

Physical Activity for Adolescents Living in a Disadvantaged Neighbourhood: Views of Parents and Adolescents on Needs, Barriers, Facilitators, and Programming

Julie Beaulac
University of Manitoba

Daniëlle Bouchard
University of Ottawa

Elizabeth Kristjansson
University of Ottawa

Abstract. Physical activity promotes physical, psychological, and social well-being for young people. However, socio-economically disadvantaged adolescents participate significantly less in physical activity. Three focus groups were held with disadvantaged adolescents and parents to better understand factors related to participation in physical activity and to successfully implement and sustain a new program for such young people in one target community in Ottawa. One focus group comprised of seven male adolescents, another comprised of 10 female adolescents, and the third comprised of 13 mothers. The participants identified a range of constraints and facilitators to youth physical activity. They also raised important considerations for the implementation of a new program. The most common theme was the need for more accessible physical activity programming that was fun, safe, and relevant for young people. Implications of the focus group findings for implementing physical activity programming in disadvantaged neighbourhoods are discussed using the newly implemented community-based hip-hop dance program as an example.

Address all correspondence to: Dr. Julie Beaulac, Department of Clinical Health Psychology, Faculty of Medicine, University of Manitoba and Shared Mental Health Care, Winnipeg Regional Health Authority, 771 Bannatyne Avenue PZ-345, Winnipeg, MB R3E 3N4. Telephone: (294) 787-7687; Fax: (204) 787-3755; Email: jbeaulac@exchange.hsc.mb.ca.

Leisure/Loisir, 33(2): 537-561
© 2009 Ontario Research Council on Leisure

Keywords. physical activity intervention, community-based, disadvantaged community, young people, barriers and facilitators to physical activity

Résumé. L'activité physique favorise le développement physique, psychologique et le bien-être chez les adolescents. Le désavantage socio-économique défavorise de façon significative l'activité physique chez les adolescents. Trois groupes de discussion reliée aux adolescents défavorisés ont été organisés pour mieux comprendre ces facteurs reliés à l'activité physique et pour mettre en œuvre avec un nouveau programme de soutien pour jeunesse dans une communauté ciblée, à Ottawa. Trois groupes de discussion composée de sept adolescents, un autre composé de dix adolescentes, et le troisième, composés de treize mères ont été inclus dans cette recherche. Les participants ont identifié une série de contraintes et de facilitateur d'activité physique. Ils ont également soulevé des considérations importantes pour la mise en œuvre d'un nouveau programme de danse hip-hop. Le thème le plus commun était la nécessité d'une programmation plus accessible, amusante, sécuritaire et pertinente. Les implications de ces conclusions pour la mise en œuvre de programmes d'activité physique comme la danse hip-hop dans les quartiers défavorisés sont discutées.

Mots-clés. intervention d'activité physique, à base communautaire défavorisée, les jeunes, les obstacles et les facilitateurs d'activité physique

Participation in physical activity is important for the positive development and well-being of young people (Beauvais, 2001; Mo, Turner, Kreski, & Mo, 2005; Steptoe & Butler, 1996). Unfortunately, however, there is a significant decline in physical activity during the period from childhood to adolescence (Aaron, Storti, Robertson, Kriska, & LaPorte, 2002). Moreover, the majority of Canadian young people are not sufficiently physically active to experience health and social benefits (Canadian Fitness and Lifestyle Research Institute (CFLRI), 2004; Wharf Higgins, Gaul, Gibbons, & Van Gyn, 2003). The problem of physical inactivity is even greater for female adolescents and for young people who are socially or economically disadvantaged (Burton, Turrell, & Oldenburg, 2003; Taylor, Baranowski, & Young, 1998). For example, data from the 2003 Canadian Community Health Survey indicate that low income young people were at a 30% higher risk of being physically inactive (Mo, Turner, Kreski, & Mo, 2005).

Evidence on factors related to physical activity for young people can be helpful in understanding why certain groups of youth have lower rates of participation in physical activity. There are many models that have been used to try to understand differences in health behaviours such as physical inactivity, most of which have focused on individual-oriented factors (King, Stokols, Talen, Brassington, & Killingsworth, 2002). However, overall, the literature on physical inactivity is consistent with a social-ecological framework (King et al., 2002) and is increasingly

supporting the need to also consider contextual factors (Grzywacz & Marks, 2001).

Social-ecological models consider both individual and contextual factors related to health behaviours. The nature of these influences is interactive and transactional. Examples of individual-level factors include perceived ability, attitudes, beliefs, and knowledge. Contextual factors range from influences within an individual's immediate surroundings (e.g., home) to influences that are more distal (e.g., transportation design, political conditions of society) (King et al., 2002; McLeroy, Bibeau, Steckler, & Glanz, 1988; Stokols, 1996). One example of a social ecological model is that used by McLeroy and colleagues (1988). This model includes five levels of influence: intrapersonal, interpersonal, organizational, community, and public policy. The intrapersonal level includes demographic, psychological, and behavioural characteristics that are within an individual. Some commonly found intrapersonal correlates of participation in physical activity for young people include age (-), sex (male), ethnicity (white), perceived physical competence (+), time (+), knowledge of physical activity (+), self-esteem (+), motivation (+), previous physical activity (+), and school attendance (+) (Carron, Hausenblas, & Estabrooks, 2003; Norman, Schmid, Sallis, Calfas, & Patrick, 2005; Sallis, Prochaska, & Taylor, 2000; Wharf Higgins, Gaul, Gibbons, & Van Gyn, 2003). The next level, the interpersonal level, refers to the influence of families, friends, and one's social network more generally. Interpersonal factors such as parental barriers (-), support from significant others (+), social norms (+), household income (+), and parental education (+) have been linked to adolescent participation in physical activity (Norman et al., 2005; Sallis et al., 2000; Wharf Higgins et al., 2003).

