

## Promoting Rope Skipping at Hong Kong Schools with Low and Mid Socioeconomic Statuses: An Ecological Perspective

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### Abstract

A School-based intervention program that includes Train-the-trainers, accessibility to resources and recreational physical activity was provided and tested using an ecological perspective. This cross-sectional study explores the views and relevant experiences of students, teachers, and school principals in promoting rope skipping or physical activities at schools. Eighty students aged 9 to 15 years, 19 teachers, and two school principals from 20 schools were invited for semi-structured interviews after the interventions to determine their perceived program effectiveness. Interview themes were coded and analyzed using the content analysis. Four themes regarding the promotion of the skipping rope intervention emerged. At the individual level, the intervention improved the self-confidence of the students. Some students felt more competent when skipping in a team. The intervention also promoted social networks among students that enabled them to become more physically active. At the school level, the provision of ropes and a confined space facilitated the skipping rope activities and skipping rope culture of the students. Finally, at the school policy level, the reception of a new sport supported positive changes in the physical activity of students. The ecological model is useful in elaborating qualitative studies in Chinese societies. Skipping rope may help promote physical activity for students in areas with low socioeconomic status. Teachers and skipping ambassadors acted as the key personnel who enhanced the quality of the program.

**Key Word:** Physical Activity, Low Socioeconomic Status, Rope Skipping, Ecological Model, School-based Intervention.

### Introduction

Physical activity (PA) is essential for the prevention of various chronic diseases and is a critical part of the overall health of an individual (Jansen & LeBlanc, 2012; Tremblay, LeBlanc, & Kho., 2011). Large proportions of age-related decline in PA among children and adolescents in western countries have been reported (Belanger, Gray-Donald, O'Loughlin, Paradis, & Hanley., 2009; Kjonniksen, Torsheim, & Wold, ., 2008; Nelson, Neumark-Stzainer, Hannan, Sirard, & Story., 2006; Salmon, Ball, & Crawfor., 2005). Hong Kong is no exception to this trend (Chow, McKenzie, & Louie., 2008; Ha, Abbott, Macdonald, &

Pang., 2009; Mak & Day, 2008). The low level of PA is probably the result of reduced multiple domains, such as the decline in the quality of physical education, organized sports (Ha, Macdonald, & Pang., 2010; Buliung, Mitra, & Faulkner., 2009), and free playtime (Sirard and Slater, 2008). Several strategies were proposed to counteract low levels of PA. School-based interventions already achieved certain levels of success (Dobbins, Corby, Robeson, Husson, & Tirlis., 2009; Kriemler et al., 2011; Sallis et al., 2001; Salmon, Booth, Phongsavan, Murphy, & Timperio., 2007; van Sluijs et al., 2007;). School-based interventions may result in corresponding improvements in the school-based, out-of-school, and total PA levels (Kriemler et al., 2011).

PA levels in schools increase during periods before school lessons start and during recess time (Ridgers, Fairclough, & Stratton, 2010; Ridgers, Saint-Maurice, Welk, Siahoush, & Huberty, 2011; Ridgers, Stratton, & Garicough, 2006; Ridgers, Stratton, Fairclough, & Twisk, 2007). School-based strategies have been successful (Ward, Saunders, & Pate., 2007), but the optimal approach for increasing PA levels has yet to be identified. Thus, researchers focused on school policy and the environment of the school playground to find better methods for increasing PA within schools (e.g., Bocarro et al., 2011). Several strategies, such as providing more space to play and using competent supervisors to promote PA, were suggested (Cardon, Van Cauwenbergh, Labarque, Haerens, & De Bourdeaudhuij., 2008). Furthermore, altering the playground environment by marking the ground and walls and providing additional portable equipment were investigated, although these studies yielded mixed results (Cardon et al., 2008, 2009; Haug, Torsheim, Sallis, & Samdal., 2010; Laningham-Foster, Foster, & McCrady., 2008; Verstraete, Cardon, De Clercq, & De ourdeaudhuij., 2006).

