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Implementing Comprehensive School Health: Teachers' Perceptions of the *A*lberta *P*roject *P*romoting active *L*iving and healthy *E*ating in Schools - APPLE Schools

Approche globale de santé en milieu scolaire: Perception des enseignants du projet APPLE (*A*lberta *P*roject *P*romoting active *L*iving and healthy *E*ating in Schools)

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Childhood obesity is a major public health challenge worldwide and has been linked to numerous health consequences. As such, promotion of health and prevention of disease is a priority. Comprehensive School Health (CSH) is recognized as a multilevel prevention strategy and has been shown to reduce overweight among students; however, there is a need to evaluate the process of implementation. Therefore, the purpose of this study was to examine teachers' perceptions of the implementation of a CSH project, the Alberta Project Promoting active Living and healthy Eating in Schools (APPLE Schools). Participants were 45 teaching staff who took part in focus groups. Teachers identified students as central to APPLE Schools and themes that affected implementation included: building support; defining roles; leadership; embedding in school culture; and engaging stakeholders. Teachers were very supportive of APPLE Schools and had a clear sense of facilitating factors, barriers and solutions to enhance implementation.

L'obésité juvénile constitue un enjeu majeur de santé publique à l'échelle mondiale, ayant été associée à de nombreux problèmes de santé. En ce sens, la promotion de la santé et la prévention des maladies ont pris une très grande

importance. L'approche globale de santé en milieu scolaire est reconnue comme une stratégie de prévention multi-niveaux dont l'aptitude à réduire le taux d'embonpoint chez les élèves a été démontrée. Il importe toutefois d'évaluer le processus de mise en œuvre de cette approche. Cette étude visait à examiner ce que les enseignants pensent de la mise en œuvre d'un projet d'approche globale de santé en milieu scolaire appelé Alberta Project Promoting active Living and healthy Eating in Schools (écoles APPLE). Le projet réunissait 45 membres du personnel enseignant participants à des entrevues de groupe. Les enseignants ont affirmé que les élèves jouaient un rôle de premier plan dans le cadre du projet APPLE; ils ont également identifié divers éléments ayant des incidences sur la mise en œuvre : le renforcement de l'appui; la définition des rôles; le leadership; l'insertion dans la culture de l'école et l'engagement des groupes intéressés. Les enseignants appuyaient fortement le projet des écoles APPLE et avaient une très bonne idée des facteurs habilitants, des obstacles et des solutions favorisant sa mise en œuvre..

Introduction

Overweight and obesity are well recognized as significant health issues impacting Canadians. Prevalence rates have tripled in the past three decades (Tremblay & Willms, 2000). In 2004, 26% of Canadian children were overweight and 8% were obese (Shields, 2005), which is disturbing due to the correlation of obesity with chronic diseases such as type 2 diabetes, cardiovascular diseases, and some cancers; all of which may result in a reduced quality of life (Visscher, et al., 2001). The need for a comprehensive working strategy to prevent further increase of obesity is widely recognized among health professionals and governing bodies. In particular, the deteriorating health of children due to overweight and obesity has drawn attention to the need for effective strategies for schools and families to prevent chronic disease (Stewart-Brown, 2006).

A comprehensive school health (CSH) approach has been shown to be an effective strategy to improve health behaviours including physical activity, healthy eating and positive well-being among children and youth (Lister-Sharp, Chapman, Stewart-Brown, & Sowden, 1999; Stewart-Brown, 2006; Veugelers & Schwartz, 2010; World Health Organization, 2008). CSH supports both individual behavioural change and long-term environmental changes (World Health Organization, 2008) and research has shown that CSH is effective in improving health behaviours and reducing overweight and obesity among students (Veugelers & Fitzgerald, 2005). The Joint Consortium of School Health (JCSH) describes CSH as "an internationally recognized framework for supporting improvements in students' educational outcomes while addressing school health in a planned, integrated and holistic way" (Joint Consortium for School Health, 2008, p.1). The JCSH is a partnership of federal, provincial and territorial governments and is a leader in comprehensive school health in Canada. The JCSH framework encompasses the whole school environment and addresses actions in four inter-related pillars, including: 1) social and physical environment; 2) teaching and learning; 3) healthy school policy; and 4) partnerships and services (Joint Consortium for School Health, 2008). The Alberta Project Promoting active Living and healthy Eating in Schools (APPLE Schools) implements a CSH approach such as the framework described above by positioning a full-time school health facilitator (SHF) into individual schools.

