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# The Role and Impact of Student Leadership on Participants in a Healthy Eating and Physical Activity Programme

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## Abstract

**Objective:** Children are experiencing alarmingly high rates of obesity at least partly due to unhealthy eating and physical inactivity. Implementing school-based health interventions with elementary school children focused on youth empowerment could lead to improved health environments and behaviours. The purpose of the present study was to examine elementary students' perceptions of participating on a student-led school health improvement team. Empowerment theory guided the research, specifically the concept of including participants in programming to identify possible individual level outcomes.

**Design:** Qualitative research.

**Setting:** One elementary school formed a student-led school health improvement team, focusing on healthy eating and physical activity, comprising of nine students and two adult co-advisers.

**Methods:** Data collection included nineteen individual interviews with students and advisers and four non-participant observations of team meetings and reform initiatives. To ensure the perceptions of the research participants guided data analysis, analytic induction was undertaken using grounded theory.

**Results:** Students and advisers shared similar perceptions that the student-led health reform process had a significant impact on several areas of students' life skills and health behaviours. Specifically, they identified improved leadership skills (assuming responsibility, self-confidence in public speaking, and pride in becoming healthy role models) and health behaviours (dietary intake and physical activity) as outcomes of their emerging identities as health reform leaders.

**Conclusions:** This study documented previously identified psychological empowerment outcomes, such as perceived control and proactive health behaviours and additional positive outcomes, such as peer modeling. The findings suggest that team membership may positively impact on young people, which could support the inclusion of students as leaders in future interventions.

**Keywords:** student leadership, youth empowerment, healthy eating, physical activity, USA

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## Introduction

Children in countries such as the USA are experiencing alarmingly high rates of obesity at least partly due to unhealthy eating and physical inactivity (Kumanyika et al., 2008). In 2011-2012, employing standard BMI cut-points, 31.8% of children (aged 2-19 years) in the USA were categorised as overweight or obese (Ogden et al., 2014). Implementing healthy eating and physical activity interventions with elementary school children (ages 5-11) could have a significant impact on their future health (Centers for Disease Control and Prevention [CDC], 2012). More than 55 million children in the USA attend school on a daily basis, making school based health programmes convenient, cost-effective and far-reaching (United States Department of Education [USDE], 2010).

While it is common for healthy eating and physical activity interventions to target children in schools, programmes are typically top-down and adult-led. One example of this type of programme is Coordinated Approach to Child Health (CATCH; Franks et al., 2007). CATCH is a multi-faceted elementary-based programme focused on positive school environments, physical activity and healthy eating. Programme staff join together with food services to reduce the fat content in school meals while classroom teachers implement a health curriculum to help children build skills related to healthy eating and physical activity behaviours and physical education teachers encourage participation in enjoyable physical activities. These outcomes are accomplished through classroom and physical education curriculum, in combination with healthy, low-fat, cafeteria menus. Results from the three year randomised control trial across 96 elementary schools showed an increase in moderate to vigorous physical activity time (from 40% to 50%) in physical education classes and a decrease in fat consumption during school meals (from 39% to 32%). Further indication of the prevailing type of programming, that occurs through adult designed and led initiatives, is the US CDC eight module programme for Coordinated School Health, which also does not incorporate active participation on the part of students within any component (CDC, 2013).

Although health interventions dealing with adult populations frequently engage target populations in the design, implementation, and evaluation of the intervention, this practice is comparatively new for youth-focused programmes in the USA (Powers and Tiffany, 2006). Young people are often thought of as passive recipients in need of changing, fixing or saving (Finn and Checkoway, 1998). Based on the success of previous programmes, creating student leaders in health related school interventions could have especially powerful outcomes for the leaders involved, as well as the school-wide community (Huber et al., 2003).

