceived competence • perceived skill structured, dependent on skill level 2. Time barriers <ul style="list-style-type: none"> • schoolwork 3. Perceived health benefits <ul style="list-style-type: none"> • body image, females 	1. Friends <ul style="list-style-type: none"> • fun • influence • physical activity behavior 2. Adult involvement <ul style="list-style-type: none"> • supervise • facilitate 	1. Facilities <ul style="list-style-type: none"> • repair and maintenance • safety 2. Programs <ul style="list-style-type: none"> • less competitive • less structured • more variety, try new activities 3. Accessibility <ul style="list-style-type: none"> • proximity • cost
10	1. Fun <ul style="list-style-type: none"> • perceived competence • perceived skill structured, dependent on skill level 2. Time <ul style="list-style-type: none"> • schoolwork 3. Perceived health benefits <ul style="list-style-type: none"> • body image, females 	1. Friends <ul style="list-style-type: none"> • fun • influence physical activity behavior 2. Adult involvement <ul style="list-style-type: none"> • supervise • facilitate • more variety, try new activities 	1. Facilities <ul style="list-style-type: none"> • repair and maintenance • safety 2. Programs <ul style="list-style-type: none"> • less competitive • less structured 3. Accessibility <ul style="list-style-type: none"> • proximity • cost
11-12	1. Fun <ul style="list-style-type: none"> • perceived competence • perceived skill structured dependent on skill level 2. Time <ul style="list-style-type: none"> • part-time employment • schoolwork 3. Perceived health benefits <ul style="list-style-type: none"> • body image, females 	1. Friends <ul style="list-style-type: none"> • fun • influence physical activity behavior 2. Adult involvement <ul style="list-style-type: none"> • supervise • facilitate 	1. Facilities <ul style="list-style-type: none"> • repair and maintenance • safety 2. Programs <ul style="list-style-type: none"> • less competitive • less structured • more variety, try new activities • lifelong in nature 3. Accessibility <ul style="list-style-type: none"> • proximity • cost

Intrapersonal Factors

Three intrapersonal factors emerged from the focus group interviews: (a) fun, (b) time, and (c) perceived health benefits.

Fun. An important interpersonal factor that was discussed by all groups of students was the need for physical activity to be fun. Youth reported that an activity was fun if they felt they had the competence and confidence to participate. These two features greatly affected not only the choice of activity but also whether kids were active at all! It quickly became apparent that if youth felt that they were physically competent (skilled), a more structured competitive setting was viewed as fun, whereas if youth perceived low competence in executing a skill or task, a less structured and less competitive environment was considered more enjoyable.

In all focus groups, much of the discussion around the relationship between perceived competence and fun frequently involved the insecurities of “messaging up,” “getting laughed at,” “getting cut,” or “not being included.” When a group of students in grade 11 were asked what would stop their friends from participating in the physical activity opportunities they were designing, they explained that kids would not come if it was not fun, which they qualified as if their friends felt intimidated because of their lack of skill. They explained that if their friends went to a place where everyone seemed to be very skilled, they would not stay: “You don’t know what to do, you feel like you are not going to fit in, you can’t be up to their standards, so why bother?”

Students in all grades emphasized that youth needed to be able to choose the level of competition in any physical activity opportunity. This is evident in the comments of a grade 7 participant: “I’m not a really competitive person or anything, but I think that we should have two separate teams or something: one that is for people who would like to be a bit more competitive and then those [who would] not.” A desire for a less competitive environment was evident in the discussions of students in grades 10 to 12 who frequently stated that youth their age wanted opportunities to be active without rules and structure: A student in grade 10 suggested, “Make things more free; there is always tons of rules and stuff. You have to abide by their rules and the rules are no fun...just choose the rules as a group.” These feelings were echoed by a student in grade 12 who explained, “Well, for me and my friends, having fun is the whole point of being active. The best types of games are the ones that are not set, the ones that you just get together and pick up the ball and start playing.”