APPLE Schools was implemented in ten schools in and around Edmonton, Alberta, Canada in order to create an environment where the healthy choice is the easy choice and aims to improve students' health behaviours (http://www.appleschools.ca). In the fall of 2007, SHFs were hired, participated in a 6-week training program, and were positioned full-time into schools in January 2008 (Schwartz, Karunamuni, & Veugelers, 2010). The overall aim of the project is to create and sustain supportive physical and social environments that cultivate a healthy lifestyle, where parents, students, staff, and community stakeholders are involved. APPLE Schools is a multidisciplinary intervention approach to CSH and offers a wealth of promising practices built on a strong theoretical foundation for implementation.

School principals, teachers, students, parents, and other members of the school community are the centre of CSH, so effective cohesion between these stakeholders is imperative (Gottlieb, et al., 1999; Mullen, et al., 1995). However, cohesion must also include leadership within the school, particularly among administrators and teachers. While the role of the teacher as a 'leader' or 'champion' of change within school-based projects has been acknowledged (Fullan, 1999; St Leger, 1998, 2000), relatively little research has focused on teachers' perceptions of health promoting practices in schools. Furthermore, although CSH approaches have the ability to be effective, not much is known about the process of implementation and what makes a project successful over time (Armstrong, Waters, Crockett, & Keleher, 2007). Therefore in order to provide a clear picture of ongoing change during the implementation of CSH, there is a need to conduct process evaluations (Cronbach, 1982). The lessons learned from teachers in the midst of implementation offers important lessons for CSH programs. Thus, for this study, we specifically focused on the role of the teacher within the context of the CSH framework, as teachers are essential to make school health initiatives succeed (Ridge, Sheehan, Marshall, Maher, & Carlisle, 2003; Ridge, et al., 2002).

The purpose of this study was to examine the teachers' perceptions of the implementation of the first one-and-a-half years of APPLE Schools utilizing a focus group format. Moreover, because this was the first CSH project to our knowledge to house full-time SHFs within each intervention school, the teachers' perceptions of project implementation (including the role of the teacher) are paramount. More specifically, we were interested in the social context of implementation from the perspective of the teacher and ways in which the implementation could be enhanced.

Methodology

Study Design

Implementation in the ten schools began in January 2008. The current study took place in April 2009, approximately 15 months into the intervention. APPLE Schools is an on-going project that is being evaluated using both qualitative and quantitative methodologies to provide a comprehensive assessment. The quantitative evaluation includes rolling assessments of attitudes, self-efficacy and health behaviours among students, as well as parent and administrator surveys on the home and school environments (for information related to the quantitative data collection, see http://www.realkidsalberta.ca). Qualitative data includes perceptions of APPLE Schools from various stakeholders, including the teachers.

To date, teachers have been interviewed regarding two separate yet intertwined issues, implementation and sustainability. However, for the purposes of this study only data relating to the teachers' perceptions of how APPLE Schools evolved in the schools and how the process of implementation was proceeding, is presented.

Participants and Procedures

The selection process was conducted according to standards established by past literature on focus group methods (Creswell, 2005; Krueger, 1993; Krueger & Casey, 2009; Morgan, 1997). Participants were deliberately sampled (Patton, 2002) where the inclusion criteria for participation was current teaching staff members with a minimum of two months employment in an APPLE school. The SHF at each APPLE school invited teachers to participate in the study via e-mail. Upon agreement to participate, participants were sent an information letter regarding the focus group and a meeting was subsequently scheduled. Prior to the interview, each participant was provided the opportunity to ask further questions about the study and was asked to complete an informed consent form. Approval was also obtained from the Health Research Ethics Board at the University of Alberta as well as from each participating school jurisdiction and school.

Data Collection

We conducted focus groups to gain in-depth information from a range of perspectives (Krueger & Casey, 2009) and to allow for dynamic interaction within the group, providing direct evidence of similarities and differences between experiences (Creswell, 2005; Morgan, 1997). Focus groups are intended to be respectful and not condescending (Morgan & Krueger, 1993) and to create and sustain an atmosphere that promotes meaningful interaction, a willingness to listen, and a respect for opposing views (Owen, 2001). Focus groups are advantageous when the interaction among interviewees will likely yield the best information, when the interviewees are similar to and cooperative with each other, and are also useful when the time to collect information is limited (Creswell, 2009).