While programmes incorporating student leadership have become more frequent, there are gaps in previous literature that are problematic. Currently, most programmes involving students as leaders take place in middle and high schools (Berg et al., 2009; Ozer et al., 2008), few have studied the process in elementary schools. Understanding whether and how to leverage younger youth to facilitate individual and environmental change at schools would be a useful addition to the literature. Furthermore, although researchers have used quantitative methods to identify positive change in health knowledge, behaviour, and health outcomes from youth-led interventions, little is known about the perceived impact of the experience on the students and adults involved (Stock et al., 2007). A qualitative study could identify outcomes not

previously identified, while allowing for the valuable understanding of processes and outcomes from participants' own viewpoints.

The purpose of this study was to examine how experiences as part of a healthy school leadership team impacted youth members. In particular, how do young people believe that leadership experiences influence their healthy eating, physical activity and leadership development?

### **Theoretical framework**

Zimmerman (2000) proposed that involving individuals in programme design to improve their quality of life, and that of their community, could lead to feelings of empowerment. Checkoway and Gutiérrez (2006) have suggested, based on research with other populations, important positive outcomes could result from programmes incorporating quality participation opportunities by youth: "Studies of several population groups show that participation can strengthen social development, build organisational capacity, and create changes in the environment" (p. 2). For young people, quality participation opportunities could include interacting with positive adult role models, working in a supportive environment, and making contributions to an organisation, such as a school (Zimmerman et al., 2011). Cargo et al. (2003) concluded that engaging and sustaining young people's participation in programming was a necessary condition for youth empowerment. Positive empowerment outcomes resulting from participation in health interventions incorporating empowering processes may occur regardless of the success of the underlying programme. This means students may perceive that their experiences on a youth-led health team have empowered them in a variety of ways, even if there is no measurable impact of programme outcomes on the school health environment or student body.

For the purposes of this study, we were interested in individual level outcomes, also known as psychological empowerment. Based on previous youth empowerment programmes, individual level outcomes for youth participants might include positive effects on personal confidence, identity, social connectedness, civic competencies, leadership development, and political self-determination (Checkoway and Gutiérrez, 2006; Hart et al., 1997). Zimmerman et al. (1992) identified three components of individual level outcomes: the interpersonal, the interactional and the behavioural. The interpersonal component may be described as an overall change in self-perception, including improved situational perceived control and self-efficacy. The interactional component encompasses a new critical awareness of the environment and feeling equipped with decision-making and problem-solving skills to influence one's environment. The behavioural component encompasses exerting influence through active participation in community groups as well as choosing positive health behaviours and advocating for positive behaviour change in others (Zimmerman et al., 1992; Zimmerman et al., 2011).

Psychological empowerment has been studied in a variety of settings (e.g., workplaces, coalitions, and communities) and with a variety of populations (e.g., teenagers, community organisers, and urban city dwellers), but is still a novel approach for health programming working with elementary school aged children (Wong et al., 2010). The development of empowerment is population and situation specific, resulting in a substantial obstacle to generalising the effect of programmes incorporating youth empowerment practices (Jennings et al., 2006). Further exploratory research, using qualitative research methods to identify students' perceptions

regarding their experience on a school health reform team, could further inform psychological empowerment theory in the context of school health interventions working with younger children.

## **Methods**

During the 2012-2013 academic year, one suburban elementary school in the Midwestern USA formed a student-led school health improvement team focused on healthy eating and physical activity. Three quarters of students enrolled were reported as Caucasian, with small segments of African American, Hispanic, Asian, or 'more than one race' students. About half of students were enrolled in the national school lunch programme to receive free or reduced price meals, which indicates at least half of students were from low-income families. The team consisted of nine third and fourth graders (aged 8-10 years) and was guided by two adult co-advisors. In September, advisers in consultation with classroom teachers recruited student members from third and fourth grade classrooms, seeking to include a representation of the student population within the school based on gender, ethnicity, social status, and academic standing. Advisers described student members as having a mix of personalities; such as natural leaders, shy students lacking in self-confidence, and some identified as historical "trouble makers". The first team activity was to complete a school wellness investigation containing 37 questions organised around three aspects of school health: 1. nutrition services, 2. physical education and physical activity, 3. family and community. Results from the school wellness investigation were then discussed and used to identify ways to make the school healthier. The team designed and implemented the following activities: a winter sledding event with fruit and yogurt parfaits, a skipping rope contest with fruit kabobs, and a school-wide assembly featuring a nutrition magician with raw vegetable assortments for taste testing.

