

AMERICAN UNIVERSITY OF BEIRUT

EXPLORING PARENTAL AND CHILDREN PERSPECTIVES
TOWARDS HEALTHY EATING AND ACTIVE LIVING IN
LEBANON: A QUALITATIVE STUDY

by
MYRIAM KHALIL DAGHER

A thesis
submitted in partial fulfillment of the requirements
for the degree of Master of Science
to the Department of Nutrition and Food Sciences
of the Faculty of Agriculture and Food Sciences and the Faculty of Health Sciences
at the American University of Beirut

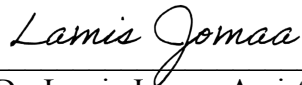
Beirut, Lebanon
January 2021

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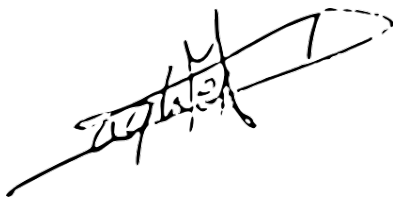
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ACKNOWLEDGEMENTS

My deepest gratitude goes to the support I have received from my thesis supervisor, Dr. Lamis Jomaa, who has enriched my journey with her valuable mentoring and continuous support. Dr. Lamis, I am proud to have worked under your supervision.

I would like to thank my thesis committee members, Dr. Tamar Kabakian and Dr. Lara Nasreddine, for joining the committee and complementing my research with their valuable experiences, insightful advices, and unmatched support.

I would like to acknowledge Mrs. Mona Hallak, director of the AUB Neighborhood Initiative, for giving me from her time and facilitating my access to the schools.

A sincere “thank you” goes to Mrs. Marwa El-Harakeh for her remarkable support throughout my thesis proposal and data collection process.

I would also like to thank all the schools’ principals and administrators who have made this research study possible, especially during this tough year.

Lastly, I would like to thank my family for their continuous support and encouragement.

ABSTRACT OF THE THESIS OF

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for Master of Sciences
Major: Public Health Nutrition

Title: Exploring Parental and Children Perspectives towards Healthy Eating and Active Living in Lebanon: A Qualitative Study.

Background. Childhood obesity remains one of the major public health problems worldwide. During the past four decades, the global prevalence of obesity among children and adolescents has been increasing rapidly, reaching alarming rates. Childhood obesity has been an increasingly challenging health problem for low- and middle- income countries undergoing remarkable nutrition transition. Lebanon, a small Mediterranean country has been undergoing a nutrition transition, with rising rates of Lebanese school-aged children who are obese. The shift in dietary intake and food consumption behaviors of children towards more highly processed, ‘westernized’ dietary patterns, together with increased sedentary behaviors have been increasing the risk of pediatric obesity and its adverse health consequences among Lebanese children and youth. However, the experiences and perceptions of healthy eating and active life have never been qualitatively explored among Lebanese children and/or their parents to understand the influences behind the eating and activity behaviors of children.

Objectives. The main objective of this study was to explore the perspectives and experiences of school-aged children (10 to 11 years) and their caregivers (mothers) towards healthy eating habits and regular physical activity in the urban area of Beirut, Lebanon. A secondary objective of the study was to compare the parental and children perspectives towards these eating and lifestyle behaviors. A third objective of the study is to identify potential strategies and approaches that can be recommended to improve the eating and lifestyle behaviors of children.

Methods. A qualitative approach was adopted to investigate the perspectives and experiences towards healthy eating and active living of both children and mothers and to identify factors that affect these lifestyle behaviors among school-aged children. Three schools were selected using a purposive sampling approach. Focus group discussions and in-depth interviews were conducted with children and their mothers from one public and two private schools purposively selected from the Beirut area, Lebanon. Due to COVID-19 and the interruption of the regular school year, data collection was conducted through in-person focus group discussions and in-depth interviews, as well as through virtual platforms (i.e., Zoom, Microsoft Teams, phone calls). Thematic saturation was achieved at five FGDs (3 FGDs with 15 girls and 2

FGDs with 9 boys), and eight interviews with mothers. Topic guides covered the main constructs of the social cognitive theory. The analysis was conducted using the thematic inductive analytical approach to gather and analyze the data. This approach includes becoming familiar with the data, generating initial codes, creating, reviewing and defining themes and sub-themes, and writing the findings. Ethical approval for the study was secured from the Institutional Review Board at AUB. In addition, informed consent and assent were secured from mothers and children, respectively, prior to participation in the study.