The focus groups encouraged group discussion among purposely-selected individuals and were moderated by a member of the research team using a topic guide designed as per standard protocol (Freeman, 2006). The moderator ensured consistency of the questions by following prompts for each question; however, discussions evolved into a less structured format, in which the group pursued its own topics of interest. The moderator was also responsible for managing existing relationships of the participants, creating an environment in which the participants felt relaxed and able to engage and exchange feelings, views and ideas about the asked issues. A note-taker was also present to observe non-verbal interactions, the impact of the group dynamic, and to document exchanges of views as well as the general content of discussion. This supplemented the oral text and enabled a fuller analysis of the data.

The elementary and middle school teachers were asked to describe what changes had occurred at the school level, classroom level, and/or personal level as a result of being part of APPLE Schools. Perceptions of the advantages and disadvantages associated with being part of an APPLE school were also asked, including possible strategies for the second and third year of implementation. The

focus groups (ten in total) lasted an average of 57 minutes and 10 seconds and were audio-recorded and transcribed verbatim.

Data Analysis

Data was analyzed through a process of inductive content analysis following the stages outlined by Miles and Huberman (1994). Initially meaningful segments of information were categorized using coding schema that emerged from the data. A more interpretive approach was used during the later stages of the analysis. Interpretive analysis involves attempting to understand or interpret the meaning of social actions (Schwandt, 2007) to refine and sometimes collapse together the data into larger categories, using a comparative technique (Glaser & Strauss, 1967). In this case, a series of final themes were identified, by constantly comparing meaning units, themes, and categories with other meaning units, themes, and categories to ensure that each category was unique, self-contained, and meaningful.

Data were independently coded and compared for inter-rater reliability to strengthen the overall findings. Analyses and codings were then cross-referenced between two members of the research team. By working as a research team the accuracy and quality of data analysis were improved (Patton, 2002). The researchers also allowed for member checking by providing an overview of interpretations to respondents in order to provide an opportunity to clarify and voice individual concerns regarding the interviews.

Results

A total of 45 teaching staff (n=5 males, n=40 females) from all APPLE Schools each participated in one focus group (ten focus groups in total). A range of two to eight participants from each APPLE School participated. Participants, reportedly, had nine months to 29 years of teaching experience and a minimum of two months to 26 years experience in current teaching roles. Thirty-four participants had undergraduate degrees, five had graduate degrees, and two had college diplomas/degrees. Four did not disclose educational background.

In general, focus group participants identified that students were at the centre of APPLE Schools and as a result participants appreciated and respected the project objectives. One teacher illustrated this theme by saying, "…I think we look at it as we want our students to do better academically, socially, emotionally and everything that the APPLE School project does supports that." The theme of students at the heart of the project was embedded throughout the focus groups and was reflected in the results. Themes that emerged regarding implementation included: building support; defining roles; leadership; embedding in school culture; and engaging stakeholders; and are described in detail below. As well, changes identified by the participants at multiple levels (e.g., student, classroom, school, teacher, parent) as a result of being an APPLE school are presented. Figure 1 provides a visual representation of the results of the teachers' perceptions of the implementation of APPLE Schools based on the key themes identified. This figure incorporates the teachers' standpoint of the student at the centre of APPLE Schools as well as the identified themes and contextual issues relating to implementation. Lastly, a description of challenges and strategies of how implementation could be improved is provided.

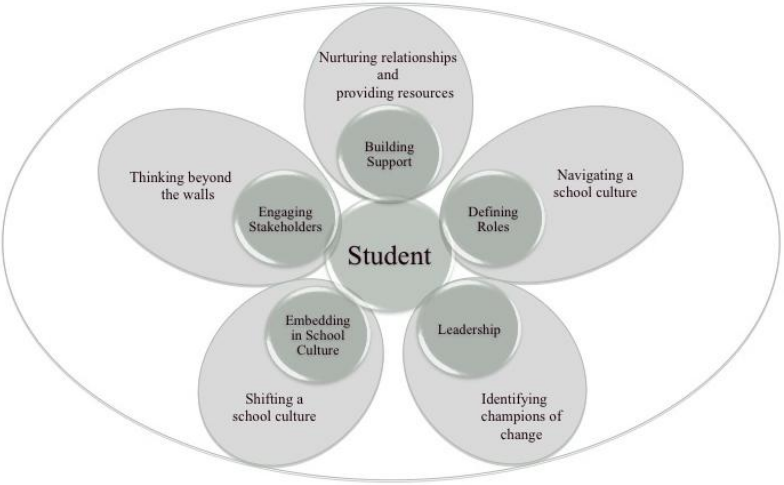

Figure 1. Teachers' perceptions of implementing Comprehensive School Health in APPLE Schools

