Evidence Brief: Barriers to Physical Activity for children and youth in Ontario

Key messages

- Barriers to physical activity include individual, institutional, community and interpersonal (family-level) barriers.
- Intervention strategies should be tailored to age, gender, level of activity and other factors.
- Additional research into the specific barriers for each population or setting may be required to inform effective, targeted initiatives.

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Issue and Research Question

Physical activity (PA) plays a vital role in the health and well-being of people of all ages. Among youth, increased physical activity is associated with a range of health benefits including physical factors, such as decreased adiposity and improved cardiometabolic health, as well as mental health outcomes, such as increased self-esteem and confidence.[1-4] It has also been hypothesized that regular participation in physical activity can result in the establishment of healthy behaviours that will persist throughout the life course.

To achieve these desired health benefits, the Canadian Society for Exercise Physiology, in collaboration with other key stakeholders, created evidence-based guidelines recommending children (aged 5-11) and youth (aged 12-17) accumulate at least 60 minutes of moderate- to vigorous-intensity PA (MVPA) each day.[5] The guidelines also recommend that this should include vigorous-intensity activities at least 3 days per week, and activities that strengthen muscle and bone at least 3 days per week.[5] However, it is estimated that only 7 per cent of Canadian children and youth (age 6-19) accumulate at least 60 minutes of MVPA at least 6 days a week.[6]

There is a well-established body of literature on factors associated with, or determinants of, physical activity across all ages.[7] However, less is known about barriers to physical activity participation. Barriers refer specifically to obstacles that individuals encounter in "undertaking, maintaining, or increasing physical activity".[8]

In addition to objective factors, such as urban form, barriers to PA can also be perceived.[9,10]

Perceived barriers to PA are a person's estimated level of challenges related to various obstacles to PA.[10] Perceived barriers can reflect internal factors, such as lack of interest or motivation to do physical activity, or external factors, such as a lack of support from friends and family.[8] In some cases, a barrier may represent both internal and external factors. For example, the barrier "lack of time" could be considered either an internal factor from lack of time management skills, or an external factor due to time commitments from other sources such as homework or employment.

Given the low proportion of Canadian children and youth currently meeting recommended physical activity guidelines, there is a need to identify specific barriers that prevent this population from participating in physical activity. This Evidence Brief asks: *What are the barriers to PA for children and youth?*

Methods

Ovid MEDLINE was initially searched by PHO Library Services on July 18, 2014, followed by an updated search on November 23, 2015. The search focused on the barriers to, or determinants or correlates of, PA that might be experienced by children and youth under 18 years of age. The full search strategy can be obtained from PHO upon request.

To be included in the initial screening, studies had to be English-language review articles (systematic reviews and meta-analyses), from developed countries, published between 2009 and 2014. The initial search strategy was applied for the updated search, but was restricted to articles published from 2014 onward.

Articles were excluded if they focused on a specific population (e.g., ethnic group, physically-disabled, athletes), if PA was the predictor variable or treatment instead of the outcome, if they examined the determinants of obesity instead of PA, and if they examined components of PA interventions contributing to PA and not barriers.

These articles underwent a title and abstract screen by two PHO staff (DM, EB) and were screened according to inclusion and exclusion criteria. DM reviewed 80 per cent of the titles and abstracts while EB reviewed the remaining 20 per cent. Articles that appeared potentially relevant and met inclusion criteria were selected for full-text review. The reference lists of included articles were also reviewed to ensure a comprehensive assessment of the literature was obtained.

Finally, relevant information was extracted from each article by one PHO staff (KVN). For an article to be included in the final synthesis, it had to explicitly examine barriers to PA, rather than just negative correlates of PA. For example, although season has been shown to be negatively associated with physical activity, unless it was identified as a barrier, this was not included in this Evidence Brief.[11,12]

Main Findings

The initial search identified 659 articles, from which 30 unique review articles met the inclusion criteria following title and abstract review. Four articles were added from reference lists. The updated search identified 186 additional articles, from which 17 unique review articles met the inclusion criteria following title and abstract review. A total of 51 articles therefore underwent full-text review. After full-text review, 41 articles were excluded and 10 review articles were included in the final synthesis.

Most review articles were excluded because they examined the effects of PA (i.e., PA as the predictor variable or treatment) or because they focused on the relationship between PA and health outcomes. Other excluded articles considered specific populations, or described determinants and correlates of PA behaviours, but not barriers.

A range of factors emerged as important barriers to physical activity. We used McLeroy's socioecological model to categorize these

barriers and found that they were related to four of the five socioecological levels, including: intrapersonal (individual); interpersonal; organizational or institutional; and community (including social and physical or built environments).[13] Although we did not identify or categorize explicit policy-level barriers, we recognize that some barriers listed at other levels may exist or are influenced, in part, by policy-related issues.

