The Role of Outdoor Education / Recreation in Promoting Healthy School Communities: Lessons from Germany, Canada, and the United States

Kea Scheewe
Jeet Sujan, BHKIN, BEDUC
Stephanie Wade, M.P.H.

ABSTRACT
Characterized by sedentary behaviors and unhealthy nutritional intake among youth, the current health crisis facing many industrialized countries has resulted in an epidemic of overweight and obese children. Nations are eager to develop programs and policies to reduce and halt this epidemic. Some believe schools should play a large role in addressing this problem due to the fact that many children spend one-third or more of their days within an educational facility. There is urgency to reintroduce effective physical activity programs in schools. This paper provides a comparison of overweight and obesity trends among children and current traditional and "outdoor recreation" school physical activity programs in three industrialized countries – Canada, Germany, and the United States. This paper examines several recreational activities and the role they play in encouraging physical activity among adolescents. There has been a shift in the methodology utilized in promoting physical activities. Educational institutions have engaged in and continue to develop non-traditional approaches toward addressing physical inactivity such as hiking and snow boarding. The findings within this paper underscore the need for collaboration among educational institutions, physicians, parents, public health professionals and policy makers in addressing this epidemic.
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Introduction

Over the past three decades there has been an alarming concern regarding the health of children and adolescents in industrialized countries. Many nations are faced with a health crisis that is characterized by youths who often engage in behaviors that negatively impact their overall health status. In many developed countries children are more engaged in sedentary behaviors that often include playing video games, watching television, and surfing the Internet. The deteriorating health of children and adolescents is of great public health concern for several nations. The World Health Organization (WHO) emphasizes that based on the global scope and impact, "urgent public health action" is essential in tackling this problem (WHO, 2001).

The Under Secretary for the Food, Nutrition and Consumer Services (FNCS) at the United States Department of Agriculture testified before the house committee on Government Reform Subcommittee on Human Rights and Wellness that the obesity epidemic among adolescent is resulting in parents outliving their children. (National Obesity Health, 2004, p.11). The health issues that impact these individuals are often related to inadequate physical activity and poor nutritional intake. There are aggressive marketing campaigns by food companies to appeal to children by promoting high sugar beverages, high-fat snack items, and fast foods during regular children's television programs (Krebs & Jacobson, 2003; Ebbeling et al, 2004). These actions resulted in two problems: 1) children are often already engaged in limited or no physical activity resulting in a sedentary lifestyle; and 2) children are encouraged to consume unhealthy food choices. These unhealthy behaviors often result in children becoming overweight and obese.

The American Academy of Pediatrics has emphasized that overweight and obesity among children and adolescents can lead to hypertension, type 2 diabetes, sleep apnea, insulin resistance, and cardiac problems (Sorof, Lai, Turner, Poffenbarger, & Portman, 2004 ; Schwimmer, Burwinkle, & Varni, 2003; Strong, et al., 2005). Additional studies also reveal that the self-image and self-confidence of these children are often negatively impacted thus resulting in poor self-esteem. These studies also indicate that overweight children are more likely to become overweight adults; overweight and obese adults usually have increased health issues as a result of poor weight management (Council on Sports Medicine, 2006; Sorof et al, 2004; Strong et al, 2005). The overall burden that is placed on many governments providing healthcare services is exorbitant and the ultimate price for the individual includes a decrease in quality of life and years of life lost. The health crisis regarding the poor health of our

children is a pressing issue that plagues most industrialized nations.

"F" was the latest grade received by Canadians in respect to physical activity levels as reported by the Research Work Group and Active Healthy Kids in 2008. The benefits associated with participation in various forms of physical activity have been well researched and documented over the years. Health benefits associated with a physically active lifestyle include, but are not limited to the following: "helps in building strong bones, healthy joints, a strong heart, good mental health, increased self-esteem and prevents today's major public health concern – obesity" (Ferreira et al, 2006). The vital importance of providing today's youth with as many varied opportunities to be active is of utmost importance if they are to establish a lifelong adherence to healthy lifestyles.