The top three levels of the model, organizational, community, and public policy, all refer to environmental or contextual influences on behaviour. While some ecological models have a separate level of influence for physical environment, factors related to the natural environment (e.g., climate, geography) and to the constructed environment (e.g., transportation, recreation infrastructure) (Sallis & Owen, 1999), McLeroy and colleagues (1988) include these factors within the three contextual levels of their model. Important organizational influences for younger people include places such as schools and community centres, while community influences refer to relationships and networks between multiple organizations. Insufficient funding for programs (-), transportation problems (-), program fees and equipment costs (-), accessibility and

quality of facilities (+), community programs (+), culturally specific activities (+), perceived safety of environment (+), attractiveness of scenery (+), presence of sidewalks (+), weather (+), traffic (-), and place of residence (urban) have all been linked to participation in physical activity (Brownson, Baker, Housemann, Brennan, & Bacak, 2001; Burton et al., 2003; Carron et al., 2003; Fleury & Lee, 2006; Gyurcsik, 2006; Humbert, 2006; Humpel, Owen, & Leslie, 2002; Kristjansdottir & Vilhjalmsson, 2001; Norman et al., 2005; Sallis et al., 2000; Welk, 1999; Wharf Higgins et al., 2003). Limited research has been conducted on policy level influences of physical activity; however, suggested factors include policies related to zoning and land use, building requirements, and funding for active transportation and recreation infrastructure (Brownson et al., 2001; Heath et al., 2006; Sallis, Bauman, & Pratt, 1998).

At the same time that individuals from lower socio-economic status (SES) experience greater constraints due to lower incomes, they also perceive greater social and environmental constraints to participating in physical activity as compared to individuals of higher SES (Chinn, White, Harland, Drinkwater, & Raybould, 1999). Other research has supported this perception, finding environmental inequalities in access to physical activity resources by neighbourhood level of socio-economic status, to the disadvantage of poorer neighbourhoods (Macintyre, Maciver, & Sooman, 1993; King et al., 1995). Furthermore, evidence suggests that discrimination and perceived acceptance also influence disadvantaged populations' participation in different types of physical activities (Philipp, 1999). For instance, there is evidence of gendered recreational space, such that girls feel unwelcome or unsafe in those areas perceived to be controlled by boys (Karsten, 2003; Tucker & Matthews, 2001). Boys tend to play in larger groups than girls, and as a result, dominate larger areas of space; this can be particularly problematic in places where recreational space is limited (Karsten, 2003).

Despite the evidence highlighting the importance of environmental factors in contributing to physical inactivity, health promotion and intervention efforts have generally targeted intrapersonal factors related to behaviour change (Giles-Corti & Donovan, 2002; Schooler, 1995). These approaches have been met with only limited success (Sallis & Owen, 1997), particularly for disadvantaged populations who face greater environmental constraints (Gauvin, 2003; Stokols, 1996). It is becoming increasingly apparent that interventions need to go beyond individual behaviour change to target multiple levels of influence, such as foster-

ing social networks and removing environmental constraints to participation in physical activity (Brodersen, Steptoe, Williamson, & Wardle, 2005; Gauvin, Lévesque, & Richard, 2001). This need is particularly important as there is greater potential for impact with increasing levels of influence (Stokols, 1996).

Research has linked faulty and inadequate theory to poorer intervention outcomes (Domitrovich & Greenberg, 2000; Fitzpatrick, 2002). Therefore, in order to successfully implement a new physical activity intervention in a disadvantaged community, this study sought to first conceptualize the new intervention. Initially, a thorough review of the physical activity intervention literature was conducted, which highlighted the core elements of effective youth programming (e.g., Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004; Larson, 2000; Roth, Brooks-Gunn, Murray, & Foster, 1998). During this process, a community-based hip-hop dance intervention was identified as a potentially relevant option for the target community. The literature supported this intervention as it fit the criterion of a structured voluntary activity (SVA), an activity that is led by positive adult role models, that youth are likely to find intrinsically motivating, and that would require significant effort over a period of time (Larson, 2000). SVAs are a type of leisure activity that has been linked to particular benefits for positive youth development (Larson, 2000; Larson & Seepersad, 2003). Moreover, structured physical activities tend to be preferred by Canadian adolescents and especially female adolescents (Craig, Cameron, Russell, & Beaulieu, 2001). Other reasons in support of hip-hop dance as a type of SVA are that it is currently popular with younger people of diverse socio-cultural groups (Grieser et al., 2006), that it does not require special equipment or abilities, and that it has the potential to foster social interaction rather than competition, all elements that have been linked to effective youth programming (Anderson-Butcher, 2005; Anderson-Butcher, Cash, Saltzburg, Midle, & Pace, 2003).

Community experience and research suggest that factors related to participation in physical activity for a lower-income, multicultural neighbourhood may differ than those for the more commonly studied white middle-class neighbourhood (Johnson, 2000). Currently, there is limited research on this issue, particularly from the perspective of youth (Humbert et al., 2008). Moreover, past research has emphasized the importance of involving the community prior to implementing new interventions (Lee, 2005). For these reasons, the needs of the target community were verified through focus groups with young people and par-

ents/guardians from the target neighbourhood. The objectives of the focus groups were: (1) to develop a better understanding of the barriers and facilitators to adolescent participation in physical activity in general and related to the implementation of a new program in their community; and, (2) to identify preferences and concerns regarding the characteristics of the new physical activity program. The findings were then used to produce the planned physical activity intervention according to the needs and interests of the target community.

This study represents a collaborative effort between three not-for-profit organizations and an academic institution. The not-for-profit organizations include a community health centre in the target neighbourhood (South-East Ottawa Community Health Centre—SEOCHC), an organization that uses hip-hop dance as a youth outreach tool (Culture Shock Canada) and a City of Ottawa community centre that provided free space for the new program (Heron Road Community Centre). The study questions and methods were developed in consultation with community partners.

Method

Participants: Recruitment and Setting

Three separate focus group discussions were conducted with parents/guardians, female adolescents, and male adolescents from target lower-income, multicultural neighbourhoods in South-East Ottawa. A recent report indicated that the target neighbourhoods of South-East Ottawa have a higher proportion of socially and economically disadvantaged residents and 8 to 10% more youth relative to the general population in the city of Ottawa. The overall health of young people is also poorer (Social Planning Council of Ottawa, 2005).

Young people between the ages of 11 and 15 years and parents/guardians were recruited from pre-existing groups with the assistance of SEOCHC and partnering organizations. Adolescent consent forms were distributed one week prior to the focus groups to allow young people to obtain parent/guardian consent. For their participation, adolescent participants received a \$10 movie pass and parents received a \$10 grocery voucher. Snacks and beverages were also provided during youth sessions.

Parent Group

Parent/guardian participants were recruited in-person through a weekly multicultural dinner at a Community House in South-East Ottawa. One

week prior to conducting the focus group discussion with parents, two researchers visited the community house to participate in the dinner. The researchers briefly introduced the study and sought their interest in the focus group the next week.