IRB approval was received and informed consent was obtained for students/parents and advisers. Data collection was conducted by one trained researcher and occurred throughout the 2012-2013 school year. It included 19 individual interviews with student team members (eight students twice, one student once) and co-advisers (once each), as well as four non-participant observations of team meetings and events. To understand students' perceptions of their experiences as team members, interview questions focused on their perspectives regarding conducting the school wellness investigation and each team activity; things they felt they learned over the year, and ways their school environment, their peers' behaviours, and their own behaviours changed. Questions included, "What successes has the team had so far this school year?" and "What do you think would be different about you right now if you hadn't been on the healthy team squad this year?" Adult advisers were interviewed as a secondary data source to further understand possible impacts to students related to their experiences on the school health improvement team, and to generally substantiate student commentary. Interviews with adult advisers also provided background regarding how students were chosen for the team. Questions included, "Tell me about the student leadership team." and "What are all of the things that have changed for students or in students as a result of being on the team?" To further identify possible impacts of the leadership experience on students, the researcher conducted four non-participant observations of team interactions. Observations included preparation and execution of three events and one team meeting. During observations, the researcher took field notes, which were

later typed and coded, in the same fashion as the interviews. The researcher's objective during observations was to capture conversations between advisers and students and amongst students and identify the nature of student engagement during the events and meetings.

To ensure that the perceptions of the research participants guided data analysis, analytic induction was conducted using grounded theory (Hesse-Biber and Leavy, 2011). A grounded theory approach to data analysis is a cyclical process of collecting data, analysing it through memo writing and coding, collecting more data, and analysing new data in relation to previous results. The process continues until a level of credibility or data saturation is achieved (Hesse-Biber and Leavy, 2011). Open and focused coding were conducted, ensuring data were captured related to the research question as well as possible emerging themes were identified. First, interview transcriptions were analysed using line-by-line open coding. The open coding process allowed the researcher to identify any unexpected themes. After open coding was completed, the transcriptions were reviewed again, to identify focused codes related to perceptions of healthy eating, physical activity, and the development of leadership. Next, observation field notes were open-coded, to identify themes. Then observation field notes were reviewed specifically for themes related to healthy eating, physical activity, and leadership opportunities provided to student team members. Throughout all coding processes, coded data were compared across different code categories, data sources, and in relation to the research questions guiding the study with a focus on identifying trends and commonalities that might emerge into fuller explanations. Finally, themes were compared across data collection sources to identify commonalities between them. Interview guides for the second round of student interviews included member checks to further investigate emerging themes and identify new ones. An example of a member check question was, "When I interviewed team members last time, some students told me that being on the team helped them learn how to be better leaders. What do you think about that?"

Several trustworthiness strategies were employed to ensure findings were accurate and credible. Credibility was aided by the triangulation of data collection methods and sources and member checks (Hesse-Biber and Leavy, 2011). Peer debriefing was used throughout data collection and data analysis to enhance credibility of emerging themes. Confirmability was aided by the use of researcher journal and peer debriefing (Lincoln, 1985).

## **Results**

Students and advisers shared similar perceptions that the youth-led health reform process had a significant impact on several areas of students' life skills and health behaviours. Specifically, they identified improved leadership skills (assuming responsibility, self-confidence in front of groups, and pride in becoming health role models) and improved healthy eating and physical activity behaviours as outcomes from their emerging identities as health reform leaders.

### ***Improved Leadership Skills***

Team membership carried new responsibilities for students. For example, team members took turns reading the "healthy tip of the day" with a partner over the public announcement speaker system. They planned and led public events, such as school-wide assemblies and visited classrooms, encouraging students to take healthy lifestyle pledges. During observation, students

arranged rides and arrived early to set up for events. Team members were expected to remember meeting schedules and substitute morning recess with meetings. These opportunities to develop leadership skills impacted on students' lives in a variety of ways.