Time. Having the time to be physically active was an issue that was frequently discussed. It was apparent that as youth got older, a lack of time to be physically active affected participation. The transition from middle school to high school marked the introduction of time as a negative interpersonal factor of physical activity. Students in grades 9 to 12 frequently commented that kids their age were less active than they were in middle school because of the amount of time required to participate in high school sports, and competing interests such as clubs and other extracurricular activities, schoolwork, and part-time employment. A grade-9 participant commented, “I would have been on the team this year, but I just didn’t have time. I couldn’t make all the practices.” Among many senior high school students (grades 11 and 12), part-time employment emerged as a negative intrapersonal factor of physical activity. Several of the grade-11 and -12 students reported that they no longer had time for physical activity because of work commitments: “I think the problem with people not being physically

active is that they don't have the time. I know lots of people—they come home from school, and then they go to their jobs.” Another senior-level high school student believed that an emphasis on employment rather than activity existed because many youth want to earn spending money: “I think the reason why activity level has dropped so much is because teenagers need to have jobs to try and maintain the lifestyle that everyone wants to have, to get the money they want to spend.” To address this issue, participants frequently suggested that physical activity opportunities need to occur during the school day so that they did not have to schedule one more thing into their busy lives: “It would be cool if they just had an open gym at school three times a week. I am on a pretty tight schedule, but if I had a spare moment, I would go to the gym and play a game of basketball or something.”

Health Benefits of Physical Activity. As they were designing their ideal physical activity opportunities, all of the participants were asked why youth their age would want to participate in their program or activity. Only the students in grades 9 to 12 discussed the health benefits of physical activity as a reason that their friends would participate. Grade-9 and -10 students frequently demonstrated their awareness and understanding of the health benefits of a physically active lifestyle by explaining that they needed to be active to have more energy and less fatigue and to improve their cardiovascular health. In addition, high school students reported that physical activity kept youth busy and dissuaded them from engaging in unhealthy behaviors such as smoking and drugs, “It (physical activity) keeps you busy and away from lots of different things like smoking...it keeps us off the street and not doing drugs.”

Grade-11 and -12 participants discussed not only the current health benefits of physical activity but also the long-term health prevention aspect of physical activity. This age group was very aware of the role that physical activity played in decreasing health problems in adulthood and the economic benefits of physical activity on the health care system. One grade-11 respondent acknowledged the future benefits of physical activity: “It (physical activity) is pretty important because I want to stay healthy and not have problems when I get older...being active—even just walking.” Another participant discussed the impact of physical activity on the health care system: “It's much more expensive on the health care system if you are not physically active. [If you are active], it's very cheap in comparison [to the long-term costs of not being active].”

High school girls frequently mentioned the positive effect of physical activity on physical appearance. Several grade-9 girls emphasized that physical activity helped them to maintain or change their body shape: “If you didn't do any physical activity, you'd just turn into a blob.” Female participants also acknowledged how society's ideal of female appearance drove them to be active. This sentiment was captured by one grade-11 female participant: “I'm not gonna get fat; I wouldn't want to become all chubby and stuff. There are so many people that are fit and active and have good bodies from sports, and I don't want to fall behind.”

Social Factors

Two social factors emerged from the focus group discussions. These included (a) friends and (b) adults.

Friends. Among students of all ages, the social factor most frequently discussed when designing their ideal physical activity opportunity was the importance of being

active with friends. Being with friends was always linked with the intrapersonal factor of fun. Participants stressed that chances to be with friends must be included in all physical activity opportunities. Among participants in grades 7 and 8, having a chance to meet new people and make new friends were the main reasons that they participated in activity. However, the transition into secondary school resulted in a slightly different role of friends with regards to physical activity. It appeared that rather than engaging in activity to meet new people, secondary school youth were making decisions around activity as a result of the influence of their friends. A grade-9 participant reported that she stopped participating in an activity to spend more time with a friend: "I was in dance and I quit for my friend. We never hung out anymore, so I wanted to hang out with her." In contrast, a grade-10 student acknowledged the supportive role that friends played in keeping him active and making activity fun: "Friends will help you get out, I think your friends play a big role in what you do."

Adults. In all of the activity opportunities designed by participants the importance of having an adult present was always discussed. Participants in all grades stressed that an adult was needed to supervise and facilitate physical activity. Characteristics of the adult commonly sought by youth included being young, responsible, fair, and involved (i.e., an active participant within the activity). "We need someone in their twenties—not too old but young enough to have fun and play with us." In addition, several youth discussed the influence of having a high profile or elite athlete drop by for a visit. One grade-10 student recalled the impact of a visit of a professional basketball player to his school:

A point guard that played for a professional basketball team came to our school, and there were 230 kids in the audience....Jaws dropped to the floor just in awe watching this guy dunk the basketball and stuff, and he stayed after, and every kid wanted to shake his hand, pass him the ball and stuff. Take one of those kind of guys and on a Friday night kids are gonna swarm there.