Changes during APPLE Schools implementation

CSH delivered in the APPLE Schools was designed to transform the school environment by providing teachers, staff and students with the motivation and tools necessary to make changes to eating and physical activity behaviours. During focus group discussions, teachers indicated that slow changes and small steps were making a significant difference to students. Participants recognized that APPLE Schools, and specifically the SHF, was instrumental in facilitating these changes.

> *…I think if it weren't for the APPLE Schools project this um, change wouldn't have happened. It's really precipitated change to have someone come in ah, you know with the vast knowledge and resources um, 'cause teachers and everyone else is busy enough. But um, this [APPLE Schools] was a real force, a real driving force…*

Table 1 shows perceived common changes on different levels across all schools. As the table shows, teachers were aware of changes at all levels, including a commitment to deliver Daily Physical Activity (DPA) and provincial programs (Alberta Education, 2009, 2011a, 2011b) that address healthy eating and active living (HEAL) outcomes (e.g., Framework for Kindergarten to Grade 12 Wellness Education; Physical Education; and Health and Life Skills). As well, there was more integration of HEAL into all subject areas; increased knowledge of HEAL by students and teachers; increased awareness of policies; and the increased awareness of the need for a project, such as APPLE Schools to make these changes happen. The changes identified by teachers were not evident in all schools or classrooms, nor were these changes experienced among all students or all teachers. However, the table offers an overview of the common practices within the CSH intervention.

Table 1
Changes related to healthy eating and active living reported by teachers in APPLE Schools at different environmental levels

	Student	Classroom	Teacher	School	Parent
Healthy Eating	- Increased excitement to try new foods, eating healthy - Healthier lunches and snacks brought and eaten - Being proud of healthy food	- Healthier snacks provided during class parties - Garden in classroom made students excited about vegetation	- Changed reward system from candy to healthy foods or non-food items - More nutritious food for lunches and during staff meetings	- Students and teachers more willing to try new foods	- Healthier lunches provided for children - Appreciation for healthy foods during school events
Active Living	- Increased excitement for physical activity during recess	- Increased Daily Physical Activity (DPA) in classrooms due to the ready-to-go bins - Decreased use of elimination games - Decreased use of cutting DPA as a punishment	- Increased motivation to be more physically active	- Available equipment for physical activity well organized and easy to use	
Healthy Eating and Active Living (HEAL)	- HEAL integrated in language and writing	- Cross curricular implementation of HEAL	- Increased sharing of HEAL activities with students	- Raised awareness of HEAL for staff and students - Healthier school parties - Students and teachers more health educated	- Increased interest in HEAL

Overall	- Students teach students - Students became leaders	- Changed policies	- Change in attitude - Increased commitment to being a role model - Increased creativity	- The school was engaged in project – focus of whole school changed - Developed common language between teachers and students	- Increased participation at school

APPLE, Alberta Project Promoting active Living and healthy Eating; DPA, Daily Physical Activity; HEAL, Healthy Eating Active Living

Implementation of APPLE Schools

*Theme 1: Building support***.** In implementing APPLE Schools, it became apparent that the time spent by the APPLE School staff explaining project expectations and providing support at many different levels helped to create ownership. This was necessary to generate buy-in for the school community and helped to create support for APPLE Schools. Additionally, the time spent by the SHFs developing relationships with the teachers and the school community was viewed as essential. Initially, teachers were concerned that the project was for a short term; however, once the scope and dedication of APPLE Schools was understood, including a better understanding of the project's goals, a higher level of involvement and increased motivation occurred. Teachers indicated awareness that APPLE Schools would be implemented progressively over time and described the process as similar to "planting a seed," "paving a path," or "making new infrastructure," which indicated the element of time as a crucial factor. Once teachers were able to develop a clear understanding of APPLE School's objectives, implementation was viewed as "natural" and HEAL activities were "easily incorporated." Even though some teachers were skeptical at first, one teacher described that when APPLE Schools was