Thirteen female parents/guardians participated in the focus group after a weekly dinner. A male community facilitator was present during the discussion. Although we were not able to obtain socio-demographic information directly due to time and literacy constraints, basic information on the characteristics of the parent group was obtained through observation and discussion with the community facilitator. All parents represented disadvantaged cultural groups originally from outside of Canada (e.g., Iraq, Somalia, West Indies) and none of the parents spoke English as their first language. Most parents had one or more teenagers.

Female Adolescent Group

This group was recruited from a weekly girls' night at a different Community House in South-East Ottawa with the assistance of a youth co-ordinator. Ten female adolescents participated in a focus group discussion at the Community House during one of these nights; a female community facilitator was present during the discussion. Girls ranged in age from 11 and 14 years; six reported their race/ethnicity as Black, three reported it as Arab/West Asian, and one reported it as other. Five of the 10 were born outside of Canada (e.g., Africa, Middle East) and most were living in subsidized housing.

Male Adolescent Group

This group was recruited from a free basketball drop-in at Heron Road Community Centre with the assistance of a youth co-ordinator. Seven males participated; they ranged in age from 12 and 14 years; all reported their race/ethnicity as Black. Five of the seven were born in Canada; the two others were from Africa and the Middle East. Young people participating in the basketball drop-in are predominantly lower-income living in subsidized housing.

Procedures and Measures

This study received ethical approval from the University of Ottawa. Focus group discussions were conducted in English during April and May 2006 and lasted approximately one and a half hours per group. The discussions were moderated by the first author (JB) with assistance from the second author (DB). Two moderators were used to reduce the potential for bias and enhance the trustworthiness of the findings. Discus-

sions were recorded by digital recorder and detailed notes including both verbal and non-verbal observations were taken by the assistant moderator. Community facilitator involvement during the focus group discussions was minimal and the results are therefore not considered reflective of their opinions.

The moderator first explained the overall purpose of conducting the study and briefly defined physical activity. Participants were advised that all information they shared would be confidential; the limits to confidentiality and anonymity due to the group format were highlighted. The moderator then obtained written consent from participants (in the case of the youth participants, collected consent forms with their parent's signature). Next, adolescent participants were asked to complete a brief demographic and information questionnaire (5 to 10 minutes). The focus group procedures were then explained and the group discussion conducted. Areas explored included: perceived benefits of physical activity for young people, barriers and facilitators to adolescent participation in physical activity and structure of a new physical activity program in their community, including interest in hip-hop dance as a potential physical activity program. Questions were carefully prepared and delivered in a set sequence, in an open-ended manner. The main advantage of using this strategy is the enhanced consistency of delivery across the multiple focus groups and the enhanced quality of analysis (Krueger, Morgan, & King, 1998). However, flexibility within the protocol was permitted when relevant to the research questions. At the end of the session, participants received a debriefing form, a physical activity resource sheet, and compensation. All participants were also given the opportunity to request a copy of the report on the focus group discussions. Following each focus group discussion, post-focus group debriefings were held between the focus group moderator and the assistant moderator during which time general observations and preliminary themes were discussed and recorded. In addition, the researchers recorded their observations of the neighbourhoods.

Analysis

After each session, JB and DB listened to the recording to capture any pertinent details and quotations missed during the session. These details were added to the notes taken during the focus groups in order to create an abridged transcript that would better ensure the reliability of the focus group discussion data (Krueger et al., 1998). Data from the three focus groups were first analyzed separately by group using a modified

grounded theory approach. The analysis involved a content and theme analysis using an inductive process of identifying themes from the data (Strauss & Corbin, 1998). The first step of the analysis involved familiarization with the data by reviewing the transcripts. Preliminary themes and ideas were noted during this stage. Following this, transcripts were separated into single meaningful units or chunks of information. Two independent reviewers (JB and DB) then established themes or codes by hand, including no code, one code, or multiple codes. A topic was considered a theme when it was mentioned by several participants and considered sufficiently meaningful in light of the research questions and context. Themes were then independently grouped into categories (see Morse, 2008). After discussion, consensus on the final themes and categories were reached. As a quality check, the third author (EK) was then consulted who reviewed all of the coded transcripts; this led to some minor modifications in the organization of the themes within the different categories. Subsequently, themes were compared across focus groups, capturing similarities and differences across the three groups. Quotations were also selected from the abridged transcripts to illustrate the themes.

Results

The analysis revealed 10 key categories from the adolescent focus group discussions and nine key categories from the parents' focus group discussion. Seven categories were common to parent and adolescent groups, including: (1) benefits of physical activity; (2) barriers and facilitators to participation in physical activity; (3) type and structure of physical activity; (4) the appeal of a hip-hop program; (5) preference for either a single-sex or co-ed program format; (6) timing of the program; and (7) program and/or instructor characteristics. Furthermore, three other categories were common to both girls and boys, including: (1) program observers; (2) age range of program participants; and (3) frequency of program. Parents, on the other hand, spoke of two different categories: (1) the need for supervision; and (2) a distrust of the community. Reasons for differences in categories across the adolescent and parent groups appeared to be the result of different concerns related to a physical activity program. The male and female young people matched on overall categories; however, there were numerous differences in themes. The themes are presented by category within two sections in response to this study's two main objectives.

Participation in Physical Activity: Benefits, Barriers, and Facilitators

All of the participants viewed youth involvement in physical activity positively and described a range of physical, psychological, and social benefits. In general, the female youths placed less emphasis on the physical and external benefits (e.g., winning, “bragging rights”) than the male youths. For instance, one girl described a psychological benefit, saying that “It (physical activity) calms me down.” In contrast, the parents emphasized the social benefits: “At this age they are very, very active, you know, so we have to just think that if these kids are spending their energy to sports they don’t spend their energy to different things [*sic*].”

The participants had a great deal to say regarding the factors related to youth participation in physical activity. Barriers refer to those factors which make participation in physical activity more difficult, while facilitators refer to those factors which encourage participation. Some factors were reported as influencing physical activity in both negative and positive ways. All groups related a number of barriers to participation in physical activity ranging from every day life (e.g., school), technology (e.g., computers, TV), to safety of the physical environment and neighbourhood. The participants mentioned fewer facilitators than barriers, one common example being positive social support for participation in physical activity (see Table 1 for more details).