Participants also frequently discussed the important role that coaches played in their decisions to be physically active. When discussing the qualities they desired in a coach, participants stressed that they needed to be knowledgeable and fair. Although numerous participants discussed the positive role that coaches played in their decisions to initiate or maintain physical activity, for some of the participants, the actions of coaches emerged as a source of criticism. This was particularly evident among students in grades 9 and 10, when a large number of young athletes are cut from their secondary school teams. Several youth believed that their coaches based their team selections on whether or not they "liked" them rather than on skill. Their perceptions are evident within the following discussion among two grade-10 students:

C: It wasn't really about going out and having fun anymore. I'm sure (A) could agree with me that it's more who you know and what teams you make, who likes you rather than how good you are.

A: Yeah, it's all who you know and whether the coach likes you.

Environmental Factors

A number of environmental factors emerged from the focus groups. Prominent issues centered on facilities, programs (type of activities), and accessibility.

Facilities. Participants in all grades emphasized that, to increase physical activity levels, there must be appealing and appropriate facilities. This included the need for quality outdoor facilities, aesthetically inviting indoor facilities, the proper maintenance and repair of existing facilities, and a safe environment in which to be active.

Youth often expressed a need for improved outdoor facilities for basketball, skateboarding, and BMX. For example, one grade-7 student discussed the poor outdoor facilities available for basketball: “Better basketball courts are needed around here—you know, just around the community—take a look now and they are all chain-link fence and stuff with no nets and broken cement.”

The proper maintenance and repair of existing facilities and equipment was also an important issue among students in grades 7, 8, and 9. Concern, frustration, and disappointment with the lack of effort and commitment toward maintaining facilities after they had been damaged is evident in the comments of a grade-9 student: “When something gets vandalized...or something is broken, you don’t just leave it, or take it away, or shut down the program—you try and fix it.”

Youth in all grades stressed the importance of a safe environment within and surrounding the physical activity facilities. Participants often discussed the negative impact that fighting, intimidation/bullying, and vandalism had on their desire to participate in physical activity opportunities. Again, discussions turned to the importance of adult supervision. Youth proposed that an adult would act in a “bouncer” role by immediately removing youth who were causing problems. They felt that if this was done, the youth who attended the activity could feel safe and then he or she would encourage more people to attend.

A grade-7 respondent described the safety concerns associated outside the facility in his neighborhood: “People don’t come [to the program discussed] because it’s at night and too dark for some of the little kids to walk and their parents don’t want to come—it isn’t real safe to walk through the pass-way.” A grade-11 participant emphasized the need for adequate lighting outside the facility to improve the safety of anyone walking from the community facility. Without adequate lighting, the respondent perceived a threat to the youth’s safety if walking home alone.

There’s stuff you can’t do by yourself. If you’re out walking, there are people getting jumped. I think we just need to be sure that the place is a safe place to go, and there is [sic] good lights all around it, and it isn’t in some hole somewhere so, you know, the kids that go there don’t bother the people who live around it. It has to be safe, you know.

Programs. When the participants began to offer specific examples of activities they would offer, it became apparent that middle-school students and high school students preferred different types of activity programs and opportunities. Students in grade 7 and 8 primarily discussed a need for more community and school activities for their age group. The activities that these students designed were often highly organized. In comparison, the transition into high school appeared to introduce a need for decreased competition and more noncompetitive, less structured type of activities and programs. This shift in program offerings was particularly important during the grade 9 and 10 years, as this seemed to be a time when a number of youth elect not to try out or are cut from high school teams. It was apparent that the selection process associated with high school teams often left a large number of youth (those who are not selected or those electing not to endure the selection process) seeking alternative ways to stay active. Several grade-9 participants lamented the lack of opportunities to try new activities and be active in a noncompetitive environment, as shown in the following dialogue:

- S: Kids need to have a chance to try different and new things.
 M: You need to have an option, not just competitive sports.
 R: Have some fun leagues—most stuff is too competitive—if you're not good, you're not gonna go. And I think that holds a lot of people back.
 A: I know a lot of people who quit because they don't like the competition. Cause lots of people aren't competitive.