> *…first introduced… I thought it was a surface thing that SHF would come and talk about healthy eating… but then I was very impressed to see all the different [APPLE] projects and the different offerings for the kids… I didn't realize it was that involved… now I'm much more enthusiastic and supportive…*

The flexibility of the intervention was seen as imperative from the teachers' perspectives. Customizing APPLE Schools in order to build upon each school's strengths and needs established a sense of ownership for school staff. Teachers acknowledged an advantage of APPLE Schools was that it allowed the school to build upon existing strengths and assets. As one teacher indicated:

> *Not every school is going to have the same way of doing things [or have] the same issues and needs… so if you can be flexible enough and respond to the things that are happening in the school, you're in. I think the project is more beneficial that way.*

Throughout focus group discussions, teachers acknowledged the need for the intervention and thought that APPLE Schools was contributing to these needs. APPLE Schools "…is timely and that makes it easier for all of us to buy in…", which is fundamental to ongoing success.

All participants from the ten schools believed that APPLE Schools provided them with organizational support, including professional development (PD) opportunities. Teachers appreciated the resources and training provided and indicated that these opportunities allowed for creativity and increased incorporation of HEAL activities into the classroom. The organizational support in the form of PD allowed for increased ownership of the project and contributed to enhanced buy-in and support for APPLE Schools. As one teacher expressed:

> *… I thought it [APPLE Schools] was great. I like that ideas are given for daily phys ed in your classroom. It makes it a lot easier as a teacher to have somebody else giving you ideas… suggestions that are given during the staff meetings of different projects… professional development opportunities that are available…we probably wouldn't have heard about otherwise…*

Theme 2: Defining roles. Teachers conveyed some confusion regarding the role of the SHF within the school setting. While most teachers expressed strong enthusiasm for the efforts of the SHF, some teachers also viewed the relationship between teachers and the SHF as occasionally challenging. In particular, teachers suggested that there is a "need for [the] SHF to understand what a teacher does, there is a gap here and it would be beneficial if the SHF understood the teacher better…"

While many agreed that teachers occupied an important role in APPLE School's implementation, it was also acknowledged that not everyone had the same view regarding these roles. The role of the teacher was viewed as "being a role model for students," "disseminating the information to the children and their parents," and "being excited about the project;" however, the level of involvement in APPLE Schools by the teachers varied from being actively involved in leading initiatives to acting as a support to the SHF. For those that took a supportive role, teachers brought up lack of time to balance competing priorities in the classroom as an important challenge. Numerous responsibilities in terms of teaching and supporting extra-curricular activities were identified by teachers, so many expressed a concern about finding sufficient time to incorporate HEAL activities. The lack of time was also seen as a challenge in context with how to implement new policies, such as DPA and how to use the resources that are available to them. In considering time commitments, one teacher explained that:

> *…Teachers have a lot on their plate to get all the courses done in a set amount of time. We don't want to miss anymore class time, so we have the feeling that we can't fit in HEAL in our class…*

Teachers were also concerned about who had the responsibility to contact and involve parents in APPLE Schools. Many viewed this as the teacher's responsibility, to persuade the parents about the benefits and importance of HEAL, whereas other teachers understood this was the role of the SHF.

Teachers viewed the role of the SHF as someone to learn from and as an important resource for readily available ideas and explanations. Additionally, teachers felt it was the role of the SHF to clearly explain APPLE School's objectives and to delegate effectively. Many participants were positively influenced by the SHF and felt that the SHF was someone who was visible, present, accessible, enthusiastic, open and positive, and creative. Additionally, the SHF motivated the teachers to think about ideas to incorporate into the project, which teachers felt was important in order to empower teachers as participants in implementation. Teachers saw APPLE Schools as an opportunity to learn how to affect change in the school environment and in behaviours.

The presence of the SHF was considered a reminder for the teachers about integrating CSH model into daily practices, and this presence kept them focused on the project. One teacher expressed appreciation for the SHF as a third party perspective in the school, and as "…somebody external coming in to initiate that [APPLE Schools]" and who was "probably a catalyst..." Teachers felt supported in accepting change because suggestions came from a third party.