In Canada, particularly in the Province of British Columbia, citizens are fortunate that, in addition to public infrastructure in the form of community centers, gymnasiums, and playing fields, there is an abundance of natural locations that may be utilized for outdoor recreation/education. Neill (2002) refers to outdoor recreation as "an international, experiential education phenomenon which engages people in outdoor activities for enhancement of the well-being of individuals, communities, and the environment". Even with all of the natural locations in which one has the potential to reap the benefits of an active lifestyle, a number of hurdles must be addressed in order to succeed. The Federal Republic of Germany, the United States, and Canada are three industrialized countries that are currently reviewing various strategies to effectively reduce unhealthy behaviors among their pediatric population. This paper reviewed adolescent health behaviors, physical activity programs and initiatives and discussed examples of successful recreation programs.

Overweight and Obesity Trends

Canada

Spending on health care in Canada was expected to reach $142 billion in 2005 an increase of 7.7% over the previous year (Shields, 2006). These costs are expected to keep rising due to factors including an aging population and an increasingly sedentary lifestyle amongst today's youth. Canada's per capita spending was ranked fourth internationally coming in at 3,001 per person (Shields, 2006). Various changes in society have created an opportunity for more sedentary behavior and the consumption of food that is high in kilojoules. Health statistics indicate that obesity amongst adolescents and adults is on the rise and has been for the past 25 years or so. In 2004, the combined prevalence of overweight/obesity for males and females was approximately 70% higher than in 1978-1979, and the prevalence of obesity alone was 2.5 times higher (Shields, 2006).

Many studies have shown that children who are overweight or obese are far more likely to have weight problems as adults when compared to those adolescents without weight management issues. Baker, Olsen and Sorenson emphasize that "being overweight as a child increases the risk of heart disease in adulthood by as early as age 25" (Baker, Olsen, & Sorensen, 2004, p.33). In addition to an increase in cardiovascular complications there is an increase in risk of "type 2 diabetes, joint problems, sleep apnea, abnormal clotting, lower self-esteem and depression" (Latzmarzyk Gledhill, & Shephard, 2000, p.1437). These risk factors add further financial burden on the health care system and will continue to do so unless progressive preventable measures are taken. There are many factors that contribute to this continual demise in the health of today's youth; a majority of these factors fortunately are modifiable. The modifiable risk factors include, but are not limited to the following: dietary intake; screen time; and physical activity.

Intake of fruits and vegetables was inversely related to obesity with those children consuming fruits and vegetables daily. Based on data from the 2004 CCHS, 59% of Canadian children and adolescents were reported to consume fruits and vegetables less than 5 times a day. These children were significantly more likely to be overweight/obese than those who ate fruit and vegetables more frequently (Shields, 2006). In 2007 the British Columbia Ministry of Health and Ministry of Education passed new legislation that will assists students in making healthy choices by eliminating many of the 'junk foods' currently available on school campuses, these effects will come into place September 2008 (British Columbia Ministry of Health and Ministry of Education, 2007).

Another modifiable factor that has led to the rise in overweight and obese children and youth is an increase in screen time'. Screen time incorporates a number of similar yet different behaviors and includes the following: watching TV or movies; playing video games; and surfing the Internet (computer usage). Increase in this behavior was proportionally related to the overweight stats. In 2004, over one- third (36%) of children aged 6 to 11 logged more than 2 hours of screen time each day. These children were twice as likely to be overweight/obese (35%) unlike those whose daily viewing amounted to an hour or less (18%) (Shields, 2006). Similar statistics were also observed amongst adolescents ages 12-17. The proportion that was

overweight or obese ranged from 23% of those viewing less than 10 hours a week to 35% of those who spent 30 or more hours in front of a screen (Shields, 2006). The above-mentioned factors further add validity to the need to offer students as many opportunities as possible to engage in physically activity.

