# Adolescents' perspectives on environmental and individual factors influencing their health behaviour

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**Key points:**
1) Adolescents described how the home and school environments can support their healthy lifestyles by providing the right kind of knowledge, and opportunities to cultivate and maintain a healthy lifestyle.
2) Adolescents also provided insights into personal struggles with maintaining a healthy lifestyle.
3) School-based health promotion programs which take a comprehensive health approach fosters a supportive environment for healthy lifestyle behaviours.

**Abstract**

Adolescence is an important life phase in which future patterns of adult health are established. Therefore, there is a need to understand the barriers and enhancers of adolescents' health to better support their development. We explored adolescents' perspectives on factors influencing their health behaviours using a qualitative descriptive approach. In-depth interviews were conducted with 22 junior high and high school students in Northern Alberta, who had participated in a 2015/16 Youth Health Survey. Thematic analyses revealed three themes: 1) knowledge, 2) contextual factors (home environment and school environment) and 3) individual factors (self-motivation and personal responsibility). Overall, the students were extensive in their description of healthy lifestyles, but their use of this knowledge was dependent on contextual and individual factors. They described the importance of the home and school environment in supporting healthy lifestyles, particularly by providing the right kind of knowledge and opportunities to cultivate and maintain a healthy lifestyle. They also identified self-motivation and personal responsibility as individual factors of influence on their health behaviours and practices. The students placed a great emphasis on personal responsibility for their health behaviours, despite the necessity of environmental and social supports for encouraging healthy lifestyles. School-based health promotion programs, which take a comprehensive health approach fosters a supportive environment for healthy lifestyle behaviours.

**Key words:**
Family, school, adolescents, health behaviour

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# 1. Introduction

Adolescence is an important phase in life in which lifestyle habits that are established can influence adulthood. Therefore, how young people navigate the adolescent years can have a significant effect on their future health and development (Sawyer et al., 2012; Viner et al., 2012). Consequently, cultivating healthy lifestyles is important for attaining good health outcomes including chronic disease prevention (Daniels et al., 2005) and good mental health (Dassanayake et al., 2017). Having good health also influences learning, since *"health and education are interdependent; healthy students are better learners and better-educated individuals are healthier"* (Joint Consortium for School Health, 2018). However, the adolescent years are filled with competing interests that may interact with, and impact learned positive behaviours from childhood. These competing interests arise from diverse changes accompanying puberty, including biological and mental development, and social-role changes (Sawyer et al., 2012). Examples of the changes which affect adolescents' behaviours include struggles with and discovery of self-identity, trying to attain more independence in decision-making for self, and navigating issues related to peer relationships (Roeser et al., 2000). In light of the developmental issues faced by adolescents, providing the right kind of support for healthful decisions is critical to their well-being.

Whole school approaches to health promotion provide an opportunity to establish health promoting environments which support health and well-being, and impact educational outcomes. In Canada, comprehensive school health (CSH) is the term used to describe the internationally recognized approach to supporting student educational outcomes while addressing school health in a holistic manner (Joint Consortium for School Health, 2018). Benefits of this approach include the recognition of the potential of schools to directly influence students' health and behaviours; the incorporation of health into all aspects of school and learning; and the linking between health and education issues and systems (Joint Consortium for School Health, 2018). Additionally, CSH facilitates improved academic achievement and lead to fewer behavioural problems in the classroom. Moreover, it helps students to develop healthy physical and emotional skills for life (Joint Consortium for School Health, 2018). This approach has demonstrated effectiveness in improving students' health behaviours, mental health and promoting healthy body weights (APPLE Schools, 2018; Dassanayake et al., 2017; Fung et al., 2012; Roberto et al., 2015); however, the sustainability of these benefits has yet to be established.