Table 1
Barriers/Facilitators for Physical Activity

Parents	Female Young People	Male Young People
1. Accessibility (-)	1. Accessibility (-)	1. Accessibility (-)
2. Social support (+)	2. Social support (+/-)	2. Social support (+/-)
3. Technology (-)	3. Technology (-)	3. Technology (-)
4. Every day life (-)	4. Every day life (-)	4. Every day life (+/-)
5. Personal factors (-)	5. Neighbourhood/safety (-)	5. Neighbourhood/safety (-)
	6. Independence (-)	6. Weather (+/-)

Note. + = Barriers; - = Facilitators. Barriers/facilitators listed in no particular order.

There was consensus among all of the young people and parents that accessibility was an important barrier to adolescent participation in physical activity. The female youths highlighted concerns about the limited activities available in their neighbourhood, “When the (basketball) court is taken over (by boys), there is nothing else just go back in to watch TV.” In addition, the girls described having to play games in a

pile of rocks as a result of there being no grassy areas available to them nearby. One emphasized the strength of the problem when she said, "It feels like a dead neighbourhood." The male adolescents also recounted difficulties accessing affordable physical activity programs. For instance, gym capacity issues limited access: "If the gym is full they will not let you in—we only have one gym." In addition, a few males suggested the need to "make it (the program) cheap" or free in order for young people such as themselves to be able to participate. A female echoed this concern by saying that, "some people are kind of poor so they are not going to come (if the program is not free)." In general, all of the young people agreed that cost was an important barrier to participation in physical activity. They also expressed concern regarding accessing appropriate transportation to facilities. For instance, when asked about participating in a potential physical activity program, one girl commented, "How are we going to get there, tell me that?" Another girl explained, "If it's really far then people will not bother going." In addition, the parents described limited availability of affordable programs, limited diversity and cultural and age appropriateness in available programs, and difficulties with transporting their adolescents to programs outside of the neighbourhood. One parent's frustration was evident when she expressed, "there is nothing there!"

All of the participants described social support (or lack thereof) as an important factor in physical activity. The girls described the influence of peers and parents as mostly negative, whereas the boys described the influence as being mixed and the parents viewed social support as a positive influence for youth participation in physical activity. For instance, the girls and boys expressed concern regarding lack of parental and peer support for their participation in physical activity. According to one boy, "It kind of helps when your parents are active too." A girl stated, "They (parents and friends) keep me back." In contrast, the parents indicated that they were supportive but emphasized the importance of peers over parental support.

Technology and everyday life were commonly described by all of the groups as constraining youth participation in physical activity. Examples of such technology included television, mobile phones, computers, and the internet. The accessibility of technology in young people's lives combined with the inaccessibility of physical activity resources and programs were viewed as barriers to being physically active. In terms of everyday life, school, homework, and daily routines were similarly viewed as barriers to physical activity by all groups, with only one male

youth indicating that physical education at school facilitated physical activity. One difference between groups was that the girls described chores and other responsibilities as getting in the way, whereas the boys and parents did not talk about this barrier.

A difference in perceived barriers between the young people and the parents was that many of the female youths stressed the importance of having independence to participate in physical activity, but felt constrained due to their own and perceived parental concerns about neighbourhood safety. For instance, some of the girls reported safety concerns related to the physical environment (e.g., broken glass on the ground, loose dogs) and neighbourhood, whereas quite a few of the boys expressed concerns related to the social environment, such as the concern that they "can get in trouble outside." Some of the male youths also described the winter weather as a significant constraint and referred to it as "basically three months of doing nothing." In contrast, many of the parents mentioned laziness and poor sense of responsibility as barriers to adolescent participation in physical activity whereas the young people did not mention such constraints.

Characteristics of the New Intervention: Preferences and Concerns

In terms of the type and structure of physical activity, the girls and parents expressed preferences for a broader scope of activities than the boys, with an emphasis on structured group activities. In contrast, the boys enjoyed more traditional sports and exercise and also expressed the importance of an activity that was relevant for their age and interests. The parents expressed more ideas related to the structure and purpose of physical activity. In particular, some described wanting culturally appropriate activities for their young people that involved working toward a goal with older positive role models.

When hip-hop dance was suggested, all of the groups found this appealing. One male youth stated, "A lot of people are interested in the hip-hop culture, so they would be interested in coming." The female young people were almost uniformly excited by the idea of a hip-hop dance program in their community, and the parents also expressed a high level of interest in hip-hop dance. One parent indicated, "For me, I think it's great because that's how they express themselves."

Despite a general approval for a hip-hop dance program, some concerns were mentioned by both the male youths and parents. For instance, some of the male adolescents expressed concerns related to parental

approval due to religious reasons and/or indicated that some boys may be too shy to participate in a dance program. Overall, the male youths also seemed to be more interested in other types of physical activity. Despite the concerns described by the boys group, six out of the seven indicated that they would be interested in a hip-hop dance class. A few parents also expressed disapproval of a dance program of any kind, regardless of whether the male and female young people were separated. Finally, while the boys emphasized the importance of good music at a hip-hop program, the parents expressed concern related to appropriate choice of hip-hop music.

Another major finding was that almost all of the girls indicated a strong preference for a girls-only program, whereas the boys were mixed. Most of the girls were concerned that the boys would tease them. The parents in favour of a hip-hop dance program, on the other hand, indicated a strong preference for a co-ed program format. "We are neighbours. We like to see our children come to relationships like brothers and sisters," one parent expressed. The youths also had strong ideas about the ideal age of program participants. Both the female and male youths agreed that young-to-mid adolescents would be best. One male youth described this sentiment well by saying, "12 to 16; not too young, not too old."

In terms of timing, some of the young people suggested that the new program should not interfere with other programs or responsibilities, while the parents emphasized the importance of providing programming during times when youth were most vulnerable to getting in trouble. All of the groups identified evenings as being the best time, with the male youths and parents identifying weekday evenings in particular. In terms of frequency, the female youths tended to want a program to be held more frequently than the male youths, most of the girls indicating a preference of two to three times weekly. Although some of the male youths also felt that more often would be ideal, their reason for this preference was to give them more choice between days they could attend. Other male youths, however, expressed that less often would be better to encourage youth to come to the program regularly—"once a week to keep them coming back." Some of the young people suggested that an indoor program such as hip-hop might be more desirable in the winter or when the weather is less pleasant. A final issue related to timing was the importance of considering religious holidays when planning a new program. All female youths agreed that planning around religious holidays was necessary. "For the whole month (of Ramadan) we can't listen to music or anything," one expressed.