Germany

According to the WHO Regional Office for Europe, one-half of adults and one-fifth of children and adolescents in Europe are overweight (WHO Regional Office for Europe, 2006. One-third of these individuals are obese and one million deaths occur annually as a result of weight-related illnesses. These findings among children and adolescents are quite alarming (WHO Regional Office for Europe, 2006. The prevalence of overweight and obesity among children increased tenfold from 1970 to 2006. The WHO Regional Office for Europe urges the international community to act on addressing this issue with the goal of achieving positive change among this group by 2015. The WHO also recommends that the measures take place within schools - a place where students spend a majority of their days (WHO Regional Office for Europe, 2006).

In Germany, 15 % or 1.9 million children and adolescents between the ages of 3-17 years old are overweight and 6.3% or 800,000 of these are obese (Kurth &Rosario, 2007) These results were obtained from The German Health Interview and Examination Survey for Children and Adolescents (KIGGS) from 2003 to 2006. Since 1980 the share of overweight and obese children and adolescents increased approximately 50%. Studies show that the prevalence of overweight and obese children increases with age (Kurth et al, 2007). At the age of 3-6 years 9% are overweight and 2.9% are obese, but at the age of 14-17 years 17% of the youth are overweight and 8.5% are obese. Furthermore, studies also revealed those children and adolescents with immigrant backgrounds, those from families with lower socioeconomic conditions, and those from a mother who was overweight or obese had an increased risk (Kurth et al, 2007). The study records the following risk factors for overweight and obesity: parental overweight, high birth weight, inadequate sleep, less physical activity, excessive time watching television and playing on personal computers. Additional risk factors included a mother who smoked during pregnancy, excessive caloric intake and psychological factors. (Kurth et al, 2007).

The KIGGS-Study examined physical activity among children and adolescents and concluded that a quarter of the German children between 3-10 years were not engaged in regular sports indicating participation in sports activity less than once a week (Lampert, Mensink, Romahn & Woll, 2007). At the age of 11-17 years, 10.1% of boys and 21.5% of girls did not participate in regular sports activities. The findings of physical inactivity were the highest among individuals from immigrant backgrounds, lower socioeconomic status and individuals from the former East Germany. The researchers concluded that only one-quarter of boys and one-sixth of girls participated in sufficient sports activity (Lampert et al., 2007). This indicates only a few children were in accordance with the recommendations of the WHO, which states; children need at least 60 minutes of moderate intensity physical activity each day and at least twice a week, this should include activities to improve bone health, muscle strength and flexibility WHO Regional Office for Europe, 2006.

The Research Institute of Circulation and Sports Medicine and the Institute of School Sports and Sports Development of the German Sports University of Cologne indicate that 80% of children up to age 15 are active in sports clubs (citation?). However, the findings also indicate that the amount of daily physical activity diminishes from three to four hours a day during the 1970's to one hour a day currently. This study reviewed health behaviour based on a twenty year time-frame from 1980 to 2000. The overall study illustrated a decline in fitness activity between 10% and 20%. These two scientific Institutes list the following reasons for these findings: urbanization; high level of technology; and absence of a familiar exemplary function. The Institutes also indicate possible rationale for children such as agitation, unskilful, lack of enthusiasm for activities, emotional liability, and a lack of concentration. Their conclusion for the future interventions is to offer sufficient attractions of exercises and expedient leisure facilities. (Grac et al., 2006)

United States

According to the National Health and Nutrition Examination Surveys performed from 1976-1980 through 2003-2004; the prevalence rate of overweight preschoolers aged 2-5 years more than doubled, increasing from 5.0% to 13.9%. The researchers also noted an increase among children between the ages of 6-11, where the rate surged from 6.5% to 18.8%. The prevalence rate continued a similar trend when adolescents between 12-19 years of age revealed a tripling in the percentage from 5.0% to 17.4% (Odgen et al, 2006).