The programming suggestions by students in grade 11 and 12 were similar to that of their grade 9 and 10 peers and centered on activities that were less structured, less competitive, and lifelong in nature. Participants in all grades stressed the importance of being able to choose how intensely youth wished to be involved in an activity. The importance of respecting diverse levels of fitness and interest was repeatedly emphasized. Comments such as “don't push them” and “let them go at their own rate” were present in all discussions with high school students.

Accessibility. The importance of being able to easily access physical activity opportunities was discussed among participants in all grades. All youth stressed that to increase physical activity among their friends, the opportunities to be active must be close to where they lived. A lack of transportation to facilities in their city was frequently cited as a reason that they and their friends were not active: “Taking a bus or getting a ride with some of my friends or even my parents wouldn't be a problem [if it was in the community], but if it was all across town, then that might be more of a big deal.”

The need to have reduced fees or no fees for physical activity programs was emphasized by all participants. Many youth reported that their parents were not able to pay for many of the activities currently offered in the city. For example, a grade-8 student offered this comment illustrating the importance of low cost and close proximity for the participant and his young sibling to be active: “My mom can't afford for me to do too much—but if it was right here and I could just walk and if I could bring my little sister sometime—that would be awesome.” A grade-10 student commented, “I think it is getting too expensive to play—like hockey is \$600. I just want to get out and play with my friends, but the cost is too high.”

DISCUSSION

Using a qualitative ecological framework the present study identified a wide range of factors (three intrapersonal, two social, and three environmental) influencing youth physical activity. The emergence of intrapersonal, social, and environmental factors lends support to the importance of an ecological approach to understanding physical activity in youth (Sallis & Owen, 1999; Bauman, Sallis, Dzewaltowski, & Owen, 2002). In addition, the results of this study offer evidence to encourage the future use of qualitative research to complement the predominantly quantitative present body of physical activity literature.

Three intrapersonal factors emerged as being important to increasing the physical activity patterns of youth. In the present study, a youth's perception of fun was often linked to their perceived competence to participate in an activity. A number of researchers have supported the importance of fun in relation to youth physical activity and described fun as the balance between an individual's skill level and the challenge of an activity (Carmichael, 1994; Mandigo & Thompson, 1998; Petlichkoff, 1992).

Comments by the participants and previous research support the premise that we need to provide increased opportunities for youth to experience fun by offering less structured and less competitive physical activity environments that provide them with an opportunity to modify their environment so that the challenges match their individual skill level (Chalip, Csikszentmihalyi, Kleiber, & Larson, 1984; Mandigo & Thompson, 1998).

Consistent with previous literature, the intrapersonal factor of time emerged as a significant barrier to physical activity (Mulvihill, Rivers, & Aggleton, 2000; Tappe, Duda, & Ehmwald, 1989). Although time has been identified in literature (Bauer et al., 2004), the results from this study suggest that part-time employment among secondary school youth is a major reason for decreased involvement in physical activity. During the past 20 years, there has been a 27% increase in the number of youth working part-time during their high school years (Statistics Canada, 2004). Thus, the importance of offering more flexible, less structured physical activity opportunities during the school day might offer working youth opportunities to be active daily but not require the time commitment of organized, interschool sports and activities.

The lack of awareness of the benefits of physical activity among students in grades 7 and 8 may suggest that middle-school educators should work to ensure that their students understand that leading a physically active lifestyle can benefit all aspects of their health and well-being. Such efforts may counter the message that physical activity is solely for weight control, which was expressed by many of the high school students in this study. It is possible, however, that because the health benefits of physical activity were not discussed by this age group, it might be better for health educators to emphasize other reasons for being physically active, such as the opportunity to be active with friends and have fun in a physical activity setting. Although both educational strategies merit consideration, further research is needed to determine which approach would be most effective in motivating middle-school youth to become and remain physically active.

Friends and adults were identified as two primary social factors impacting physical activity among youth. Although friends have been identified in the literature as one of the most common cues for the prediction of physical activity participation (Tergerson & King, 2002) and motivation to be active (Duncan, 1993; Smith, 1999), little research on peer relationships in the physical domain has been conducted (Smith, 2003). The findings of the present study offer preliminary evidence that the role of friends in relation to physical activity may change depending on a youth's age and grade. Grade-7 and -8 students were motivated to engage in physical activity to make new friends, whereas secondary school youth identified friends as being influential in their decision to maintain activity. Among all participants, the presence of an adult as an activity supervisor and supervisor served as valuable role models to offer motivation (Tergerson & King, 2002) and provide support for youth to remain active (Garcia, Pender, Antonakos, & Ronis, 1995). Sturdevant and Spear (2003) determined that, for many young people, adolescence represents a search for healthy role models, and this was evident in the current findings. Thus, health practitioners should be cognizant of the important role of both friends and adult role models in keeping youth active.