## Background

Hong Kong, a Special Administrative Region of China since 1997, is a densely populated urban city. Schools were built as multi-storey buildings where open areas for PA are usually limited. Currently, related literature regarding the effectiveness of strategies needed to increase PA levels in schools with limited spaces and resources is lacking. This is of particular relevance to Hong Kong, where there is a high population density outside of the school environment as well as primary and secondary schools whose playgrounds are also relatively smaller (Chow et al., 2008; Johns & Ha, 1999). Therefore, innovative strategies must be implemented to address such problems. Furthermore, students from lower socioeconomic areas are at an increased risk of obesity (Stamatakis, Zaninotto, Falaschetti, Mindell, & Head., 2010); thus, specialized but simple solutions are essential to address this problem (Lubans, Boreham, Kelly, & Foster., 2011; Michie, Jochelson, Markham, & Bridle., 2009). One solution that can potentially address the issue of limited physical space as well as factors related to low socioeconomic status is rope skipping. Rope skipping is a culturally popular sport in Hong Kong, and has many potential physical, social, and psychological advantages when applied within the school environment (Ha, Wong, Chan, & Fishburne, 2006). Furthermore, it is a high intensity activity (Laurson, Brown, Dennis, & Cullen., 2008; Ridley, 2008), which means that more time can be spent in moderate-vigorous PA (MVPA) during PE lessons and the students' free time.

One way of conceptualizing the interdependence among children's behavior within schools and their environment is through an ecological approach (Lohrmann, 2010; Sallis et al., 2001; Sallis et al., 2006; Ward et al., 2007). Ecological frameworks (Sallis & Owen, 2002) are unique in acknowledging multiple levels of influences, which foster children's PA. Such a framework includes five constructs as follows: (1) intrapersonal (within individuals), (2) interpersonal (among significant others), (3) organizational (among school and other organizations), (4) community or environmental (facilities and equipment), and (5) policy (school providing access to and support for PA). Given that the ecological frameworks (Sallis & Owen 2002) are unique in acknowledging multiple levels of influences on promoting health-related physical activities using quantitative methods (i.e. surveys) only a few studies used the qualitative method, such as focus groups and semi-structured interviews. Therefore, by adopting the ecological model, this study

attempts to examine the views and relevant experiences of students, teachers, and school principals in promoting rope skipping or physical activities at schools.

## Method

### Participants and Procedure

To examine the effectiveness of the **STAR** skipping program, a school-based intervention, which includes Training-the-trainers (i.e., PE teachers, student sports leaders, skipping coaches, and ambassadors), promoting the accessibility to resources (ropes and activity zones) and promoting recreational PA (PE lessons and recess periods) was implemented and tested. Participants in this study comprised a subsample of school children who participated in a larger study (n=1108 from 20 schools) entitled **Coca-Cola Rope Skipping STAR Program**. To initiate and implement this health and exercise promotion program at schools, invitation letters were sent off to 8 of 18 Hong Kong districts that had schools located in areas populated by families with low- and mid-level social economic status (Census and Statistics Department, HKSAR 2010). A total of 35 schools were eventually recruited for review, and of these, 20 schools were eligible for the study, according to the matching variables. The 20 schools were then randomly assigned either to an intervention or to a comparison group according to 5 matching variables included (i) socioeconomic status, (ii) co-educational school setting, (iii) class size (n=30-40), (iv) personal PA spaces during PE lesson or recess periods (i.e., one standard basketball court size: 15 meters x 28 meters) and (v) active recess school policy. In each pair, a coin toss was used to randomize schools to either the intervention or comparison (delayed intervention) group. Ethical approval of the study was obtained from the lead author's host university prior to data collection. Participating students (n=1108) from the 20 schools received a free short-handle rope as a souvenir for their participation in this project. Apart from providing free ropes, 10 schools among the comparison groups of the study received no other support during the research period (i.e., 16 weeks). Of the 10 schools from the intervention group, a 4-week rope skipping PE lesson was required and implemented into their regular school curriculum with the components listed below:

#### Rope skipping PE lessons

The principal investigator (PI) of this present study invited coaches from the Hong Kong Rope Skipping Association (HKRSA) to develop a structured rope skipping teaching manual bundled with DVD learning materials. The purpose was to create a program to help teachers learn ways by which they can teach rope skipping within a regular 4-week period of PE lessons. Contents of the teaching and learning materials included the following: (i) demonstrations of different rope skipping styles, rope skipping curricula, lesson plans and assessment criteria; (ii) useful tips that can help teachers establish interest in rope skipping for groups during recess or after school periods at a confined school area; and (iii) a DVD that students can view with a laptop computer during recess or after school periods.

#### Workshops and a day camp for school teachers and student leaders

Two workshops (a total of 6 hours) and a one-day skipping camp (6 hours) were arranged from February 2012 to May 2012. The workshops and day camp provided training in basic rope skipping to over 30 teachers and 98 student sports leaders in the target primary and secondary schools. Teachers participating in the workshops received a teaching manual and a demonstration DVD to enable them to teach rope skipping during PE lessons and to establish a rope skipping corner at school. The student leaders helped set up a rope skipping corner in their respective schools and shared the fun of jumping rope with their fellow schoolmates.

#### Rope skipping ambassador scheme

The HKRSA trainers offered assistance to PE teachers with regards teaching rope skipping. The trainers performed skipping demonstrations for two-hour sessions at schools during the research period. A total of 16 rope skipping ambassadors visited participating schools to perform skipping shows and promote the concept of active schooling.

#### Rope skipping recess

To develop an atmosphere of active schooling, intervention schools were encouraged to set up a rope skipping corner or a confined area where students can practice rope skipping during their recess period, lunch, or after school between March and July 2012. Each student received a booklet and an exercise diary, in which to record the frequency of their rope skipping activities and help them make rope skipping a part of their regular exercise.

#### Data Collection

This study used a cross section of perspectives from teachers, principals, and students who volunteered to participate. A total of 80 students (42 males, 38 females), 9 to 16 years, 19 teachers (10 males, 9 females), and 2 school principals (both males) from the 20 eligible schools agreed to take part into semi-structured interviews after the intervention program. Written consent forms were obtained from school principals and parents prior to the commencement of the study. Principals and teachers were interviewed individually, whereas focus group (3 to 4 students) discussions were used to collect data from the students. Each of these interviews took 40 to 60 minutes, and all were held from June to July of 2012.

Based on the ecological frameworks, each interview began with a discussion of the study's purpose. Participating students and teachers were asked to describe in detail the individual and other factors that shaped their knowledge and behavior in relation to their PA participation in their respective schools (Table 1). The following constructs of the framework were used: (1) intrapersonal (within individuals), (2) interpersonal (among significant others), (3) organizational (among school and other organizations), (4) community or environmental (facilities and equipment), and (5) school policy (access to and support for rope skipping or other physical activities).

To ensure that questions were appropriate and presented in a way that would elicit detailed information from interviewees, the interview protocol was reviewed by an expert panel of five schoolteachers who had served in local school settings. All interviews were recorded on audio tapes. After each interview, the trained research assistants transcribed the interview data in order to maintain the rigor and validity of the research as well as to guarantee the quality of data (Patton, 2002).