All of the groups also described a variety of important program or instructor characteristics. For instance, both the male and female adolescents desired an instructor who would provide structure but also give them freedom; one boy described the ideal instructor as someone who “keeps you in control but you’re free...” In terms of instructor gender, most of the girls indicated a preference for a male instructor, whereas most of the boys indicated a preference for a female instructor. The reason for the girls’ preference seemed in part to be based on the belief that a male instructor would be a better dancer; “guys put expression into it.” Overall, however, the general sentiment on instructor gender was described well by a male youth “As long as we have a program and we have fun, it doesn’t matter who instructs it.” In addition, the male youths and parents described a need for programs to better target and recruit young people by improving program publicity and offering incentives or “something to show for the effort” (parent participant).

A strong finding from the adolescents was that observers, and in particular parent observers, were not wanted. Most of the girls expressed seeking independence from parents and fear of embarrassment as reasons for not wanting parents to attend a physical activity program: “It’s embarrassing, ‘cause like your parents are watching you ... and if you made a mistake or something it’s embarrassing.” Overall, the boys’ comments were consistent with this sentiment, however, a couple felt that the presence of parents would be supportive. Somewhat related to this issue was the expressed need for the young people to be supervised while participating in physical activity and other community programs. Although all of the groups expressed a concern for safety while participating in physical activity, the parents were the most concerned about ensuring a controlled environment.

Finally, a theme of distrust of community authorities emerged. Whereas the young people expressed frustration that programs were not available or more accessible to them, the parents expressed a strong distrust that authorities genuinely cared about their neighbourhood or that they were going to make improvements to the current situation. For instance, several parents indicated that they had talked with people from the community who had promised them more programs for their children but that they have not seen results. The parents found it stressful to continually share their ideas without results: “They take all our ideas, but nothing for us, nothing for our kids.”

Discussion

The young people and parents described barriers and facilitators related to youth participation in physical activity at the individual, intrapersonal, and environmental level: this is consistent with a social ecological model and with previous research showing that physical inactivity is related to multiple layers of influence (Brodersen et al., 2005). Importantly, the young people and parents alike were aware of the benefits to adolescent participation in physical activity. This evidence is consistent with past research showing that the problem of physical inactivity and other health behaviours is not primarily an issue of limited education or awareness, but instead is related to a variety of other constraints (Trost, Owen, Bauman, Sallis, & Brown, 2002).

An important intrapersonal factor mentioned by the parents and younger people was everyday life, which is also commonly referred to in the literature as time constraints (e.g., Allison, Dwyer, & Makin, 1999). The parents in this study also felt that laziness and poor sense of responsibility contributed to youth's decisions to participate in physical activity. This finding is consistent with past research that has linked motivational factors to physical activity (Sallis et al., 2000).

At the next level, this study identified interpersonal factors such as youth seeking independence and social support. Past research has consistently supported the importance of peer and parental social support in facilitating participation in physical activity (Sallis & Owen, 1999). Interestingly, this study's findings suggested that the girls felt less support for participation in physical activity than the boys. This is quite interesting in light of the fact that female youth are less likely to be physically active than male youth. In addition, it seems that the girls may have had more chores at home, a trend that is supported by past research reporting that female youth spend more time engaged in domestic responsibilities, homework, and paid employment, all activities that take time away from physically active leisure (Hilbrecht, Zuzanek, & Mannell, 2008; Raley & Bianchi, 2006). The female youths also perceived that there were fewer programs and activities for girls. Overall, these gender differences fit with other research on differences in physical activity patterns between male and female youth (Allison et al., 1999; Caspersen, Pereira, & Curran, 2000; Crespo et al., 1999; Sallis et al., 1996).

Another related issue is gender/ethnic differences in relevancy and comfort or perceived "welcomeness" in physical activity programs and/or recreational spaces (e.g., neighbourhood basketball court; Karsten, 2003;

Tucker & Matthews, 2001). Consistent with previous research, all of the activities that the young people mentioned enjoying were activities that they could afford, that were more accessible to them within their immediate neighbourhood, and for the most part, that tended to be associated with minority young people (e.g., basketball, soccer, running, dancing). Neither the young people nor the parents mentioned activities that are more commonly associated with white middle-or upper-class young people (e.g., gymnastics, ballet, hockey, figure skating; Sallis et al., 1996).

The participants in this study strongly emphasized the influence of environmental factors related to youth participation in physical activity; this again is consistent with other research (Brodersen et al., 2005). Overall, the most striking theme was the need for improved access to physical activity facilities and programs that were fun, safe, age-appropriate, and culturally relevant for young people within this community. These characteristics have been identified as critical for effective youth programming (Anderson-Butcher, 2005; Eccles & Templeton, 2002; Freedson & Rowland, 1992; Task Force on Community Preventive Services, 2002). The participants clearly stated that recreation facilities and programs were either unavailable or inaccessible (e.g., cost too much money). They also described an unsupportive physical environment, including insufficient safe and appropriate places for active leisure (e.g., grassy areas) and difficulties accessing facilities due to transportation concerns, including access to public transit. The researchers' observations of the neighbourhoods were consistent with these findings in that the physical environment did not appear to be conducive to youth engaging in physical activity. Furthermore, other studies are consistent with the finding that access to physical activity resources is associated with higher rates of youth participation in physical activity (Brodersen et al., 2005; Sallis et al., 2000). The participants also described poor neighbourhood safety as a barrier to participation in physical activity. This finding is supported by previous research that has demonstrated that participants of lower SES were more likely to report safety issues at their playgrounds and parks as part of the reason for lower participation rates in physical activity, as compared to participants of higher SES (Oliver & Hayes, 2005).

Overall, the findings of this study on factors related to youth participation in physical activity, in addition to past research, highlight the need for multiple levels of influence to be considered when allocating recreation resources and planning physical activity programs. Some of

the factors also extend beyond the purview of municipal recreation departments and support the need for a multi-pronged approach involving partnerships with families, schools, communities, and multiple levels of government. Potential strategies include interventions and healthy public policies that consider the social and physical environment in an effort to promote youth participation in physical activity. An example would be school curricular changes that promote more collaborative and regular participation of all youth in active leisure in conjunction with increased funding allotted for community-based physical activity interventions that target more disadvantaged neighbourhoods.