It is interesting to note that few participants specifically discussed the role that parental influence and support played in their participation in physical activity. This runs counter to numerous studies that have determined that parental support of physical activity is positively associated with youth physical activity patterns (Sallis et al., 2000; Trost et al., 2003; Welk, Wood, & Morss, 2003). It is possible that the moderators did not sufficiently probe the notion of a supportive adult. Perhaps if they had

asked for more specific examples, the participants may have reported that their parents could assume the role they wished adults to play in the provision of physical activity opportunities.

The physical environment has been found to be an equally important domain in the facilitation of physical activity (Wendel-Vos et al., 2004). The present study identified three environmental factors impacting a youth's physical activity (facilities, programs, and accessibility). Empirical support can be found for the specific factors identified by youth in relation to the physical environment. Youth expressed a need for high-quality outdoor facilities (Sallis et al., 2001), aesthetically inviting indoor facilities, proper maintenance and repair of existing facilities (Sallis et al., 2001), and a safe environment in which to be active (Gordon-Larsen, McMurray, & Popkin, 2000). In terms of programming, offering a variety of both structured and unstructured physical activity opportunities appeared to be important, particularly for high school youth. When considering these findings, schools and local community centers should focus on providing a range of activities including unstructured, lifelong activities (e.g., swimming, jogging, biking, and rollerblading). Offering an array of activities will not only support the establishment of patterns of health behavior in youth (Corbin, 2002) but may also provide opportunities for high school youth no longer participating in high school sports. Further support for the necessity to provide multiple activity options for youth is highlighted by research that found a positive association between a wide range of program offerings and the activity patterns of adolescents (Gordon-Larsen et al., 2000). In addition, the participants in a study by Mulvihill and colleagues (2000) reported that youth will be more physically active if they can choose from an array of physical activity options. A final environmental factor identified by many of the youth involved accessibility in terms of reduced cost (of activities and transportation) and the proximity of facilities. The cost of the activity and related expenses such as travel have been found to be a barrier hindering the regular participation in physical activities for many youth (Mulvihill et al., 2000). When municipal administrators are making decisions regarding the placement of facilities, accessibility in terms of cost and proximity should warrant strong consideration.

An area of research that emerged from the findings that may provide further insight into the low levels of adolescent physical activity participation is the transition from middle school into high school. The present study found preliminary evidence to suggest that this specific time period may impact the opportunities to be active (e.g., getting cut from a high school team), the perceived health benefits of physical activity, the role of friends in being active, and the amount of perceived time available for structured physical activity (e.g., because of part-time employment). Within the literature, this transition has been associated with changes in peer groups and environment, increased stress, threats to self-esteem, and lowered social support (Garcia, Pender, Antonakos, & Ronis, 1998). Yet, despite increasing attention to school transition as an important academic and social event for adolescents, the positive and negative implications of this transition for health beliefs and health-promoting behaviors such as physical activity have seldom been studied (Garcia et al., 1998). Additional research is necessary to explore this critical time period as it relates to physical activity behavior.

One of the strengths of the current study was the large sample size ($N = 160$) that allowed us to gain an understanding across a wide range of grades. Currently within adolescent research, youth are often clustered together, which limits such an examination across a broad range of ages and grades. Although similarities were found among youth in relation to ecological factors impacting their physical activity (e.g., fun,

friends, facilities), several differences emerged across the grade levels (e.g., part-time employment a factor for grades-11 and -12 youth). These findings suggest that future research should be conscious of the potential differences among youth and, when possible, continue to study specific segments of this population. A second strength of the study involved the use of qualitative methodology. The focus group interviews not only identified the ecological factors impacting youth's physical activity, but they also provided opportunities for youth to offer strategies to overcome perceived barriers (e.g., more unstructured programming) to being more active.