We previously conducted a Youth Health Survey (YHS) to assess whether the health benefits realized from being in CSH setting in elementary school continued when students moved into non-CSH junior high and high school environments. Our findings suggested that benefits of elementary school health promotion programs may be sustained into junior high/high school environment (Ofosu et al., 2018). We also noted from our findings, the potential of junior high and high school environment to impact student behaviours and sought to explore ways to incorporate CSH approaches into these school environments. Given that school-based health promotion involves students as participants and beneficiaries, their perspectives on factors influencing their own health behaviours are relevant to executing such initiatives. The insights gained can be incorporated into health promotion strategies to enhance their impact. This study explores the YHS participants' perspectives on factors influencing their health behaviours in the junior high and high school environment.

# 2. Method

A qualitative descriptive approach was used as this provides a comprehensive description of the phenomenon of interest (Mayan, 2009; Sandelowski, 2000), which in this study is adolescents' perspectives regarding factors that influence their health behaviours. The theoretical perspective of the qualitative descriptive method is based on the general tenets of naturalistic inquiry, i.e. a commitment to studying a phenomenon "as is", where the researcher has no a priori commitment to any one theoretical view (Sandelowski, 2000). Data

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were generated using semi-structured one-on-one interviews, which provided an opportunity for participants to express their perspectives independently, without the influence of their peers.

### 2.1 Study Participants

This research was part of the Return on Investment for Kids' Health research project, which employed a multidisciplinary approach to evaluate and improve school health programs and policies that promote healthy eating and active living. In the 2015/16 school year, 540 students from junior high and high schools (grades 7-12) in northern Alberta, Canada, participated in a YHS aimed to assess whether the health benefits realized from being in CSH setting in elementary school continued when students moved into non-CSH junior high and high school environments. For details on this survey, see Ofosu et al., (2018). As part of the information and consent process for the survey, parents and students were notified about a forthcoming qualitative study and invited to express their interest in being contacted for the study. Students from the Edmonton area who expressed interest in the qualitative study were invited to participate. Their proximity to the research unit allowed them to have ample time to participate at their convenience and in a location of their choice. Only students who had written parental consent and provided assent participated in the study. A sample size of 25 to 30 participants was estimated for this study (Dworkin, 2012). With 22 participants (17 girls and 5 boys), no new insights were forthcoming and, therefore data saturation was achieved. The participant's average age was 14.0 ± 1.3 years. The Human Research Ethics Board and the Cooperative Activities Program of the University of Alberta approved this study, including data generation and consent procedures.

### 2.2 Data generation

In March 2016, the selected participants were contacted through their schools and the telephone numbers provided on their consent forms to schedule a time and place for interviews. Interviews were conducted between April and June 2016 either on the school premises during lunch or class time (with permission from the school), or at the student's home. Interviews were audio-recorded as consented to by the parents and participants. Although an interview guide was used for the interviews, participants were encouraged to speak freely. The topic guide addressed the areas of conception of health and healthy lifestyles, sources of health information, personal health behaviours, and facilitators and barriers to healthy lifestyles; a sample can be found in appendix 1. Regarding the term 'healthy lifestyle', the aim was to understand how participants understood the term, as it would inform what they choose to put into practice, and what they perceived to be facilitators or barriers. We therefore did not provide our own definition of the term as this could potentially lead to judging participant's answers as right or wrong. Each participant was interviewed once and received a $25 gift card to a local bookstore after the interview.

### 2.3 Data analysis

The interview audio recordings were transcribed verbatim and transcription accuracy was verified by NNO. Participants were assigned a numerical indicator (e.g. Participant 1 = P1). Data were analyzed using thematic analysis, an iterative process of coding, categorizing and generating themes from the data (Mayan, 2009). An iterative data collection and analyses forms part of the reflexive and inductive process of the research. In this study, it helped the researcher to continuously make meaning of the data being generated and to know how to focus subsequent interviews to ensure that saturation is reached in the data generation process. The NVivo Enterprise 11 for Mac analytic software was used to organize the data for analyses. The researcher kept field notes and memos throughout all stages of data collection. These were referred to during the analysis to incorporate additional contextual information.