Strengths and Limitations

This study has a number of strengths; it also has some limitations. The consideration of both adolescent and parent perspectives and the community-based nature of the research are important strengths. In addition, this study recruited participants with the assistance of community partners. This method was viewed as important in providing the researchers with the credibility and access required to reach an underserved population. One limitation regarding this method was that recruiting the boys from a basketball drop-in may have resulted in a sample that was somewhat biased toward interest in traditional sports; they also may have been more active than the average group of male young people living in a disadvantaged community. Furthermore, having a group of young people that were familiar with one another had advantages and disadvantages. The boys appeared to be comfortable with one another; however, this comfort also appeared to lead to less serious responses. Similarly, the presence of community facilitators during two of the focus group discussions likely put the participants at ease; however, their involvement may have influenced the discussion. This possibility does not seem likely given the openness of the participants in discussing both positive and negative aspects related to youth participation in physical activity in this community.

An important limitation of this study is the small sample size including three focus groups, which were not sufficient to reach data saturation. Another limitation is the use of only one data collection method. As a result, these findings relate to the group of young people and parents interviewed for this study, and may not be generalizable to the overall community of South-East Ottawa or to other contexts. However, a number of procedures were used to strengthen the trustworthiness of the data, including the use of two moderators in the focus groups and two

independent reviewers in the coding of the data. In addition, a third researcher was consulted to confirm the quality of the analysis. The similarity of findings between the female youth, male youth, and parents also strengthen the trustworthiness of the data. Furthermore, the consistency between this study's findings and existing research on young people living in disadvantaged communities and physical activity suggest that the current findings are meaningful in providing some general suggestions for the development of new physical activity programs in disadvantaged communities. Future research will be important in order to better understand how and what contextual factors influence youth participation in active leisure, and what approaches are most effective and efficient at improving the level of activity and well-being of youth living within disadvantaged communities. Future research would benefit from developing collaborative partnerships with the community followed by intervention efforts to give back to the community, as community distrust has been reported as common among disadvantaged communities (Benoit, Jansson, Millar, & Phillips, 2005; Cardona, & Joshi, 2007).

Implications of Study for New Program and Beyond

In light of the focus group findings, community partners continued their plans to implement a new free community-based hip-hop dance intervention in South-East Ottawa for young people between 11 and 16 years of age. Our results, together with existing empirical evidence, informed the development of this new intervention according to a social-ecological framework. The findings from this study also provide helpful suggestions for the development of other similar interventions.

The participants in this study clearly voiced their concern that physical activity programming be fun, relevant, and safe. Hip-hop dance was viewed to be an appealing option that could fit these criteria. For one, previous research has shown dance as a relevant and fun activity for youth of diverse cultures (Grieser et al., 2006). The need for supervision and important instructor characteristics were two additional factors related to this concern. Although the availability of sufficient funding is often a barrier to hiring sufficient program personnel, resources for hiring both program instructors and a supervision co-ordinator previously had been secured for the new program on the basis of the experience of community partners. Consistent with the positive youth development literature, the youths were also seeking adequate structure from program instructors (Larson, 2000).

The female youths' strong preference for single-sex programming is also consistent with past literature (The President's Council on Physical Fitness and Sports, 1997). In response to this preference, a girls-only format was offered in addition to the intended co-ed format. The response to the girls-only format was very positive. This option ought to be considered in physical activity programming, particularly for culturally diverse communities.

This study's findings also provide useful suggestions around the timing, recruitment, and incentives for community-based physical activity programs. For instance, the ideal frequency for such a program seems to be once to twice weekly after school or on the weekend, and would be best decided in consultation with community partners. In addition, the female adolescents highlighted an important need to schedule programming dates around common holidays celebrated within a community (e.g., Ramadan). Many participants also felt that it would be important for programs to offer incentives to encourage participation, an idea that is supported by the literature (Chinman, Imm, & Wandersman, 2004). It may also be important to young people that parents and other observers not be allowed, to give young people an opportunity to be independent from their families in a safe environment. One possible strategy for responding to both parent and young people needs would be to hold the first class as an open class, while thereafter closing the class to participants and staff only.

Finally, it is critical that communities make physical activity programs as accessible as possible (Task Force on Community Preventive Services, 2002). One important example mentioned by numerous participants was providing bus tickets and other transportation assistance to reduce the impact of this barrier to young people's participation. In conclusion, this study presents findings that are consistent with the literature at the same time as highlighting the importance of tailoring interventions to meet the needs and interests of specific communities.

Contributors

Julie Beaulac conceived of the study concept and design. Julie Beaulac and Danielle Bouchard collected and analyzed the data. Julie Beaulac, Danielle Bouchard, and Elizabeth Kristjansson interpreted the data. Julie Beaulac drafted the paper and Danielle Bouchard and Elizabeth Kristjansson critically revised it for important intellectual content. All authors gave final approval of the version to be published.

Acknowledgments

Our thanks are extended to: (1) Community Partners from South-East Ottawa Community Health Centre, Culture Shock Canada, and Heron Road Community Centre, who have asked that their organization names be used. In particular, thanks to Madeleine Brenning, Marc-André Clément, Serena Rae, and Kelli Tonner; (2) other community workers in South-East Ottawa for facilitating focus groups and young people involvement in intervention, especially: Andrea Hess, Abid Jan, and Wendy Shaw; (3) young people and parents in South-East Ottawa for their participation; (4) committee members for their input: Dr. Bob Flynn, Dr. Michelle Fortier, and Dr. Denise Spitzer; and (5) to the reviewers for their helpful comments.

References

- Aaron, D.J., Storti, K.L., Robertson, R.J., Kriska, A.M., & LaPorte, R.E. (2002). Longitudinal study of the number and choice of leisure time physical activities from mid to late adolescence. *Archives of Pediatrics and Adolescent Medicine*, *156*, 1075–1080.
- Allison, K.R., Dwyer, J.J.M., & Makin, S. (1999). Perceived Barriers to Physical Activity among High School Students. *Preventive Medicine*, *28*(6), 608–615.
- Anderson-Butcher, D. (2005). Recruitment and retention in youth development programming. *The Prevention Researcher*, *12*(2), 3–6.
- Anderson-Butcher, D., Cash, S.J., Saltzburg, S., Midle, T., & Pace, D. (2003). Institutions of youth Development: The significance of supportive staff-youth relationships. *Journal of Human Behavior in the Social Environment: A Professional Journal*, *9*, 83–99.
- Beauvais, C. (2001). *Status report on a literature review on learning through recreation* (CPRN Discussion paper No. F/15). Ottawa, ON: Canadian Policy Research Networks. Retrieved June 30, 2006, from <http://www.cprn.org>.
- Benoit, C., Jansson, M., Millar, A., & Phillips, R. (2005). Community-academic research on hard-to-reach populations: Benefits and challenges. *Qualitative Health Research*, *15*(2), 263–282.
- Brodersen, N.H., Steptoe, A., Williamson, S., & Wardle, J. (2005). Sociodemographic, developmental, environmental, and psychological correlates of physical activity and sedentary behavior at age 11 to 12. *Annals of Behavioral Medicine*, *29*(1), 2–11.
- Brownson, R.C., Baker, E.A., Housemann, R.A., Brennan, L.K., & Bacak, S.J. (2001). Environmental and policy determinants of physical activity in the United States. *American Journal of Public Health*, *91*(12), 1995–2003.