The data becomes more daunting when distributed among racial groups. As with various health issues within the United States, the African American population along with other ethnic minority groups often experience a greater impact in

regards to a health or disease condition. Among adolescent girls between the ages of 12-19 researchers found a prevalence rate of overweight was 25.4% for African Americans, whereas the rate among their white counter parts was 15.4% (Odgen et al, 2006). The comparison among adolescent boys and racial/ethnic distribution was more homogenous. According to NHANES data the prevalence rate among boys between 12-19 years old for whites and blacks was 19.1% and 18.5%, respectively (Odgen, et al, 2006). The Council on Sports Medicine and Fitness emphasize that the pediatric obesity is an epidemic that must be addressed by a healthcare team in order to be more effective (Council on Sports Medicine and Fitness, 2006).

Current Role of Outdoor Education/Recreation in Promoting Healthy Schools

Canada

In addition to the recently mandated British Columbia Food Guidelines, new legislation will require an increase in the amount daily physical activity in every school for every student by September 2008. Kindergarten – grade 9 students will participate in at least 30 minutes each day and grades 10-12 will participate in at least 150 minutes each week. The types and scheduling of the increased physical activity is at the discretion of administrators and teaching staff of individual schools. In addition to the 'traditional' physical education courses where the focus is on team sports an increasing number of schools in British Columbia are offering their students an opportunity to participate in outdoor recreation and education. Benefits of outdoor recreation include a possible curb in the rising health care cost along with an "increase in self-esteem/ confidence, providing youth with lifelong physical activity skills, positive affective development, enhanced social development, environmental awareness, and stress reduction" (Dismore & Bailey, 2005, p.14).

Germany

A German newspaper for doctors "Deutsches Ärzteblatt" presents the results of the Children Health Intervention Trial Study (CHILT), which examined the relationship between parental leisure time behaviour and physical activity of their children at the first year of school in Germany. Children with physically active parents participated in more sports during their free time and children with the most active father had the lowest body mass-index. In contrast to this finding, children from physically inactive parents engaged in less sports activity in their leisure time. The authors of this article recommend that one part of prevention has to take part in the families as well, because the parents have an important influence on their children. (Graf et al., 2003) Therefore, teachers have to integrate the parents in Health Education at school, to reach children and young people and to influence their leisure time choices. However, it is also very important to give children enough activity time at school, if the parental home is inactive.

In 2006 the "Deutsches Ärzteblatt" reported on problems with therapy and prevention measures of obesity and overweight in a group of children and adolescents. For the authors it is insufficient to use only strategies of behavioural therapy in the fight against the epidemic of obesity. To be successful in this fight the authors advocated for a solution that incorporated the cooperation of the whole community. They established a group of professionals including Public Health experts, doctors, and economists within the food industry, media personnel, and politicians were recruited to help make the program more successful. (Muller et al., 2006).

Germany does not have an interdisciplinary team and measures at the society level jointly working in all federal states. There are various school projects in all the federal states and they are sponsored by different companies or health insurance companies. All these projects such as "Bewegungsfreudige Schule NRW", "OPUS NRW", "Netzwerk gesundheitsfördernde Schule", "Gut drauf", "Anschub" introduce more space for movement in classrooms, a redesign of schoolyards, and an expansive organization of school-breaks, integral physical education, and attractions for recreation (School Sports and Education, 2007).

United States

There is an ongoing debate that schools should play a role in addressing the pediatric overweight crisis. Healthy People 2010 initiative, a national health promotion campaign in the U.S., has included four objectives that focus on the role of schools addressing physical activity among children. The four objectives include schools having established specific physical education requirements, increased daily physical education activities, increased student participation and access to physical activity venues outside of school hours (Healthy People 2010, 2000).