#### Data Analysis

Interview data were transcribed verbatim and were organized with the use of NVivo8. Content analysis (Patton, 2002) was used to analyze qualitative data. To ensure consistency, each interview was read and manually coded by the principal investigator at the initial stage. Subsequently, data were coded based on emerging themes that best represent that particular segment of data. The PI reviewed all transcribed data based on the general themes and conducted a secondary review. Multiple subcategories of data were coded. After the themes and related codes were identified, they were reviewed and confirmed by a co-investigator. The two reviewers agreed that diverging from the original coding was unnecessary, and proceeded with subsequent analyses. Separate data libraries were created for students, teachers, and principals. Initial responses were categorized and grouped to allow for the development of themes. To increase the likelihood of the accuracy and appropriateness of coding, recoding was allowed to take place at any time during the data analysis (Patton, 2002). The trustworthiness of the present study was established through member checking (Merriam, 1998), and analyst triangulation (Patton, 2002) was used to secure the validity and the intercoder reliability (Weber, 1990).

Constructs of ecological framework were used to collect students, teachers, and the principals' views on the following; (1) students' physical, psychological, and social benefits from rope skipping or PA; (2) other significant factors, including parents, teachers, coaches, skipping ambassadors and student sports leaders; (3) sports organizations inside and outside of school; (4) school environmental support (i.e., facilities and equipment); and (5) school policy (access to and support for rope skipping or other forms of PA). After the transcription of interviews, the PI reviewed all data based on the aforementioned themes. Multiple subcategories of data were then coded via a secondary review of the data by the same person. If a theme emerged that did not fall within any of the abovementioned categories, a new category was created. After these themes and their subcategories were established, they were reviewed and confirmed by a second investigator until agreement between the two reviewers had been guaranteed.

## Results

In all, 80 students, 19 teachers, and 2 principals participated in this study; 4 themes on how intervention promoted rope skipping emerged. We analyzed the data from four levels, namely, (1) individual level, (2) social networks (among people and/or organizations), (3) school environment, and (4) school policy.

### *Individual Level*

#### Students' views towards the rope skipping promotion program

A total of 80 students (42 males and 38 females) agreed to take part in the interview after the intervention program. Among the participants, 43 were primary school students, of which 22 were males and 21 were females. A total of 37 secondary school students participated, of which 20 were males and 17 were females. The comparison school participants comprised 37 students, whereas 46 came from intervention schools. Among the 80 students who expressed their views on the skipping program, 45 were from the intervention group and 35 were from the comparison group. The majority of the intervention students (37 out of 45) said that they had enjoyed learning rope skipping and found that the skills they learned from the workshops were both challenging and enjoyable. They further elaborated that skipping rope did not require much space, which allowed them to skip either at school or at the open areas of their living places. One female student (intervention) said:

In the past I was not good at sports, but after having taken part in the program, I am now confident in my ability to skip rope. I never thought I could compete in sports, and I now have a chance to join a school competition with my fellow students. I have felt a great sense of achievement every time I have learned some new skipping trick. I like the team spirit, and we work together towards a common goal. The experiences enhance our friendship.

Another male student (intervention) stated,

My skill level in rope skipping has been largely improved because of this program. The more I practice, the longer I can skip rope. I feel that my cardiovascular endurance improved, and I hope I can learn more advanced skills through the program. I like the DVD my PE teacher showed us during our PE lesson. I also learned some new skills when I watched the ambassadors' performances during their school visit and through the DVD.

Students of the comparison group generally look forward to the program. They said they would like for new sports to be promoted at schools. The students were given a free rope from the program and reported trying rope skipping a few times on their own at their respective schools; however, they eventually stopped because they did not receive further instructions nor learned new tricks.

#### Teachers' and principals' views

A total of 11 teachers (7 from the intervention group and 4 from the comparison group) reflected that most of their students felt competent about rope skipping after joining the program. Although schools with comparison groups did not receive any personnel support, such as trained coaches and ambassadors, their students were willing to do rope skipping by themselves when free ropes and confined spaces at school were provided during recess time and after school hours.