### 2.4 Researcher's position

Clarifying the researcher position from the onset of qualitative research enhances the quality of the outcome as the researcher becomes more aware of their potential biases and beliefs that may impact the study approach

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(Patton, 2002). In addition, it helps to define how an individual's position in the social hierarchy compared to other groups potentially limits or broadens one's understanding of others (Chehayber, 2011). A constructivist perspective was used in this study, rooted in a relativist ontology and subjectivist epistemology, whereby the researcher acknowledges that she and the participants are co-creators of understanding, and that the data generated and subsequent interpretations represent one possibility of multiple realities and multiple truths (Denzin and Lincoln, 2005; Mayan, 2009). The researcher recognized that her personal background and perspectives (given the differences in ethnocultural background between herself and some of the participants) may influence her interactions with the participants. Additionally, coming from a research unit focused on promoting CSH, this could potentially introduce some bias into the research process. Thus, the researcher maintained a reflexive stance throughout the research process. Reflexivity refers to the continuous process of self-reflection that researchers engage in to generate awareness about their actions, feelings and perceptions (Mayan, 2009). Researchers should pay attention to how and why decisions and interpretations along the research process were made and should be willing to relinquish ideas that are poorly supported by the data (Darawsheh, 2014; Mayan, 2009). Therefore, the researcher critically reflected on her own assumptions and beliefs, and those of the participants in the research, and kept a reflexive journal during the process to enhance interpretation of the data. Additionally, the researcher sought to establish rapport with participants in the data generation process, by interacting with participants in their own settings of choice and relating with them in a manner that promoted respect to reduce feelings of intimidation.

### 2.5 Rigour

Steps to ensure rigour or trustworthiness of the data and the results were incorporated into the research process (Morse et al., 2002). Credibility, a criterion to assess whether the findings are an accurate representation of the participants and/or data (Mayan, 2009) was ensured through cross-checking with members of the research team at various stages of the research process. Dependability, the post hoc opportunity to review how decisions were made through the research was also ensured by an audit trail of methodological decisions (Mayan, 2009). Another rigour strategy incorporated was methodological coherence in the qualitative descriptive approach used. This ensured that the method, data generation strategy, sample size, data analysis were all aligned methodologically to address the research question of interest (Mayan, 2009). Additional steps included incorporating the use of field notes and memos, saturation in data collection and, an iterative data collection and analysis process (Mayan, 2009; Morse et al., 2002).

## 3. Results

Three themes were revealed after data analysis: 1) knowledge, 2) contextual factors (home environment and school environment) and 3) individual factors (self-motivation and personal responsibility). Overall, the participants reported to have a good knowledge of what it takes to be healthy. The contextual and Individual factors influencing how this knowledge was translated into use are described in the following sections.

### 3.1 Knowledge

Participants were extensive in their descriptions of what a healthy lifestyle entails; their descriptions were well developed and comprehensive. The primary sources of health information reported were the home and the school. Less common sources were their friends and the internet. From the participants' perspectives, a healthy lifestyle is multifaceted, involving components such as eating healthy, being physically activity, having adequate sleep, good mental health, not eating too much junk food, and not being sedentary. They indicated that these components should be a daily practice. A person with a healthy lifestyle was portrayed as someone who was able to incorporate the various components of a healthy lifestyle into their daily lives. One participant described this as follows:



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*"I'd say it's someone who is not on a strict diet but always eats healthy foods. And junk food is not really an option .... They're the people that are always driven to like work out, do yoga or meditate or something that drives them every single day. And just people who seem happy with their life in general. That's part of having a healthy lifestyle." (P4)*

Another participant explained the importance of incorporating the various components into one's lifestyle as:

*"It's important because without these things it will be hard to function properly. If you're not eating healthy then you can't be active, you can't play sports or do anything. And if you aren't eating healthy you can't get enough sleep at the same time. So, they go hand in hand." (P5)*