Theme 3: Leadership. Leadership was identified as a fundamental element for implementation. Teachers from all ten APPLE schools viewed the SHF as the key leader for APPLE Schools. Due to the SHF's full-time presence in the schools, teachers saw the SHF as a change agent and champion that made

changes occur at both the school and community environments. However, teachers suggested that support from the principal and administration was essential for change to occur in the school. As one teacher described, "…I think if you're in a school that didn't have an administrator who felt that healthy, a healthy lifestyle was important the program wouldn't be what it is." Teachers indicated that leadership by the school principal allowed for APPLE Schools to become an essential component of the school's agenda and thus was an identified priority area. Teachers perceived that the school supported APPLE Schools because "from day one" it was "on the school's agenda."

Theme 4: Embedding in school culture. A shift in school culture was identified by the teachers as a positive result of APPLE Schools and viewed as a necessary step for the progress of the school. Teachers indicated that the project was "…not only part of the school agenda, it's something that is part of everyday areas." It was understood that being a health promoting school "…becomes more part of the culture and we [staff] automatically start to do it…" in daily teaching practices. The embedded culture of APPLE Schools was seen as a way to encourage HEAL activities both for the students and staff of the school, and teachers recognized that by providing healthy foods, the healthy choice will become the easy choice. Teachers perceived the CSH model as a positive experience both professionally and personally. Many teachers changed personal behaviours and thus emerged as role models in regards to healthy eating and active living. As one teacher explained, "I feel totally peer pressured in a good way to eat healthy here."

The visibility of the APPLE brand was identified as important mechanism to signify each school's identity as an APPLE school and was viewed as a means to promote the school culture (both within the school as well as outside the school). However, teachers' also indicated that while physical changes (e.g., signs, bulletin boards) were present in the school, many of the other changes that occurred were subtler and were infused throughout the whole year. As one teacher expressed, the change is "…not [about] that kind of a visual flash…what we're trying change is minds and hearts and attitudes…it's kind of hidden."

Theme 5: Engaging stakeholders. Cohesion and broad based support among all stakeholders (e.g., teachers, staff, students, parents, administrators) was identified as vital for successful implementation of the CSH model. Teachers recognized that making changes in a school requires more than just one person, like the SHF, doing activities, because "…to make a change in a school everyone [has] to participate – team work is needed to make a change happen." A strength of APPLE Schools is that it not only involves the SHF and the teachers, but it also involves the students. This resulted in increased feelings of inclusion for students, according to the teachers. By becoming involved in the project, the enthusiasm and engagement of the students was evident.

> *…so much of the decision making in food is done by adults, parents…in their life and now they [students] have got a role in it…engaged in that role…they're saying well maybe I shouldn't have this in my lunch.*

Teachers acknowledged a dramatic increase in knowledge about HEAL because of APPLE Schools and expressed interest in sharing this information with the entire school community, which included all stakeholders. Teachers were aware that communication about HEAL activities had to be handled carefully to avoid offending community stakeholders, but ultimately the teachers expressed

the need for "[parents] to understand that health isn't just something that you deal with later…"

Challenges and strategies for improvement of implementation

Key challenges for APPLE Schools implementation included lack of time and competing priorities in the school, engagement of parents and families, role confusion, and policy development and implementation. When asked directly how APPLE Schools could be improved in these areas, teachers indicated various strategies that would enhance implementation. One of the primary challenges of APPLE Schools was viewed as spreading the word among parents to ensure that project implementation was more inclusive of families. In other words, "…students don't necessarily bring the project home…" As one teacher indicated, "…I've seen a massive improvement in my own class... that we could take that a little bit further in the education…of parents for school lunches…" Teachers identified a need to educate parents about APPLE Schools and to gain support by increasing parental involvement in school activities. Teachers also expressed concerned about whose role it was to engage parents in APPLE Schools. Some teachers viewed parent and family engagement as their responsibility, while others understood this as the role of the SHF. Thus, the confusion around roles in the school was cited as an area for consideration in future project implementation. Another suggestion to improve parent engagement included exchanging knowledge and ideas with teachers at other APPLE Schools.

Teachers indicated that continued flexibility of the intervention (considering needs at both the school and classroom level) would improve the implementation process and ideally result in sustainability once the SHF is no longer present. At the organizational level, teachers expressed enhanced policy implementation as an important strategy. In particular, the role of the principal came up as imperative for facilitating policy implementation.