IMPLICATIONS FOR PRACTICE

Studies investigating the factors that may be important for youth physical activity are necessary to answer basic questions about likely influences on youth behavior as well as helping to inform the design of future intervention studies (Sallis, Taylor, Dowda, Freedson, & Pate, 2002). The present study tried to address both issues through a qualitative exploration of the intrapersonal, social, and environmental factors influencing youth's physical activity. A number of salient factors within each component of the ecological framework were identified as being important to youth physical activity. Although recognizing the strengths of qualitative inquiry, this study is not without limitations. Specifically, we acknowledge potential limitations concerning the sample and methods used. The findings of this study are limited to the sample population and the environments where the participants lived, worked, and played. Every effort was made to offer rich descriptions of the thoughts and experiences of the participants in the hope that those reading this article could come to an understanding of the factors influencing the physical activity of these young people. With such an understanding, readers might be able to recognize situations that are parallel to their own and apply the findings to their work where they deem appropriate (Locke, 1989). The second limitation of the study involved the selection of the study participants. The recruitment of the sample and the focus group interviews were conducted during school hours. As a result, students who were frequently absent may not have had an opportunity to be selected. The perceptions of the frequently absent students in relation to the factors influencing physical activity may have been significantly different. In addition, it may also have been beneficial to include the perspectives of teachers, school nurses, guidance counselors, and other school staff members. The present study did not transform the valuable knowledge shared by the youth into an intervention targeting the salient factors shared by the participants. Future research that allows youth to design, implement, and evaluate their "ideal" physical activity program is encouraged.

The young people in this study repeatedly told us that physical activity must be fun, and an integral component of fun is feeling both competent and confident in a physical activity setting. Thus, practitioners are encouraged to offer opportunities for young people to learn the skills needed to participate in a variety of physical activities. This is best done through the design and implementation of developmentally and instructionally appropriate physical activity experiences. Such experiences acknowledge and accommodate a variety of individual characteristics such as developmental status, previous movement experiences, age, and fitness level (Graham, Holt-Hale, & Parker, 2004). In addition, to reduce the stress of not feeling "good enough" to participate, opportunities to choose the intensity of competition should be provided. For example, participants could choose to participate in a fast-moving, highly competitive situation

or one that is slower paced, less competitive, and more recreational in nature. Because of the expressed demands of time and finances, activity opportunities should ideally occur at convenient times (such as before or immediately after school) in settings close to where youth live. This may require enhanced partnerships between schools and community organizations. In addition, a critical look at the school-based activity opportunities that are scheduled before and after school (i.e., athletic teams) is needed. To encourage more youth to be active, the preferred scheduling times that school athletic teams often enjoy may need to be offered to recreational and drop-in types of programs. The adult needed to supervise and run these types of experiences should have expertise in delivering programs that are attractive to a wide range of skill levels, be willing to join in the activity, and listen to the needs and wishes of young people. Because of the important role that friends play in the physical activity choices of youth, provision should be made for youth to be active with their friends. Programs that encourage youth to drop in and be active, without the rigors of team selection and scheduling, should be provided. Discussions surrounding the perceived health benefits of physical activity raise several issues. Female high school students frequently identified improved physical appearance as the primary benefit of physical activity. Although physical appearance has been identified as a primary adolescent motivation to exercise (Tergerson & King, 2002), their emphasis on "weight loss" and "staying in shape" is of concern. Too often young women are encouraged by the media, friends, and significant others to engage in a never-ending "battle" with their bodies (Wolf, 1991). Physical activity is often seen as a valuable weapon in this battle. Thus, health practitioners and educators are encouraged not to focus their physical activity promotion efforts solely on weight management; a conscious effort to emphasize many of the other present and long-term benefits of physical activity as they relate to health is encouraged. In addition, every effort should be made to create environments and interventions that help young women feel comfortable with their body shape and size (Friedman, 2002; Gibbons, Higgins, Gaul & Van Gyn, 1999; Humbert, 1995). The establishment of a safe and comfortable environment for youth to be active is critical if they are going to initiate and maintain activity. It is very apparent that youth wish to attend programs where they "feel safe, find value, and feel valued" (Gibbons et al., 1999, p. 18). The creation of such an environment will require practitioners to consider the design and maintenance of facilities, the programs delivered, and the attitudes of those in charge. It is essential that young people feel welcome in physical activity settings regardless of their body shape, abilities, and backgrounds.

We hope that the findings of this study offer health practitioners, physical educators, coaches, and program coordinators assistance in the design of successful physical activity interventions. If the physical activity levels of young people are going to be increased, research must continue to address the complex array of factors that influence their physical activity behaviors.

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