- Burton, N.W., Turrell, G., & Oldenburg, B. (2003). Participation in recreational physical activity: Why do socioeconomic groups differ? *Health Education and Behavior, 30*, 225–244.
- Canadian Fitness and Lifestyle Research Institute. (2004). *Physical activity levels across Canada: Physical activity among youth* (Physical Activity Monitor). Ottawa, ON. Retrieved January 8, 2007 from http://www.cflri.ca/eng/levels/youth_levels.php.
- Cardona, M., & Joshi, R. (2007). The challenge of balancing methodological research rigour and practical needs in low-income settings: What we are doing and what we need to do better. *Critical Public Health, 17*(1), 81–89.
- Carron, A.V., Hausenblas, H.A., & Estabrooks, P.A. (2003). *The psychology of physical activity*. New York: McGraw-Hill.
- Caspersen, C.J., Pereira, M.A., & Curran, K.M. (2000). Changes in physical activity patterns in the United States, by sex and cross-sectional age. *Medicine & Science in Sports & Exercise, 32*(9), 1601–1609.
- Catalano, R.F., Berglund, M.L., Ryan, J.A.M., Lonczak, H.S., & Hawkins, J.D. (2004). Positive youth development in the United States: Research findings on evaluations of positive youth development programs. *Annals of the American Academy of Political and Social Science, 591*, 98–124.
- Chinman, M., Imm, P., & Wandersman, A. (2004). *Getting to outcomes 2004. Promoting accountability through methods and tools for planning, implementation, and evaluation*. Santa Monica, CA: Rand Corporation. Retrieved November 1, 2006, from <http://www.washingtonmentoring.org/pdf/gettingToOutcomes.pdf>.
- Chinn, D.J., White, M., Harland, J., Drinkwater, C., & Raybould, S. (1999). Barriers to physical activity and socio-economic position: Implications for health promotion. *Journal of Epidemiology and Community Health, 53*, 191–192.
- Craig, C.L., Cameron, C., Russell, S.J., & Beaulieu, A. (2001). *Increasing physical activity: Supporting children's participation*. Ottawa, ON: Canadian Fitness and Lifestyle Research Institute. Retrieved April 25, 2005, <http://www.cflri.ca/pdf/e/2000pam.pdf>.
- Dalton, J.H., Elias, M.J., & Wandersman, A. (2001). *Community psychology. Linking individuals and communities*. Stamford, CT: Wadsworth, Thomson Learning.
- Domitrovich, C.E., & Greenberg, M. (2000). The Study of implementation: Current findings for effective programs that prevent mental disorders in school-aged children. *Journal of Educational and Psychological Consultation, 11*(2), 193–221.
- Eccles, J.S., & Templeton, J.L. (2002). Extracurricular and other after-school activities for youth. In W.G. Secada (Ed.), *Review of Research in Edu-*

- tion, Vol. 26 (pp. 113–180). Washington, DC: American Educational Research Association.
- Fitzpatrick, J. (2002). A conversation with Leonard Bickman. *American Journal of Evaluation*, 23(1), 69–80.
- Fleury, J. & Lee, S.M. (2006). The social ecological model and physical activity in African American Women. *American Journal of Community Psychology*, 37, 129–140.
- Freedson, P.S., & Rowland, T.W. (1992). Youth activity versus youth fitness: Let's redirect our efforts. *Research Quarterly for Exercise and Sport*, 63, 133–136.
- Gauvin, L. (2003). *Social disparities and involvement in physical activity: Shaping the policy agenda in healthy living to successfully influence population health*. Montreal: Groupe de Recherche Interdisciplinaire en Santé, Université de Montréal. Retrieved April 25, 2005, from <http://www.gris.umontreal.ca/rapportpdf/R03-02.pdf>.
- Gauvin, L., Lévesque, L., & Richard, L. (2001). Helping people initiate and maintain a more active lifestyle: A public health framework for physical activity promotion research. In R. Singer, H. Hausenblas, & C. Janelle (Eds.), *Handbook of sport psychology* (pp. 718–739). New York: John Wiley.
- Giles-Corti, B., & Donovan, R.J. (2002). The relative influence of individual, social and physical environment determinants of physical activity. *Social Science & Medicine*, 54, 1793–1812.
- Grieser, M., Vu, M.B., Bedimo-Rung, A.L., Neumark-Sztainer, D., Moody, J., Rohm Young, D., et al. (2006). Physical activity attitudes, preferences, and practices in African American, Hispanic, and Caucasian Girls. *Health Education & Behavior*, 33(1), 40–51.
- Grzywacz, J.G., & Marks, N.F. (2001). Social inequalities and exercise during adulthood: Toward an ecological perspective. *Journal of Health and Social Behavior*, 42(2), 202–220.
- Gyurcsik, N.C., Spink, K.S., Bray, S.R., Chad, K., & Kwan, M. (2006). An ecologically based examination of barriers to physical activity in students from grade seven through first-year university. *Journal of Adolescent Health*, 38, 704–711.
- Heath, G.W., Brownson, R.C., Kruger, J., Miles, R., Powell, K.E., & Ramsey, L.T. (2006). Task Force on Community Preventive Services. The effectiveness of urban design and land use and transport policies and practices to increase physical activity: A systematic review. *Journal of Physical Activity & Health*, 3(S1), S55–S76.
- Hilbrecht, M., Zuzanek, J., & Mannell, R.C. (2008). Time use, time pressure and gendered behavior in early and late adolescence. *Sex Roles*, 58, 342–357.