Intrapersonal (Individual) Level

Children and youth's perceptions related to 1) their prioritization of PA participation in their daily lives and 2) their body image in relation to PA participation, are two major themes of barriers gathered from the review. Lack of time as a barrier to PA was commonly cited among the articles reviewed.[9,14-17] While a lack of time due to competing school (e.g., homework) or social activities could also be considered an objective barrier to PA participation, the perception that there is not enough time may be due to the low level of priority in which PA is perceived to have in relation to other competing demands.[9,14-17] Other perceived barriers cited at this level that may also support this notion include a lack of interest or fun, lack of belief in the benefits of PA, a lack of motivation or laziness to participate and competing sedentary leisure activities.[9,14,16,17]

Barriers related to negative body image perceptions – during and as a result of PA participation – were found particularly among teenage girls and overweight and obese adolescents.[14,16,17] The perception of being verbally bullied or negatively judged, and frequent or negative comparison of their own body size, shape and ability to others has resulted in students skipping physical education (PE) classes to avoid body shaming.[14,16,17] These perceptions can be further exacerbated in PE classes where individuals are required to wear a PE uniform or swimming apparel (which could also be considered an institutional barrier).[14] Other related negative self-perceptions that prevent children and youth participation in PA include low self-efficacy or lack of competence in their PA-related abilities.[14,16,17]

Other personal factors cited include physical discomfort or fatigue experienced during and following exercise.[16,18] Furthermore, lack of money for sports and transportation is a barrier to PA participation.[14,16,17]

Interpersonal Level

A lack of family or parental support, due to perceptions of various aspects related to PA, can greatly influence children and youth's level of PA participation.[16,17] For example, parental concerns regarding lack of neighbourhood safety is a commonly cited barrier to PA, particularly related to outdoor play or active transportation.[10,14,16,19,20] Lack of family support can also occur through a lack of encouragement, financial support or transportation, or a lack of PA participation among parents themselves.[14,16,17] Some parents may not want their children to participate in PA due to competing academic or work demands, which are viewed as having greater importance.[14,17] Furthermore, one synthesis found that some parents do not believe that PA is safe or appropriate for girls.[14]

Since children and youth spend the majority of their days at school, peers, teachers and coaches also play a large role in whether or how they participate in PA. Feeling a lack of support from peers, due to negative experiences during PE or competitive PA environments were reported by adolescents.[14,16,17] Teenage girls and adolescents who are overweight or obese, in particular, reported experiences of being excluded, verbally and physically bullied, or stereotyped by peers during PE class or other physical activities.[14,16] This typically occurred if they could not keep up in an activity or if the activity emphasized their body size or shape.[14,16] This lack of support can be amplified by aggressive, pressuring or unfair teachers and coaches.[14,17]

Organizational/Institutional Level

Barriers identified at this level are mostly related to the school environment. As

mentioned above, competing school-related activities can lead to an actual lack of time for PA. [9,14-16] Within a school's built environment, a lack of playground equipment or outdated equipment was cited as a barrier to PA.[14,21]

In general, adolescents considered competitive or performance-driven PA environments a barrier.[17] Adolescent girls, specifically, reported competition with boys for equal PA time, space and recognition.[14] Furthermore, girls frequently cited that the sport(s) they wanted to play were unavailable, or there were not enough girls to form a team.[14,16,17] However, a lack of PA programs offered in school, in general, was noted in one synthesis.[17]

Outside of school, barriers to PA include a lack of PA programs within communities.[17] Where programs are available in community or recreational centres, barriers to accessing them include the cost, time, scheduling and lack of diversity of organized PA or sport programs.[14,16]

Community Level

Cultural or social norms and perceptions that do not value PA, or give PA a low priority over other behaviours, were reported perceived barriers to PA at the community level.[16,17]

Other barriers to PA at the community level relate to the physical and built environment of communities. One review identified a lack of yard space as a barrier to active play and PA among children and youth,[18] while another indicated a lack of recreational infrastructures.[17] Furthermore, while parents' perceptions of neighbourhood safety was cited above as a perceived interpersonal barrier, crime occurrence and/or a real lack of safety within neighbourhoods were also reported as factors preventing PA.[14,16]

Additionally, climate and weather conditions were cited to inhibit PA.[16] Although community or recreation centres are indoor alternatives to outdoor play, a lack of facilities cited in some communities further prevent PA for children and youth.[16] Where facilities do exist, other barriers to participating in PA include a lack of transportation to get there, particularly in rural communities where the geographical proximity of facilities can create challenges in accessibility.[14,16]

Discussion and Conclusions

This Evidence Brief found barriers to PA can be objective and/or perceived, and they can also exist at multiple levels. For example, the barrier 'lack of time' can be perceived at the intrapersonal level (e.g., low level of priority versus other activities). Its prevalence across age and gender suggests that it may be the result of underlying factors common to all youth.[11] However, 'lack of time' may also be considered an objective barrier at the organizational/institutional level due to competing school activities. Similar trends may exist for the barrier 'lack of neighbourhood safety'. At the interpersonal level, this may be perceived by parents; yet at the community level a real lack of safety or crime may exist, inhibiting physical activity outdoors.