### *Responsibility*

Both team advisers and most students claimed that involvement in the team resulted in enhanced student responsibility. Students described new responsibilities they had assumed, such as volunteering to help teachers and performing extra classroom tasks. One student, Max, described taking on more responsibility at home, "...but now, whenever I see a mess I just clean it up, and now if my bed's not made, I just make it."

Students described learning responsible leader qualities such as being nice, treating people with respect, and helping others. Sandy and Paul, echoed the sentiments of their peers when they said, "Usually I'm kind of mean, but now I know that you're supposed to be nice and treat people with respect and listen" (Sandy) and "I have learned to be more respectful to people." (Paul)

Nancy, as an adult adviser, described changes in students' behaviour in team meetings, such as listening and taking turns talking. Beth, the second adult adviser, talked about the change she had seen in a student, Olivia, getting into trouble less frequently as an example of how students took on more responsibility and became leaders. The previous year, Olivia had been known as a troublemaker and Beth had intentionally included her in the team to provide a positive focus for her energy.

### *Self-confidence in public speaking*

During student and adviser interviews, it became evident that participation in the leadership team increased students' self-confidence in group situations. Beth, from the perspective of an adviser, described this improved confidence in terms of students' behaviour at school assemblies. Before an assembly early in the year, students had practised several times speaking about healthy eating and physical activity, but during the assembly students were "frozen" in place with stage fright. In the last assembly of the year, students wore costumes representing food groups and assisted a guest speaker who asked them to be models. On this occasion, students spoke eloquently and confidently in the assembly and Alyssa, the apple, even did a runway walk.

During interviews, all students agreed their self-confidence in front of groups increased by being on the team, some mentioning the same recent assembly described by their adviser, Beth,

...when I was in third grade I was super-duper shy...but [now] I'm okay going in front of the whole school...I had to dress in an apple costume and model and I wasn't shy doing that...but if I was in third grade I wouldn't raise my hand or anything. (Alyssa)

Steve described always wanting to sing but lacking the courage to do so in public,

...on the healthy squad we did this one assembly where we got to dress up as fruit and that made me not be afraid to be on stage and do what I love. I've always wanted to sing but I could never have the courage to do it...[recently] my Aunt Kim had a party and I sang there.

Max talked about previously not entering a talent show because of his fear of performing in front of large groups, but he gained confidence as part of the leadership team and planned to enter the annual talent show the next summer. As he put it, "...I've actually gained more confidence...[now that] I've been in front of the whole school..."

### *Healthy role models*

Throughout interviews, students identified gradually took on identities as healthy role models, with a duty to help peers eat healthier and increase physical activity. Students showed pride in helping, teaching, and encouraging friends and peers to make healthy eating choices and to be more active. Topics they reported discussing with peers and family members included trying new foods, eating more fruits and vegetables, playing more at recess, and replacing video gaming with physical activity. Elisabeth talked about being a leader to younger children and role modeling healthy behaviours for her classmates,

...some kids don't really like to go outside and run, they don't have that much energy. If you try hard enough to eat healthier and go outside more you'll be a better leader to the little kids...when I have my birthday treat I don't pick cupcakes and stuff like that because I want to be a better leader...

Healthy role modeling continued at home with parents and younger siblings. Examples included eating healthier snacks and playing outside as a family more often. Similar to other team members with siblings, Jenna said, "I'm a better leader for my brother because he doesn't really eat healthy."

Students enjoyed the responsibility of helping people practice healthy behaviours and felt pride in their efforts. When asked what the team does, Max reported,

We help kids get more healthy. If they eat a little bit too much junk food we'll tell them you have to eat healthier. It's in the healthy messages we do every morning, it's fun to help people get healthy and work out and stuff.