There is great concern that due to limited budgets, various political agendas, school infrastructure, built environment, and the lack of teachers or qualified personnel these objectives will be difficult to ascertain. In the United States the current focus by the Bush administration is the campaign of "No Child Left Behind", which is an initiative that has led to many schools shifting their

focus to primarily academic performance. This shift in focus has occurred due to the fact that schools are given a grade that distinguishes their academic status, schools will low grades may undergo professional development training and possible school closure and restructuring depending on each case. (The Strom Thurman Institute, 2003) This trend continues and is hindered by limited scientific literature that supports and illustrate that continuous physical activity does have a positive impact the academic performance of students.

According to the Healthy People 2010 coalition, in 1994 only 17% of all junior high schools and 2% of all high schools had daily mandatory physical education (Healthy People 2010, 2000). Based on the Youth Risk Behavior Surveillance System (YRBSS), the findings indicated that in 1999 only 29% of students in 9th to 12th grade participated in physical education on a daily basis (Healthy People 2010, Section 22.6, 2000). This data indicates that the role of physical activity within the school environment is nearly non-existent in most schools.

The government has made an attempt to address the problem of inadequate physical education programs in school by introducing a public law under section 204 of the Child Nutrition and WIC (Supplemental Nutrition Program for Women Infants and Children) Reauthorization Act of 2004. This public law states that each educational institution that participates in the federal school lunch program must have a "local wellness policy" (School Nutrition Association, Section 204, 2004). The law also indicates that the implementation process of the wellness policy should be one that is measurable, which may be of vital importance to not only indicate compliance and funding but to also possibly assess effectiveness of intervention strategies.

The importance of this law was recently reinforced based on the findings of a series of studies published in the fall of 2007 examining various physical activity programs in schools in the US. The results of one of the studies published in the Journal of School Health examined physical education curriculum for 988 elementary, middle, and high schools. The results indicated that although many schools had adopted a policy regarding physical education, many did not provide daily physical education activities and of those programs actually offered many students were able to obtain exemptions for various reasons including disability (Lee, Burgeson, Fulton, & Spain, 2007).

Current Non-traditional Outdoor Recreation Programs

Canada

Throughout British Columbia there are a number of unique programs both in and out of public schools that offer youth a chance to participate in a variety of outdoor recreational activities. The uniqueness of outdoor recreation is just that, it occurs in the great outdoors but, at times due to various constraints, access to these activities may be a challenge. Complications may arise due to transportation concerns and often the cost associated with some of the mainstream activities such as skiing or snowboarding, both very popular on the West Coast.

Two successful programs are described, which have* addressed some of these concerns. This is not to reduce importance of other activities such as trail walking, swimming, hiking, and canoeing that are readily available within city limits. It is just meant to highlight the fact that through a coordinated approach of various members of the community many adolescents may benefit. "Young people identify lack of money and difficulty in accessing activities a major barrier to their participation. Researchers similarly identify economic inequalities as one of the major factors shaping patterns of youth participation" (The Canadian Council on Social Development, 2001, p.7). It is often those from lower socioeconomic areas that can benefit the most from these programs.

The first program is offered through a local high school - Enver Creek (www.envercreek.sd36.bc.ca). A few years ago a number of teachers realized the need to offer a program that would provide students with outdoor activities (skiing/snowboarding) that they may otherwise never a have a chance to experience. There were two main barriers to student participation. The first barrier was related to the fact that the school is located in an area with a high Indo-Canadian population. This is significant as research has continually indicated "social and cultural barriers are thought to be significant (to recreation participation) as children from different ethnic groups may not be familiar with some of the activities being offered and may not feel comfortable participating" (The Canadian Council on Social Development, 2001, p.10,). In addition many of the "western" activities are not as socially acceptable in other cultures. The second barrier was related to the cost associated with the outdoor activities. As a result of the need, the Ski/Board club was formed. The intentions of club organizers were to provide students with an experience they could turn into a lifestyle or, at the very least, participate in an activity that had the potential of lifelong health benefits. The club was open to all staff members and students of the school. There were also a number of seats reserved on the bus for any parents interested in participating. The question of cost was addressed when the school

formed a partnership with Whistler/Blackcomb Mountain and Ride Tribe Ski School. Through these community partnerships, the students were offered drastically reduced rates on lift tickets, rentals, transportation, and meal vouchers. Furthermore, the Parent Advisory Council (PAC) was also able to offer a student further financial assistance if needed.