### 3.2 Contextual factors

Participants identified home and school environments as factors that significantly influenced their health behaviours. These environments were reported to provide knowledge, structure and opportunities to support health behaviours. In the participants' view, having support from home and school encouraged them to pursue healthy lifestyles. As shared by a participant:

*"I like pushing myself in physical activities, doing things that will help me. But I also get pushed or encouraged by my parents or teachers to stay healthy and it helps a lot." (P5)*

Participants also expressed that when they were not in a supportive environment, their ability to make healthy choices was limited.

#### *3.2.1 The environment at home sets the tone for health behaviours*

Participants described their home as the environment that sets the foundation for behaviour. Specifically, their home was viewed as particularly influential in directing eating behaviours since parents often purchased the food and planned most meals. Thus, participants usually adopt their family value system and culture around food, which in turn influenced their own food choices and eating behaviours. As explained by one participant:

*"I was always taught at home that you need to be healthy and that's always a good thing. So, we've never really been an unhealthy family. My mom and my dad sometimes, but mostly my mom, she's a real pusher for healthy food." (P2)*

In addition to parents influencing the food choice, some participants mentioned that they (participants) also influence the food environment at home by incorporating knowledge and practices learned through a school-based health promotion program into their home environment. When parents supported participants' initiatives to change the food environment, participants were encouraged to engage and to practice the learned behaviours. As described by one participant (referring to the time in elementary school):

*"I told my mom we should start eating more healthy, because of what I was learning from school, and she said, 'yeah, we should', and we started to buy more fruits, less junk food and all that. We go on runs to the park, play baseball, do activities." (P22)*

Consequently, even when such participants had graduated and started junior high/high school, they continued referencing their learned behaviours to influence their home environment:

*"I encouraged my mom to get new stuff [food], because, before, we used to just like the old, normal things, but ever since, even in Grade 7, when I was out of the school, I used to get my mom to always get new things. I love trying new things." (P21)*

#### *3.2.2 School environment as a channel for health promotion*

Participants felt that the school provides both knowledge and opportunities to practice healthy lifestyles. School health programs contributed

to the development of skills for healthy lifestyles. For instance, health classes in schools were described as important sources of information on different aspects of health. As described by one participant,

*"…Especially from health class because we talk about all the food and stuff like how much sugar in all the stuff. Everything has sugar in it. And it's not healthy for people." (P12)*

and

*"Yeah, because we have to learn about the Food Guide every year and then also in the options foods, we make a lot of healthy food. Because of the teacher we had, we liked healthy food and we just made a lot of it." (P15)*

Participants further identified physical activity programs such as physical education, team sports, and exercise programs as some of the channels through which they have acquired healthier behaviours. One participant stated in response to a question on factors that facilitate his pursuit of a healthy lifestyle:

*"…being at school and having to do gym and fitness and stuff like that" (P2)*

Participants were aware of the role of the school environment in supporting healthy lifestyles. Many participants reported that there was a clear difference between the environment of their elementary school and of their current junior high/high school, and that these environments influenced their health behaviours. They expressed that their current junior high/high school was more relaxed in supporting a healthy food environment in comparison to their elementary school. The context of the junior high/high schools was reflective of the relative independence afforded to students in their adolescent years as well as the nature of school policies. As described by one participant,

*"Well, the environment it's in. For, [previous school], they push us towards eating healthier whereas [current junior high/high school], it's not a [health promotion project] school so you can bring chips and pop. They sell stuff here, but it's not close to healthy eating." (P22)*

Consequently, these participants expressed that health promotion programs in schools are important for influencing and supporting healthy lifestyle choices. They reported that such programs:

*"are useful because kids right now don't realize the food they're eating has an impact on their body. So, these programs enable them to understand this" (P9)*

and also,

*"They're very useful, because you won't have so many kids eating junk food and getting sick. And then you have more healthy kids for the next generation." (P3)*

### 3.3 Individual factors

Participants identified self-motivation and a sense of personal responsibility as individual factors that influenced their health behaviours.