This same theme was often voiced in examples of the biggest accomplishment of the year, "I'm proud of...all the things we've helped people do" (Steve) and "I'm responsible for helping the whole school be healthy." (Jenna)

Overall, students gained experience as a leader, increased responsibility, improved self-confidence in front of groups, and took pride in becoming a healthy role model. Students were able to relate what they learned and experienced on the team to both school and family situations.

### ***Healthy eating and physical activity behaviour changes***

In addition to enhanced leadership skills, students reported improving their own healthy eating and physical activity as a result of team membership and partly due to their burgeoning identities as healthy role models. Students provided examples of health behaviour changes occurring both at home and school. Some students identified changes that other team members had made in addition to their own new healthy behaviours.

#### *Healthy eating*

Several students described positive changes in their healthy eating habits. For example, Alyssa said, "I'm eating healthier. A lot of, like, more vegetables." Similarly Olivia claimed, "Well, I used to have, like a couple pieces of candy every day, but now I don't have them. At the highest would be like two pieces a week, so I don't really eat it that much anymore."

Some students talked about changes related to their eating habits at home. For instance, Brian said he was "eating healthier and exercising more." He went on to talk about eating more fruits and vegetables throughout the day, which he had asked his parents to buy. Elisabeth talked about trying new healthy snacks from a recipe book, "My mum made us, it's called fish in the pond from the book...it tasted really good." Max talked about substituting a healthier after dinner snack, "...usually I'll ask my mum for a piece of candy after dinner, but yesterday after dinner I actually grabbed a banana and a bottle of water instead of a piece of candy."

Students also talked about changes in their peers' behaviours, for instance Olivia said, "...he's [Max] always doing sports and he doesn't eat that much candy or anything... Steve said he doesn't eat as much junk food..." Elisabeth and Alyssa were cousins who spent time together outside of school and Alyssa identified changes in Elisabeth's behaviour, "I see her [Elisabeth] eating oranges and carrots and stuff more, and her little sister, too."

#### *Physical Activity*

The two most common student responses regarding increased physical activity in recess and as a replacement for sedentary behaviours. Jenna talked about Brian's activity during recess,

"...I've seen Brian, instead of just sitting there waiting in the shade for the bell to ring...he jump ropes, he plays football, he plays basketball, he plays soccer...before he would just sit in the shade and wait."

Steve made these observations about recess,

"...Olivia, she's been going out a lot more...Max has been playing four square, he hasn't played that before, he's been playing a lot. He's a pro at it right now."

The second interview guide included the question, "What do you think would be different about you right now if you hadn't been on the healthy team squad this year?" Answers to this question provided some of the most powerful illustrations of how being health leaders influenced personal health behaviours. Jenna said, "Well, I wouldn't even step foot outside in the summer if I wasn't part of the healthy team. I would just stay inside; play video games all day and watch TV." This was echoed in Bob's response, "I would probably sit around and play video games all

day, I would be way less healthy.” Other increases in physical activity at home included during family time,

“My mum runs now and so does my dad. We’ve been going to the park, more often as a family, and we all play and my mum goes on the trail and runs.” (Olivia)

Nancy, an adult adviser, provided additional examples of students’ healthier behaviours, “A couple of students told me that they’ve taken home that taste test, that yogurt on the go that we did, and made it for their parents with their chef hat on.” During the observation of a tasting event, students made breakfast food tasting plates and enthusiastically told their adviser Beth the names of all the foods they were trying for the first time, such as cottage cheese, fruit kabobs, and banana bread.

## **Discussion**

Student leaders were tasked with creating a healthier environment for their school, and in the process of changing their environment, students found they had also changed. Findings were supported by student and adult interviews as well as researcher observations. They helped provide answers to the research questions regarding how students and advisers felt young people’s leadership experiences influenced their healthy eating, physical activity and leadership development.