A second successful program is the "Chill" program (http://www.chill.org). The founders of Burton Snowboards, launched Chill in 1995 in Burlington, Vermont to bring snowboarding to youth who otherwise wouldn't have the opportunity., The program has grown to include 14 different cities across North America ad has so far impacted the lives of some 12,000 youth. In 2005 Chill expanded to British Columbia where a partnership was formed between Vancouver Parks and Recreation along with Burton snowboards, Bell Canada, and 2010 Legacies Now. In addition to offering disadvantaged inner city youth aged 12 - 24 a chance to experience snowboarding it also provides them the opportunity to learn about patience, respect, persistence, courage responsibility, and pride. "Chill" offers youth everything they need for a true mountain experience including transportation, lift tickets and instruction.

Germany

A successful school program for prevention against overweight and obesity is "Die Bewegte Pause" (The Moving School-break) (insert website if available) accompanied by nutrition lessons. During the big school-breaks, the teachers offer games etc. to the children.

Another program that is being promoted among German children that promotes physical activity is the Kinderturnen Club. The club gymnastics physical education club is geared toward young children The program establishes various incentives to recruit participants including free membership for children between 4 and 10 years old (Kinderturnen Club, 2004; Deutsche Sportjugend, 2007).

The Sport Youth NRW – Project Heavy Mobile is a program established to promote exercise, sports and play for overweight children. Project Heavy Mobile is just one of the many sports/activity related programs that the Sports Youth NRW sponsors, additional programs include Sports in Full-day and Movement Education. The goal of the Sports Youth NRW is to provide children and adolescents with a varied approach toward exercise and physical activity (Sport Youth NRW, 2002; Deutsche Sportjugend, 2007).

The Sport Youth Mecklenburg Vorpommern is a program that is geared toward children and adolescents. The program is collaboration between schools and sports club. The activities that some of the youth engage in including canoeing, basketball, soccer and the sports-mobile; equipment that is mobile such as inflatable castles and slides (Sport Youth Mecklenburg Vorpommenern, 2004; Deutsche Sportjugend, 2007).

United States

The concept of out-door recreation activity is currently being examined by health professionals as an alternative method to promote physical activity among adolescents who are often more interested in computer games and the internet. There are various campaigns that are being introduced to various school environments, but many are usually conducted by community agencies and local park districts. A program that is currently performed in schools in the state of Maine is called "Winter Kids." (Winter Kids, 2008) (http://winterkids.org/index2.html). The program is a collaborative union between a local school and a non-profit organization – Winter Kids. The program is primarily geared toward 5^{th} – 7^{th} graders, introducing them to an alternative type of physical activity. The students along with their parents are encouraged to participate in a variety of outdoor "winter" physical activity including skiing, snowboarding, and ice skating. The members of the non-profit group provide teachers with a curriculum based on the activities that facilitates students' learning experience while assisting with student safety when excursion occurs (Winter Kids, 2008). Unfortunately there is currently no scientific data that assesses the impact of the Winter Kids program. However Principal J. Martin from St. Francis School in Maine (personal communication, no date available) emphasizes that increased physical activity and some weight loss among obese children has been noticed among students participating in this program.