Discussion

APPLE Schools aims to implement comprehensive school health, which has been shown to be an effective model to address physical activity and nutrition in schools (Lister-Sharp, et al., 1999; Stewart-Brown, 2006). CSH focuses on the whole school community in order to support lifelong behaviour change among students and other stakeholders (Story, Kaphingst, & French, 2006). To support and document the successful implementation of CSH in APPLE Schools, process evaluation has been conducted in all ten APPLE Schools with a focus on one of the most involved stakeholders, the teacher. Additionally, because this was the first intervention to our knowledge to implement CSH through the use of a full-time SHF in a school setting, it was essential to understand the teachers' perceptions of implementation. The objective of this study was to focus specifically on the changes associated with the implementation of APPLE Schools. This objective was achieved by investigating the teachers' perceptions of changes that had occurred as a result of being an APPLE school, how the changes were viewed, and perceptions regarding the successes and barriers of implementation.

Teachers had a positive attitude towards APPLE Schools and discussed changes at all levels, which are similar to the earlier work of Ridge et al. (2003; 2002). Additionally, teachers identified that change happened slowly over time

and recognized that more work still needs to be done. This was consistent with previous reports, which indicated that CSH models are intensive and need to be implemented over a long period of time (Stewart-Brown, 2006). In addition to the invaluable time spent building relationships with the school community and providing clear project expectations, the teachers felt that the PD opportunities allowed for increased ownership and buy-in. The PD opportunities resulted in increased confidence in teaching and believing in HEAL priorities and generated support of project implementation. Consistent with our findings, Ridge et al. (2002) found that PD was essential to build on current knowledge and skills to promote CSH, which can help to initiate change.

Flexibility of the intervention to each school's needs and each teacher's needs generated support of project implementation. Gillies (1998) indicated that when organizations are allowed to conduct their own needs assessments and to identify their own priorities, interest increases. According to earlier research addressing specific behavioural determinants, needs assessments among the target group, participant involvement in planning and implementation, and pretesting were stated as important aspects to increase the effect of program development and therefore of successful implementation (Peters, Kok, Ten Dam, Buijs, & Paulussen, 2009). As APPLE Schools was already developed, it was up to the SHF to make the fit with the school. Teachers mentioned "making the fit within the school" as an important element that should be continued in the future.

While there was initially some confusion regarding the role of the SHF, this was expected due to the nature of creating a new position within a school. Communication and relationship development between the SHF and teachers was seen as an important skill the SHF must have, which corresponded to the review done by Peters et al. (2009). Visibility of the SHF, and the positive attitude of the SHF were also viewed as important qualities. It has been shown that embracing the CSH approach and translating the intervention components into the teacher's own terms will increase achievement of educational goals more easily (Ridge, et al., 2002). Although this was not specifically assessed in this study, it was assumed that the time spent building relationships in order to understand one another helped to overcome the challenge of role confusion in regards to CSH and APPLE Schools.

Leadership emerged as an essential component of project implementation. Teachers recognized the crucial role that the principal played in implementation, but recognized the SHF as a true leader of APPLE Schools. Research has not shown what kind of leader is more effective than another, but it is known that a both teachers and student peer leaders have a positive effect on successful implementation (Peters, et al., 2009). A key role of the SHF was to create additional leadership roles within the school, such as providing both teachers and students (including peer leaders) with the knowledge and skills to promote health. Furthermore it was important that the coordinating person had a good knowledge of each of the components or activity areas, as well as an integrated, comprehensive view of how these components corresponded with each other (Deschesnes, Martin, & Hill, 2003; Peters, et al., 2009). Teachers saw the SHF as an important resource with a great amount of knowledge around HEAL. The SHF was viewed as a leader, who shared information about APPLE Schools, and was committed to making project opportunities successful. The SHF also led the process of adapting the project to suit the unique needs of the school. According

to the teachers, this last aspect was very important and should be broadened even more. For successful implementation, the uncontested support of the school principal was seen as important, which included the support to implement policies, such as the DPA-policy or to a lesser extent, the reward systems in the schools. Previous research in schools has also indicated the essential role a principal plays in program success and that the principal is viewed as a key stakeholder in the implementation support system model (Greenberg, Domitrovich, Graczyk, & Zins, 2004).