Guided by empowerment theory, this study documented positive psychological empowerment outcomes for youth leaders in the areas of leadership, emotional satisfaction, and enhanced eating and activity. In general, students perceived they were successful in helping themselves, their peers, and their families become healthier. By trying to improve the health of their school environment, students increased their perceived control over health behaviours and self-confidence in public speaking (interpersonal psychological empowerment outcomes), reported positive experiences navigating the social and political aspects of implementing change in their school community (interactional psychological empowerment outcomes) and described increasing their personal health behaviours as a result of their experience (behavioural psychological empowerment outcomes).

An increase in public speaking self-confidence is situational, but similar to the developmental and self-esteem benefits found in previous research regarding impacts of young people’s development opportunities (Powers and Tiffany, 2006; Van Linden and Fertman, 1998). Additionally, the positive changes in healthy eating and engaging in physical activity are similar to changes described in previous school-based health interventions incorporating adult-led programming (Franks et al., 2007). Results of a youth empowerment intervention aimed to reduce risky drug and sex behaviour among high school students identified an increase in participating young people’s enactment of positive peer norms, which were reinforced with each other during group meetings (Berg et al., 2009). This outcome could be interpreted as similar to the leadership sub-theme regarding students’ pride in role modeling health behaviours and taking responsibility for positive behaviour change in others. Pride in the identity of a healthy role model may link multiple components of psychological empowerment together. Students

applied confidence in enacting their own health behaviour to interactions with peers and families to help others improve their own health behaviours.

## **Implications**

The findings discussed in this paper could be enriched by additional research studies. Empowerment tends to have different meanings depending on the context and population, making it difficult to appropriately measure the impact of empowerment theory at a global level (Zimmerman, 2000). The present study concentrated on the perceptions of one student-led team within an elementary school; consequently care should be taken when transferring findings to other populations. Empowerment experiences may differ for young people based on race, class, and gender, as well as existing power dynamics embedded in school cultures (Jennings et al., 2006). Connecting youth empowerment and school health programming to these influences, as well as accounting for family and community contexts could help student-led projects bring about greater success. Further studies, both qualitative and quantitative, with children in the school environment, could enhance understanding of what empowerment means to them and all of the possible outcomes associated with enacting empowering interventions.

Future health programming could be improved by understanding the potential impacts on the school environment, staff, and student body resulting from a student-led health intervention. Although students embraced their new roles and executed team activities with excitement, it is worth noting that the school enhancements chosen by this team were one-time, event based activities, with little sustainability over time. Had students effected policy (time allotted for recess or physical education, providing candy as a reward) or environmental changes (provided additional physical activity equipment, limited access to unhealthy vending snacks), the work of the team may have led to more lasting impact to the school. While students in this study perceived they had changed the health behaviours of peers and families, it is unknown if there was any measurable difference in the eating and activity choices of other students and families. Realistically, Jenna's portrayal that she was "...responsible for helping the whole school be healthy" was probably an overstatement. Future investigations should link student-led health programmes to outcomes experienced in the overall student population. This could be done through pre- and post-intervention questionnaires measuring changes in knowledge, attitudes, and beliefs of healthy eating and physical activity for all students in the school. Self-report data collected from food and physical activity recall instruments could provide an understanding of possible health behaviour change.

In conclusion, the findings from this research suggest that team membership may positively impact upon young people, which could support the inclusion of students as leaders in future programmes and interventions. Youth-led health programmes may encourage members to feel empowered and act as health role models as a way to reach the student body in a more accepted way than conventional adult-led programmes. Providing students with the tools to create change in their environment can also lead to progressive reforms not yet tried, and may possibly increase the sustainability of changes due to the buy-in from students who were part of the transformation process.

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**Table 1. Pseudonyms with descriptions of participants**

Beth, female, classroom teacher	Nancy, female, PE teacher
Brian, boy, third grade	Max, boy, fourth grade
Jenna, girl, third grade	Steve, boy, fourth grade
Sandy, girl, third grade	Olivia, girl, fourth grade
Paul, boy, fourth grade	Elisabeth, girl, fourth grade
Alyssa, girl, fourth grade	