We also found important differences in barriers by context, gender, age, and current level of activity and adiposity.[14,16,17]

Context

One limitation of the reviews was how physical activity was conceptualized as a homogenous characteristic. However, barriers to organized sport involvement (e.g., playing for a hockey team) may differ from barriers to active commuting to school (e.g., biking or walking to and from school).[17] While for the former, costs to join a team or buy equipment might be a barrier, for the latter, parental perceptions of neighbourhood or traffic safety may prevent these opportunities for PA. Thus, barriers may be contextual in nature. While there is growing literature around barriers to specific types of PA, such as active transportation, further specifying the context in which barriers emerge will help to broaden this research field and provide concrete suggestions on where to focus health promotion efforts.

Gender

Perceptions about body image, safety, peer support (or lack thereof), access and availablility, as well as societal norms, differ between girls and boys, and these may manifest as different perceived barriers.[14,16,17] In the articles reviewed, specific barriers related to such perceptions were commonly reported by adolescent girls.[14,16,17] Future research identifying gender-specific barriers (e.g., stratifying samples by gender) may provide evidence for the development of gender-specific strategies for addressing obstacles to PA. [14,16,17]

Age

The majority of articles included in this Evidence Brief focused on identifying barriers to adolescents' participation in PA. This is not surprising, since evidence has shown declines in PA as children get older, particularly in their teenage years.[14] Moreover, the volume of school and work responsibilities, as well as social activities, greatly increases in adolescence and can lead to a perceived or actual lack of time for PA.[9,14-16] While it is important to continue identifying and addressing barriers among this age group, further research focused on younger children may also provide insight on how to mitigate potential declines in PA as they transition into adolescence. This is particularly important since it is known that PA habits adopted during both childhood and adolescence are carried out throughout the rest of their lives.[17]

Level of Activity and Adiposity

Adolescents who have remained highly active throughout their lives may not share the same barriers as those who have been less or not at all active.[17] Many of the perceptions related to a lack of personal motivation, competency, comfort, time and family or peer support were barriers reported by less or non-active teenagers.[17] Conversely, more active adolescents did not consider these factors to be barriers; rather, some considered the barriers perceived by their less active peers as positive, motivational factors that facilitate their PA participation.[17] For example, active adolescents acknowledged their ability to participate in PA among other responsibilities as having good time management skills.[17] More active teenagers also reported high levels of competency in PA, feeling comfortable with their body image, challenging norms about 'feminine' stereotypes, and giving high importance to improving their health and skills; whereas these factors were viewed more negatively or as barriers by their less active peers.[17]

Physically active adolescents also have lower levels of adiposity than their less active peers, and our review identified a number of barriers experienced by overweight and obese adolescents.[16] Many of these barriers were similar to those reported by girls and less or non-active adolescents, such as: negative perceptions regarding body image and competency, a lack of support and bullying from family and peers, and access and availability of activities.

Although barriers to PA do exist across gender, age and level of activity and adiposity among children and youth, further examination has identified more vulnerable groups within each category. Specifically, the majority of barriers to PA were reported by adolescents, girls, and those who are less active and overweight or obese.[14,17] The impact of these barriers may be further compounded among individuals who identify with more than one of these groups. Findings also provided insight on the contexts in which barriers may manifest (e.g., during PE class or competitive PA environments).

Implications for Practice

Results from this Evidence Brief indicate that barriers to PA identified by children and youth range across the various socioecological levels.[9,10,14,16,17] These findings align well with similar evidence among other populations or groups, which also show that barriers and other determinants of PA can exist across multiple levels.[22,23] Within this literature, it is recognized that developing strategies to promote or address the challenges to participating in PA is a complex process, and the importance of using a

multi-level approach is often emphasized.[16,17,21-24] Although policy-related barriers were not explicitly identified within the literature, policy initiatives are widely recognized as strategies that can tackle barriers to PA multiple levels;[20-24] for instance, municipal policies to support PA opportunities in parks and trails can influence behavioural changes in children and youth in the broader population.[20,21,23,24]

Our synthesis also indicates that several populations are more likely to report barriers to PA participation than others.[16,17] Similarly, PA context may present different barriers to participation.[16] Therefore, strategies tailored by age, gender, level of activity and/or other factors should be considered.[16] This may require additional research into the specific barriers to or gaps in PA for each particular population or setting in order to inform effective targeted intiatives.[14,16,17]

Limitations

Of the 10 identified reviewed articles, only four review articles focused on barriers specifically.[10,14,16,17] The remaining six articles all investigated correlates of physical activity. Thus, while other factors, such as socioeconomic status, were shown to be associated with physical activity, barriers that might explain these differences were not examined.[15] This limited the conclusions we could draw from these reviews.

Specifications and Limitations of Evidence Brief

This Evidence Brief presents key findings from the scientific review-level literature. Its purpose is to investigate a research question in a timely manner to help inform decision making. This report is not a comprehensive review of the literature, but rather a rapid assessment of impacts demonstrated in review-level research evidence. There may be relevant studies that are not included or which may be published after the date of this evidence brief. Although this brief is representative of findings from the entire body of literature, over time primary study evidence may accumulate to a sufficient degree to alter the conclusions drawn from the report.

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