While teachers identified a shift in school culture as a positive result of being an APPLE school, the teacher as a role model was also evident. Although we often identify teachers as role models, there is little research that provides an understanding of the teacher's role in encouraging HEAL behaviours (Gordon & Turner, 2001). One study, conducted as part of the Kahnawake Schools Diabetes Prevention Project (KSDPP), demonstrated the importance of the teacher as a role model to encourage healthy eating and active living (Cargo, Salsberg, Delormier, Desrosiers, & Macaulay, 2006). In the current study, teachers indicated that by changing personal behaviours, professional activities such as daily teaching practices changed as well. An example of this was when teachers identified moving away from using food as a reward as a role modeling behavior.

Teachers recognized the importance of a cohesive approach to implementation across all stakeholders, which is consistent with previous reports (Gottlieb, et al., 1999; Mullen, et al., 1995). Although it was not always clear who was responsible for sharing information among teachers and with the parents, this was viewed as something that could be determined by the school during implementation. Many of the teachers expressed satisfaction with participating in the focus groups because it provided the opportunity for knowledge transfer and knowledge dissemination. The teachers appreciated the group discussion and were willing to participate again, although a lack of time was immediately mentioned as a barrier. A primary challenge identified by the teachers involved the inconsistency in the amount of parental involvement from school to school. All addressed the issues of reaching the parents; however, some schools had developed strategies to reach parents and therefore had more capacity for engagement. The contribution of parents and community stakeholders was identified an integral part of a comprehensive school health approach and was identified as a priority. A school/family/community partnership reflects the prevailing features of children's living environments, in that the key community players participate in the decision-making process and work jointly towards enhancing personal development, social integration and educational achievement in children (Deschesnes, et al., 2003).

As this study had a qualitative focus and did not rely on other forms of evidence, the findings are not generalizable to the whole population. Considering the nature of the study was exploratory, findings only apply to the ten APPLE Schools. However other intervention studies are able to learn from the successes and challenges encountered during the implementation phase of APPLE Schools due to the process evaluation. Another limitation was that multiple stakeholder perspectives were not compared. Future research should examine the multiple perspectives of individuals involved in program development and usage in order to expand upon the current findings. As well, teacher self-selection bias for those interested in the project may have occurred. However, even those teachers in

support of the project had doubts, saw challenges and were able to come up with barriers. Thus the study still provides insight into the process evaluation.

Although there were challenges during the initial phase of implementation, it is important to mention that some challenges have already been overcome since the start of the project in January 2008. One challenge during the early stages of the project was the uncertainty of how much the project was going to add to the teacher's workload. It has been reported that school staff often feel overwhelmed by the increasing number of prevention programs, due to the already overcrowded curricula and limited occasions for implementation (Lee, 2004; Leurs, et al., 2005). However, because of the SHF, schools were able to address these concerns and involve the teachers to gain support for APPLE Schools. This enabled teachers to see the project as complementary to existing work. It was unknown how the project would be best implemented and precisely what the role of the SHF would be since this is a novel intervention. As a result, there was some confusion around roles, which are being resolved on an ongoing basis. By working together and involving stakeholders throughout the school community as is part of the CSH model (WHO, JCSH), APPLE Schools has been embedded in the ten intervention schools and has become a natural element of the educational experience. It is anticipated that sharing the results of process evaluation will stimulate joint reflection and will create a stronger cohesion among all stakeholders working at different levels (Deschesnes, et al., 2003). Moreover, initial results that demonstrate the progress of the project may increase motivation among teachers and administrators (Mohammadi, Rowling, & Nutbeam, 2010; Tjomsland, Iversen, & Wold, 2009).

In conclusion, the focus group interviews were conducted in APPLE Schools one-and-a-half years into the implementation process. The process is still evolving but teachers have already reported numerous changes (at various levels of the schools' culture) as a result of being an APPLE school. However, additional work needs to be done to make APPLE Schools sustainable over the long term. The teachers had a clear sense of the challenges surrounding implementation but were willing to work on solutions and were very supportive of APPLE Schools. Most importantly, the adoption of the project within the whole school community was viewed as essential. Furthermore, as teachers recognized the need for HEAL, greater opportunities were sought to contribute to the school's vision for health. Participants all indicated further implementation of the project had great potential for success.

When implementing a CSH intervention, stakeholders should ensure ongoing collaboration with all stakeholders, especially teachers. This will allow for a broad based understanding of implementation progress and will allow for the CSH intervention to remain flexible and dynamic. Teachers' influential voices, opinions and perceptions are imperative to the successful implementation of CSH interventions. As the frontline workers, teachers are not only essential for project implementation but are also the key stakeholders who will sustain HEAL activities.

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