#### *3.3.1 Self-motivation is dependent on the social supports available*

An intrinsic attribute that emerged as a factor that influenced adolescents' health behaviour is self-motivation – the desire or willingness to make healthy choices. Participants indicated that self-motivation was tied to certain contextual situations. For instance, involvement in some form of organized sports in school or in the community encouraged them to take care of their health. A participant described this as:

"There's times where I really want to be healthy. And I really want to eat healthy. It's usually certain times of the year when I'm in sports season then I'm really focusing on eating healthy" (P16).

Participants also indicated that good comprehension of the importance of cultivating a healthy lifestyle motivated them to adjust their health behaviours accordingly. One participant explained this as follows:



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*"I want to keep a healthy lifestyle so I don't have problems later on in life." (P3)*

Participants further indicated that pursuing a healthy lifestyle was challenging. As such, for some of them, healthy lifestyle practices were perceived to be an extra to or addition to one's daily routine, rather than being a lifestyle. They reported that there were periods where they would want to engage in healthy lifestyle activities while at other times, they felt they needed a break from it. As described by a participant,

*"On a weekday, I would probably try to be as healthy as possible and, make a lot of vegetables, salads and stuff to eat with my meals but I would have a weekend, where I would just be lazy and stuff." (P1)*

The challenges they faced included inadequate social support to maintain a healthy lifestyle, time constraints, the perceived realities of being a teenager and the temptations of fast food, namely, ease of access, convenience, timesaving, and taste. Some participants admitted that pursuing a healthy lifestyle was not a priority for them, because as adolescents they had other interests and priorities that demanded their time and attention. This included schoolwork, learning how to drive, and getting a job. One participant shared:

*"If I had more motivation for myself, because, a lot of people around me are very supportive, it would be easier. Like, let's do it, let's work out, let's exercise, let's go out and do something, eat something healthy. But I'm at the point where there's none, and I'm so lazy I don't want to get out." (P2)*

Another participant added:

*"I like eating a lot of junk food so it's hard to eat healthy sometimes 'cause there's so much sugar in foods everywhere. And there's a lot of programs to get physical health, to be active but most of them, at least at my age, they start at eight at night so it's hard to get enough sleep and then school. It's crazy." (P5)*

Overall, participants reported that self-motivation for healthy lifestyles required a lot of willpower and social support. Moreover, the environment and the availability of social support affected participants' self-motivation.

### *3.3.2 A sense of personal responsibility for one's health is important*

Participants indicated that attaining a healthy lifestyle was a responsibility of the individual. Although participants identified that making healthy lifestyle choices is affected by a combination of personal efforts and the contextual environmental, for the most part, they reported that ultimately, they were responsible for their own health. Some participants articulated this as:

*"It's a little bit of both. It depends on where you live, and who your family is, but it's usually up to your own choice" (P6)*

and

*"I feel that, if you want to be healthy, then you have to follow it yourself." (P15)*

Even when they acknowledged not having control over certain contextual conditions, such as having too much school work that they were unable to get adequate sleep or being in an unhealthy food environment, they still said they were the ones ultimately responsible for making changes in their lives, and making the right choices:

*"Well, most of the times I actually sleep late. It's because I have all these projects to do and all that stuff. But I really think that I have to have discipline to sleep early." (P12)*

Based on their in-depth description of what healthy lifestyle entail, participants placed great expectations and responsibility on themselves to achieve what they perceived as a healthy lifestyle. Their ideal picture of what a healthy lifestyle should look like involves meeting practically all the entailments they described as part of a healthy lifestyle, thereby posing an enormous challenge for themselves.