Meanwhile, according to the teachers' observations, primary school students from the intervention schools liked rope skipping and tried different tricks after watching the provided DVDs. Some girls of the intervention schools told their teachers that rope skipping was more fun and enjoyable than basketball or track and field. Younger students (primary) enjoyed skipping alone, whereas older students (secondary) preferred to skip in a group with their fellow students. All teachers from the intervention group responded that both boys and girls enjoyed rope skipping. One teacher (intervention) said:

Skipping is a high impact exercise that can benefit students' physical activity levels. Our school's sports facilities and equipment are very limited. Ropes are cheap and portable, which allowed us to promote the sport easily. Boys enjoyed learning new and challenging tricks and practicing alone, while girls preferred to skip alone or in a group regardless of their skill levels. I sometimes joined the students for group skipping activities during PE lessons.

The majority of the interviewed teachers (8 from the intervention group and 7 from the comparison group) reflected that through the skipping program, they found that students became more active and motivated to move during recess periods. They further elaborated that such a program promoted at schools would increase students' awareness of health and further the concept of active schooling. Moreover, the interviewed teachers consistently said that skipping rope was easy to learn and inexpensive.

One of the school principals said:

This is the first time I have approved the participation of an external organization in promoting a sport in our school. I personally think that rope skipping does not require great resources to support, with the rope itself being cheap and portable. More importantly, I saw more and more of my students doing rope skipping during recess periods after joining this program. We started to organize inter-class skipping competitions this year. I hope we can provide more opportunities for our students to gain physical and social benefits by taking part in this easy but vigorous sport.

#### *Social Networks*

#### *Students' views*

In terms of inter-personal and inter-organizational factors influencing students' participation in more exercise, students responded that parents would definitely influence their intentions. However, teachers were still the ones who determined their actions. Older students identified both teachers and their peers as key personnel who can help them form exercise habits. Looking closer at the rope skipping program, all students from the intervention group coincidentally mentioned that the skipping ambassadors were the persons who were most influential. One student said:

The skipping ambassadors are wonderful. They are very stylish and well-trained. After watching their performance in my schools, I wanted to learn from them. They motivated me to skip more because I wish to be one of them after receiving proper training. Their wonderful performances have stimulated my interests and motivated me to skip more.

Most of the students, regardless of their groups, believed that PE teachers were the ones who most strongly motivated them to move and play. They further explained that they enjoyed new sports introduced by their teachers during PE lessons or after school programs. Due to the limited spaces in their schools, the students

found that skipping was an ideal new sport for them. Upon examining the favorite program-related activities of the students, two thirds replied that they liked the skipping workshops and the day camp most. During these activities, students were able to meet new friends and watch the skipping ambassadors of the HKRSA, from whom they could learn new skills. One of the students said:

I have made some new friends after joining the rope skipping workshops. We also chatted over the phone some time and discussed the tricks we learned from the workshops or from other sources. We started to join our own school skipping team. My school hired one of the skipping ambassadors to coach our team.

#### Teachers' and principals' views

Teachers from both groups said that the participation rate at school would have been higher if parents supported and encouraged their children to join the sports program. One teacher stated:

Parents are more concerned with the academic development of their child. Once the results of school work are not satisfactory, they tend to cut the sports-related activities of their children. Without parental support, teachers would have a hard time asking their students to join skipping programs and competitions. Furthermore, parents from low-income groups often restrict their children's PA participation after school, because they often need their children's help to do housework or look after younger children in the family.

Apart from parents, almost all teachers admitted that they played an important role in influencing students to participate in more sports activities. PE teachers generally act as role models, PA motivators, promoters, and organizers at schools. For example, they can encourage students to play more sports by joining some inter-class competitions. Moreover, if teachers are willing to take up more duty posts to maintain skipping zones at schools, students may have more opportunities to skip at schools. All teachers strongly agreed that the workshops and day camp organized by the HKRSA were useful and supportive. Teachers further elaborated that with assistance from the ambassadors or coaches from the HKRSA, they felt more capable of organizing skipping competitions at school. All teachers stated that the teaching materials (provided by the HKRSA) were useful and enriched their knowledge on how to plan and teach rope skipping as part of their PE lesson plans. In addition, more than half of the intervention teachers liked the idea of using DVDs because many rope skipping tricks were too difficult for them to personally demonstrate to their students. In examining the role of other personnel in motivating the students to participate in the program, all teachers from the intervention group observed that the HKRSA ambassadors were the ones who most strongly influenced the students. They confirmed that ambassadors were able to strongly motivate students to skip rope because they can demonstrate highly difficult tricks to them and guide them toward further improvement. Both school principals recalled that the skipping performance hosted by ambassadors was spectacular. One of the principals said:

A rope is a simple piece of equipment, but the boys can play with it very well. The performance (provided by the HKESA) really opened up my eyes about rope skipping. In the past I knew very little about this sport, and I even thought it was just an easy game. After watching the performance, I felt that rope skipping could be widely promoted in my school. It requires little equipment and can provide a lot of fun, but challenging learning experiences to my students. It does not only train physical skills but also nurtures one's creativity and collaboration.

#### *School environment*

#### Students' views

Most students from both groups believed that their schools' limited space and sports facilities were not good enough. One female student from the comparison group said:

Our school is so small, and during recess periods, we can only play table tennis (two tables were placed in the school hall) or basketball (one basketball court). We have to take turns playing table tennis during

recess, the line is long, and we don't want to wait. The basketball court is always occupied by the school team or by other boys. Girls seldom go to basketball courts to play. I choose to stay in the classroom to chat with my classmates.

However, nearly all students from the intervention group agreed that their schools were able to provide sufficient space (such as half of a basketball court) and ropes for them to skip more during recesses (10:05 a.m. to 10:20 a.m.; 11:35 a.m. to 11:45 a.m.) and other times (1:25 p.m. to 1:45 p.m. as lunch break). When the school provided ropes and a designated space during recesses and lunch breaks, more students were able to exercise at school. One male student from the intervention group recalled:

After joining this program, I think our school can provide enough ropes for us to play with. I know these ropes were provided through the program, which consisted of short and long ropes for different practice purposes. The qualities of the ropes were much better than our old ones.

#### Teachers' and principals' views

A total of 16 out of 19 school teachers reported that it was quite impossible for their students to play sports that require a lot of space. Owing to the limited space available for sports and PAs in their respective schools. Instead, teachers must reserve venues and facilities outside of their schools in order to support PE lessons or team sports training. In Hong Kong, most of the schools built before the year 2000 are relatively smaller, and only allocated one basketball court, one volleyball court, and a small cover playground for PE lessons and students' PAs. Both school principals shared that the land in Hong Kong is so expensive and limited; furthermore, all Hong Kong schools have a total student and staff population of almost 1000. Thus, unlike international schools or other private schools in Hong Kong, government and subsidized schools can only provide very limited spaces for students' sports activities such as swimming, tennis, baseball, or fitness training (at a well-equipped gymnasium). Those are the sports rarely included in the Hong Kong PE curriculum. One teacher from the intervention group said:

As rope skipping is fun and requires little space for promotion, my school principal liked the idea very much and agreed to join the program instantly. Since we joined the program, more and more of our students and teaching staff members have skipped together during their free times. Students can either skip in the basketball court or at the covered playground. Although we use little space to move, we found the intensity of the activity to be relatively high.

#### *School Policy*

#### Students' views

When we asked students' views regarding school policies on promoting active schooling, they were all happy with the active recess policy they had at their present schools. Students from both groups reflected that not all Hong Kong schools approved of students playing sports during recess periods, and only sports teams were allowed to use the sports facilities after school. After joining this skipping program, the intervention students became more willing to use the available limited spaces to skip rope during recess and after school. However, they commented that school recess periods are generally too short (only 10 to 15 minutes long) for them to play for as long as they would like. They hoped that their schools would consider extending the length and number of recess periods so that they can skip rope and relax more.