- Humbert, M.L., Chad, K.E., Bruner, M.W., Spink, K.S., Muhajarine, N., Anderson, K.D., et al. (2008). Using a naturalistic ecological approach to examine the factors influencing youth physical activity across grades 7 to 12. *Health Education & Behavior, 35*(2), 158–173.
- Humbert, L.M., Chad, K.E., Spink, K.S., Muhajarine, N., Anderson, K.D., Bruner, M., et al. (2006). Factors that influence physical activity participation among high- and low SES youth. *Qualitative Health Research, 16*(4), 467–483.
- Humpel, N., Owen, N., & Leslie, E. (2002). Environmental factors associated with adults' participation in physical activity. *American Journal of Preventive Medicine, 22*(3), 188–199.
- Johnson, M. (2000). Perceptions of barriers to healthy physical activity among Asian communities. *Sport, Education and Society, 5*(1): 51–70.
- Karsten, L. (2003). Children's use of public space. The gendered world of the playground. *Childhood, 10*(4), 457–473.
- King, A.C., Jeffery, R.W., Fridinger, F., Dusenbury, L., Provence, S., Hedlund, S., et al. (1995). Environmental and policy approaches to cardiovascular disease prevention through physical activity: Issues and opportunities. *Health Education Quarterly, 22*(4), 499–511.
- Kristjansdottir, G., & Vilhjalmsson, R. (2001). Sociodemographic differences in patterns of sedentary and physically active behavior in older children and adolescents. *Acta Paediatrica, 90*, 429–435.
- Krueger, R.A., Morgan, D.L., & King, J.A. (1998). *Focus group kit*. Thousand Oaks, CA: Sage.
- Larson, R.W. (2000). Toward a psychology of positive youth development. *American Psychologist, 55*, 170–183.
- Larson, R., & Seepersad, S. (2003). Adolescents' leisure time in the United States: Partying, sports, and the American experiment. *New Directions for Child and Adolescent Development, 99*, 53–64.
- Lee, S.M. (2005). Physical activity among minority populations: What health promotion practitioners should know—A commentary. *Health Promotion Practice, 6*(4), 447–452.
- Macintyre, S., Maciver, S., & Sooman, A. (1993). Area, class and health: Should we be focusing on places or people? *Journal of Social Policy, 22*(2), 213–234.
- Mo, F., Turner, M., Kreski, D., & Mo, F.D. (2005). Physical inactivity and socioeconomic status in Canadian adolescents. *International Journal of Adolescent Medicine & Health, 17*(1), 49–57.
- Morse, J. (2008). Confusing categories and themes. *Qualitative Health Research, 18*, 727–728.
- Norman, G.J., Schmid, B.A., Sallis, J.F., Calfas, K.J., & Patrick, K. (2005). Psychosocial and environmental correlates of adolescent sedentary behaviors. *Pediatrics, 116*(4), 908–916.

- Oliver, L.N., & Hayes, M.V. (2005). Neighbourhood socio-economic status and the prevalence of overweight Canadian children and youth. *Canadian Journal of Public Health, 96*(6), 415–420.
- Philipp, S.F. (1999). Are we welcome? African American racial acceptance in leisure activities and the importance given to children's leisure. *Journal of Leisure Research, 31*(4), 385–403.
- Raley, S., & Bianchi, S. (2006). Sons, daughters, and family processes: Does gender of children matter? *Annual Review of Sociology, 32*, 401–421.
- Roth, J., Brooks-Gunn, J., Murray, L., & Foster, W. (1998). Promoting healthy adolescents: Synthesis of youth development program evaluations. *Journal of Research on Adolescence, 8*(4), 423–459.
- Sallis, J.F., Bauman, A., & Pratt, M. (1998). Environmental and policy interventions to promote physical activity. *American Journal of Preventive Medicine, 15*(4), 379–397.
- Sallis, J.F., & Owen, N. (1997). Ecological models. In K. Glanz, F. Marcus Lewis, & B.K. Rimer (Eds.), *Health behavior and health education. Theory, research, and practice* (2nd ed.) (pp. 403–424). San Francisco: Jossey-Bass.
- Sallis, J.F., & Owen, N. (1999). *Physical activity and behavioral medicine*. Thousand Oaks, CA: Sage.
- Sallis, J.F., Prochaska, J., & Taylor, W.C. (2000). A review of correlates of physical activity of children and adolescents. *Medicine and Science in Sports and Exercise, 32*(5), 963–975.
- Sallis, J.F., Zakarian, J.M., Hovell, M.F., & Hofstetter, C.R. (1996). Ethnic, socioeconomic, and sex differences in physical activity among adolescents. *Journal of Clinical Epidemiology, 49*(2), 125–134.
- Schooler, C. (1995). *Physical activity interventions: Evidence and implications*. Prepared for the Ontario Ministry of Citizenship, Culture, and Recreation and the Ministry of Health. Toronto, Ontario: Canada. Queen's Printer for Ontario.
- Social Planning Council of Ottawa. (2005, August). *Socio-economic determinants of health indicators for the South East Ottawa Centre for a Healthy Community catchment area*. Highlights report. Ottawa, ON: Social Planning Council of Ottawa.
- Steptoe, A., & Butler, N. (1996). Sports participation and emotional wellbeing in adolescents. *The Lancet, 347*(9018), 1789–1792.
- Stokols, D. (1996). Translating social ecological theory into guidelines for community health promotion. *American Journal of Health Promotion, 10*(4), 282–298.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Thousand Oaks, CA: Sage.

- Task Force on Community Preventive Services. (2002). Recommendations to increase physical activity in communities. *American Journal of Preventive Medicine*, 22(4S), 67–72.
- Taylor, W.C., Baranowski, T., & Young, D.R. (1998). Physical activity Interventions in low-income, ethnic minority, and populations with disability. *American Journal of Preventive Medicine*, 15, 334–343.
- The President's Council on Physical Fitness and Sports. (1997). *Physical activity and sport in the lives of girls: Physical and mental health dimensions from an interdisciplinary approach*. Washington, DC: President's Council on Physical Fitness and Sports. Retrieved February 15, 2007, from <http://fitness.gov/girlssports.pdf>.
- Trost, S.G., Owen, N., Bauman, A.E., Sallis, J.F., & Brown, W. (2002). Correlates of adults' participation in physical activity: Review and update. *Medicine & Science in Sports & Exercise*, 34(12), 1996–2001.
- Tucker, F., & Matthews, H. (2001). "They don't like girls hanging around there": Conflicts over recreational space in rural Northamptonshire. *Area*, 33(2), 161–168.
- Welk, G.J. (1999). The young people physical activity promotion model: A conceptual bridge between theory and practice. *Quest*, 51, 5–23.
- Wharf Higgins, J., Gaul, C., Gibbons, S., & Van Gyn, G. (2003). Factors influencing physical activity levels among Canadian young people. *Canadian Journal of Public Health*, 94(1), 45–51.