Consequently, a healthy lifestyle seemed not only burdensome, but it generated a sense of guilt and stress when their healthy lifestyle ideals were not met. Those who felt this way rated themselves poorly on their perceived health status and attributed their shortfalls to "being a fan of junk food" "being lazy" and/or "lack of motivation". Participants with this perspective tended to blame themselves for perceived lapses in maintaining healthy lifestyles. This is illustrated by the following:

*"Sometimes I think I should do something healthy and then when I try something then no I don't feel like it. Well I feel like I can't help if I'm not motivated" (P8)*

and

*"I think about it [healthy living] a lot, but I don't do it. I'm a very lazy person." (P2)*

Some eventually lost motivation to make a conscious effort at healthy choices. One participant described:

*"I want to do jogging or something for 30 minutes every day, but I have to admit I'm a little lazy. So, I will just stay inside and just do nothing. So yeah, that's why." (P2)*

Overall, the participants acknowledged that they knew what to do to maintain a healthy lifestyle, however, they felt that translating the knowledge to practice was their responsibility and it required self-discipline and -motivation.

# 4. Discussion

Our findings highlight contextual and personal factors that adolescents perceive to impact their health behaviours. Contextual factors (home and school environment) were important for supporting healthy lifestyles, particularly by providing the right kind of knowledge and opportunities to cultivate and maintain a healthy lifestyle. Personal factors (self-motivation and personal responsibility) were identified as supporting the maintenance of a healthy lifestyle but also interlinked with the contextual influences.

A considerable body of evidence exists supporting the importance of the environment at home or school to students' lifestyles and development. The nature of a person's family situation has been shown to be a strong predictor of an individual's health and health behaviours such as eating habits (de Wit, 2015), physical activity (McMinn et al., 2013), childhood obesity (Appelhans et al., 2014; Berge et al., 2015), mental health (Kuhn and Laird, 2014), and academic achievement (Porumbu and Necsoi, 2013). Additionally, the potential for the school environment to influence student's knowledge, attitudes skills (Cheung et al., 2017) and, health outcomes (Centers for Disease Control and Prevention, 2013; Choudhry et al., 2011) is also widely recognized. Since behaviour occurs within an environmental and social context, people tend to maintain behaviours that are in line with their sociocultural milieu (Kwasnicka et al., 2016). This is seen in our study where participants identified several sources for health information, which by extension students in other schools could also have access to. However, having a school health program in addition to the knowledge provided by these sources added value of providing supportive environments for putting the acquired knowledge to practice.

The feeling of personal responsibility for one's health as indicated by participants in this study was consistent with other researches among Canadian youth. Woodgate and Leach (2010) identified that sentiments of frustrations and struggles to maintain a healthy lifestyle as part of daily routine were expressed by young people. Kenney and Moore (2013) found strong views on personal responsibility toward one's health among Canadian adolescents. These views were attributed to school curriculums that place a greater emphasis on the individual and their lifestyle behaviours, without providing the needed support to sustain these behaviours. When society or the education system takes an individualistic approach to health behaviours, it can make people feel guilty about their own actions, mask the power and influence of their environment on choices available and associated behaviours, and potentially stifle change (Koch, 2016). Another possible explanation for the feeling of guilt and stress is



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that, as part of the developmental changes of adolescence, there is significant mental development, and social-role changes (Roeser et al., 2000), such that these changes could potentially impact adolescents' perspectives and expectations of themselves. Influences from peers, the media, family and society may determine the kind of goals adolescents set for themselves and the resultant pressure they feel to achieve these goals (Rayner et al., 2013; Ricciardelli and McCabe, 2001; Veldhuis et al., 2012). Thus, the very nature of the developmental changes associated with adolescent years, and the societal norms and values could influence the unrealistic behavioural expectations and associated stress about not achieving them.