An additional program that is performed within the school environment is a program sponsored by the New York City Youth Health Coalition. This program is both a community and school-based initiative based on improving the health of students in kindergarten to 12^{th} grade. The students are encouraged to participate in a variety of physical activity programs listed in a brochure. The choice is the student's and financial arrangements are available if activities are fee-based. A key component to this program is that for some activities children may participate during hours outside of school. The American Heart Association sponsors two of the programs Jump Rope for your Heart and Hoops for your Heart. The incentive for participating in these programs not only includes the benefit of physical activity, but students and schools who participate receive various health education tools and additional

gifts (New York State Physical Activity Program, 2004).

According to researchers the setting of a physical activity program positively impacts behavior outcome, therefore indicating the importance of alternative choices (Strong et al., 2005). There are several initiatives to incorporate physical activity in non-traditional settings for students. The Promoting Lifestyle Activity for Youth program (http://azdhs.gov/phs/physicalactivity/play.htm) based in Arizona shifted the responsibility of students meeting physical activity requirements from educators to the students (Arizona Department of Health Services, 2005). The students were allowed to engage in various physical activity programs and their participation was monitored by using pedometers, body-mass index and an attitude assessment. According to researchers, the program resulted in increased physical activity participation among students, especially girls (Pangrazi, Beighle, Vehige, & Vack , 2003).

Future Direction

It is important that the health problems of children and adolescents are addressed. Health professionals, educators, policy-makers, and parents have to be more proactive and collaborative in tackling the current health crisis among our children. There is a need to review and shift views outside the box in regards to physical activity programs. The changes within industrialized nations whether it is societal, environmental, political, and economical all impact the lifestyle patterns of their citizens. In this paper the trends regarding the overweight and obesity problems among Canada, Germany, and the United States are all consistent. The findings clearly indicate that this health issue is one that has to be addressed rapidly and strategically.

There is a new approach in promoting physical activity, that is, the move toward outdoor recreation programs. There is a possibility that the regimented programs of the past are not as engaging considering the competition with video games, the internet and computers. Educators, parents, policy-makers and healthcare teams have to approach the concept of physical activity from the view point of the child. This transition to outdoor recreation activity is going to be a challenge for many, including professionals such as urban planners and policy-makers in regards to the built environment. The idea of encouraging children to walk or ride their bicycles in their neighborhoods that lack sidewalks is an immediate hindrance and safety hazard.

Of the programs and studies reviewed regarding outdoor recreation programs, the concept seems positive and promising. However, only few studies were available that actually examined the effectiveness of this style of "outdoor recreation" school physical activity. There is an urgent need for additional evidence-based research to analyze success rate of this new methodology.

The need for parental involvement is of significant importance. Children often emulate the behavior of their caregiver, therefore a parent that does not exhibit a desire for or participation in physical activity programs may have a direct influence on their child's involvement. The idea is that a parent that embraces physical activity may be more likely to encourage and ensure their child's participation in some form of sport activity.

Policy-makers have the capacity to positively influence permanent behavior change among this group. The involvement of policy-makers may include the development of mandatory physical activity programs both within and outside the boundaries of educational institutions. Policy-makers have the resources to establish agreements with organizations such the National Park Service, home owner's associations, and state and local governments requiring the availability of specific physical activity initiatives for all community residents.

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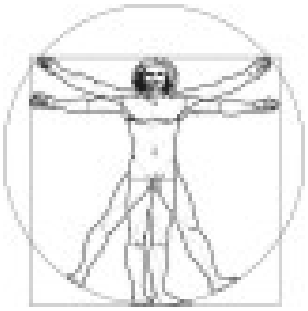

ABOUT THE AUTHORS

Kea Scheewe (keascheewe@msn.com) is a student at the University of Cologne (Germany). Jeet Sujan (Sujan_J@sd36.bc.ca) is a graduate student at Simon Fraser University in Burnaby, British Columbia (Canada). Stephanie Wade (sgwade77@hotmail.com) is a doctoral student at the Robert Stempel School of Public Health, Florida International University, Miami, Florida (United States). An earlier version of this paper was presented in May 2008 at the 10th Health Education and Injury Prevention Course and Field Conference, Cologne, Germany.