#### Teachers' and principals' views

All teachers and both interviewed principals agreed that the support and openness of the school principals were the determining factors for promoting new sports, such as skipping rope, at schools. When schools can provide a more balanced learning experience to nurture students' intellectual, social, psychological, moral and physical aspects, students can learn more holistically and dynamically. Chinese societies have long

emphasized intellectual growth and development for the youth. Thus, there is an urgent call for schools to consider providing more active and balanced schooling for the new generation.

### **Conclusion and Implications**

This qualitative investigation provided evidence of the effectiveness, as perceived by students, teachers, and school principals, of a school-based PA intervention in schools situated in areas with low to midsocioeconomic students in Hong Kong. The ecological framework was used to identify multiple levels of influences of the intervention. To the authors' knowledge, this is the first study which employed the ecological approach to examine students' PA engagement in Chinese societies. Data from interviews and focus group sessions suggested that the intervention was successful in promoting PA, or more specifically rope skipping at schools. It is evident that the intervention was successful in enhancing students' engagement in PA in schools with limited space and resources. The results support the use of rope skipping as an activity to promote PA in children from families at lower socioeconomic statuses.

Students found the workshops to be challenging and enjoyable (i.e., intrapersonal). However, an effective PA intervention may need to support students' PA at other levels within the ecological framework. Responses from teachers and principals suggest that the provision of low-cost rope skipping equipment (i.e., environmental) and personnel support from coaches and skipping ambassadors (i.e., interpersonal) are also crucial in motivating students to engage in PA. These ambassadors act as facilitators to inspire and support involvement in rope skipping would definitely encourage students' participation in PA and an active school life. It is not surprising that parents also play a significant role in their children's health-related behaviors, yet teachers serve an equally important role in motivating children to become more active in schools. Results from this study are consistent with previous research that suggests teachers could act as a role model to facilitate students' participation in physical activities.

Additionally, instructional technology in education has influenced the way educators plan, design instruction, and assess their students (Gibbone, Rukavina, & Silver, 2010). Technology use has great potential in physical education pedagogy. The use of instructional DVDs to demonstrate rope skipping skills was well-received by students and teachers in the present study. Future interventions should also consider using new technology to promote new skills or activities. Finally, results of this study suggest that limited sports facilities and space, and the lack of administrative support and policy on active schooling may inhibit PA of students during school time. The ecological perspective combines environmental and policy level components rather than addressing a conventional unitary focus on individual-level factors, and could give a better direction to the design of effective school-based interventions for improving children's physical activity participation.

### **Acknowledgements**

Thanks to the schools and students who participated in this research.

### **Funding**

This work was supported by The Coca Cola Foundation 2011-2012.

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Table 1 Interview Protocol Framed in the Ecological Framework

Levels	Questions
Intrapersonal (Individual)	<p>Do you think your students (boys and girls) feel competent about doing physical activity (Skipping)?</p> <p>Do you think your students will benefit from the coca cola Skipping Program? How and what/why?</p> <p>Do you think your students could do skipping or other physical activities for 20-30 minutes at school daily (PE lesson not included)?</p>
Interpersonal (Social)	<p>To what extent do you think the followings influence(s) your students to do more or less physical activity at school?</p> <p>a) Parents; b) Teachers; c) Coaches; d) Ambassadors; e) Student sports leaders</p>
Organizational	<p>To what extent do you think the following organizations influence or can assist to promote/ implement physical activities or skipping at school?</p> <p>a) School; b) Hong Kong Rope Skipping Association; c) The university of the researchers</p>
Physical Environment	<p>Do you think your school has or will provide appropriate space and equipment to students to do physical activities or skip during recess time?</p> <p>How much time was allocated to recesses daily?</p>
School Policy	<p>Do you think your school (policy) support more skipping or/and other sports for students to take part (how much time)?</p> <p>a) Recess; b) Lunch time; c) After school; d) Other times</p>