The personal and contextual factors identified in this study interact in their impact on how health behaviours are sustained. In order to address these areas to support realistic and sustainable adolescent health behaviours, we propose the use of two approaches within the school context. First, the use of the Waters et al. (2009)'s theoretical model of social and ecological structures supporting adolescents' connectedness to school. This model incorporates Deci and Ryan's Self Determination Theory (Ryan and Deci, 2008), which posits that both intrinsic and extrinsic motivations are highly influential determinants of our behavior. These level of influences were identified in our study as contextual and personal factors. These motivations drive people to try to meet the three basic human needs: autonomy (need for a sense of control over one's life), competence (need for skill and aptitude in dealing with the things that are important to them) and relatedness (need to have a sense of belonging and connectedness with other); when these needs are met, good health and well-being can prevail (Ryan and Deci, 2000). The theoretical model highlights ways in which the school can try to satisfy these three innate needs. Student's feelings of competence can be enhanced by providing clear boundaries and structure for behaviour. Autonomy can be enhanced through the provision of choice to students and helping them set and achieve realistic goals for themselves for their health and education. This could help address the issues of pressure from from the personal-level challenges they face. Feelings of relatedness can be enhanced by opportunities for involvement in the school community (which could also enhance autonomy) and emotional support provided to students. Ultimately, when these innate needs are met, it leads to better engagement with their environment and ultimately improves skills, abilities and personal adjustments (Waters et al., 2009).

Since schools cannot work in isolation to meet students' needs, we therefore propose the CSH approach of a planned, integrated and holistic way to supporting students' educational outcomes and health needs as the second approach (Joint Consortium for School Health, 2018). This approach comprises of four distinct but inter-related components, namely: 1) social and physical environment; 2) teaching and learning, 3) policy and 4) partnerships and services. School communities can tailor their actions in the four components to their unique settings and to the needs of the schools (Veugelers and Schwartz, 2010). CSH has been used in school-based health promotion projects, and it allows for student-led initiatives, empowering students to make the healthy choice the easy choice (APPLE Schools, 2018). This approach could therefore contribute to addressing students' basic needs and the personal struggles in pursuing a healthy lifestyle, expressed in this study by engaging the individual and the external influences in a meaningful way. For instance, since the CSH approach typically encourages student engagement and leadership in planning and organizing activities (Joint Consortium for School Health, 2018), this process could be leveraged by program facilitators to educate, guide and support students to set sustainable personal health goals.

The use of a qualitative approach is a strength in this study, as it allows for a more personal and detailed exploration of the factors affecting sustainability of healthy behaviours and practices among adolescents. The lessons from the practical experiences shared can inform health promotion initiatives for children and adolescents. From the participants in this study, we understand that there is the need for supportive social environments for adolescents, to provide them the needed motivation to

sustain healthy lifestyles. Regarding limitations, time constraints for some of the interviews because of the school curriculum could have impacted some opportunities to probe deeper into participant responses, but data generation was continued until saturation was reached. Social desirability issues could have biased some responses. However, the researcher worked to build rapport with the participants and conducted the interviews at participants' convenience in a setting of their choice to enhance the quality of the data generated.

# 5. Conclusions

Contextual and individual factors are interrelated in their influence on lifestyle. Although adolescents placed a significant emphasis on personal responsibility for their personal choices and behaviours, continued environmental support is relevant to promoting healthy lifestyles in the junior high /high school environment. Therefore, health promotion strategies such as the CSH approach, which address both individual behaviours and the environmental influences are relevant to support healthy lifestyles in adolescence.

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**Appendix 1**

Interview Guide

a) Overall conception/understanding of the term "healthy lifestyle"
b) Current lifestyle practice
c) Current practices in different settings (home, school, community)
d) Facilitators and barriers to healthy practices
e) Strategies to overcome these barrier
f) Perceived impact of school-based health promotion programs
g) Sources of health information
h) Perception of these sources (e.g. trustworthiness)
i) Recollection of APPLE Schools program or other school health program in elementary school
j) Perceived impact of school-based health programs

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