Results. Six FGDs were conducted as part of the study: 3 FGDs with girls (n = 16) and 3 FGD with boys (n = 11). In addition, in-depth interviews were conducted with 11 mother of participating children. Thematic analyses showed four main overarching themes that were common between the nutrition and physical activity behaviors, namely: i) perceptions of healthy eating behavior and physical activity, and their impact on children's wellbeing, ii) determinants of eating and physical activity, iii) school and sports environment, and iv) suggestions to encourage healthy eating and physical activity among children. In addition, for nutrition behaviors, eleven sub-themes emerged, whereas nine sub-themes emerged from our study when exploring the perceptions and experiences of children towards their physical activity behaviors. In the first theme, children perceived healthy eating based on food types, color, and balance and moderation, whereas mothers related healthy eating mostly based on nutrients. In addition, both children and mother participants determined activity patterns based on children's activity preferences (i.e., organized sports, leisure activities) and their own enjoyment. Children and mothers presented their views regarding the impact of healthy eating and physical activity on children's wellbeing. Children discussed the general health benefits related to their overall physical health and wellbeing, as opposed to the perceived benefits reported by their mothers, such as disease risk reduction. In parallel, children and mothers perceived distinct benefits of physical activity, and expressed negative attitudes related to physical discomfort and safety concerns. In the second emergent theme, participants described a set of intrapersonal, social, and environmental determinants that influence children's eating and activity habits. Individual factors included food preferences and choices and eating out of boredom or as a result of strict restrictions to reduce the spread of COVID-19. Also, the use of rewards or compensations to engage in healthy eating and active behaviors and the perceived ability of children to eat healthily and to participate and succeed in physical activities were other individual determinants that were perceived differently among children and their mothers. Social factors encompassed the influence of families and friends. Children and mothers generally agreed that families (parents, siblings, and extended family members) affect food and activity choices. However, peer influence was only raised by children, as mothers discussed only the influence of parents and family members on their children's eating and activity habits. The availability and affordability of healthy foods and spaces to practice physical activity, as well as food advertisements, were key environmental factors expressed in our findings. Another theme that emerged from the FGDs and interviews was the role of schools and sports facilities in setting a good example for children's healthy eating and active behaviors. Several subthemes emerged under this theme including the influence of food environment, timing of physical activity, and the role of teachers.

In the fourth theme, participants have suggested relevant solutions to provide support at multiple levels. These strategies include intrapersonal strategies (e.g., improve self-efficacy, promote the immediate benefits and the way to cope with environmental barriers for desired behaviors) that were suggested by children. In addition, children and mothers suggested social strategies that can be promoted such as parental education, increasing peer and parental support and role modelling. Furthermore, school strategies were suggested by children and mothers (e.g., provide the necessary knowledge, skills, positive support towards dietary and physical activity practices, increasing the availability of healthy food choices while decreasing that of unhealthy foods). Lastly, societal strategies and political decisions were raised by participants, such as the provision of easily accessible and affordable facilities that encourages healthy foods and physical activity and reducing the prices of healthy food options.

Conclusion. The study findings highlight the overall positive perceptions and experiences of school-aged children and their mothers towards healthy eating behavior and physical activity. Several individual, social, and environmental influences were reported by children and their mothers as it pertains to children's eating and activity habits. These factors were also supported by recommendations as to why and how to best promote behavioral change among children using the social cognitive theory. This study also demonstrates the similarities and differences found between children's and their mothers' insights, demonstrating the importance of including both children and parents in the data collection process and support effective communication between parents and children in future health-related interventions. Furthermore, our study findings highlight student and parental-driven recommendations for practical initiatives to help promote healthy eating and lifestyle behaviors among youth. The generated knowledge and suggested initiatives can be theory-based and can be used as a platform to inform the stakeholders and policymakers on the key aspects to be addressed in the development of effective school and family-based programs and interventions to address pediatric overweight and obesity.

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ABBREVIATIONS

&	And
%	Per cent
±	Plus or Minus
=	Equal to
AUB	American University of Beirut
B	Boy
BMI	Body Mass Index
DOHC	Department of Health and Children
FGD	Focus Group Discussion
G	Girl
GSHS	Global School-based Student Health Survey
IRB	Institutional Review Board
LMIC	Low- and Middle- Income Countries
M	Mother
MENA	Middle East and North Africa
n	Total Number of Individuals in the Population
PI	Principal Investigator
PR	Private School
PU	Public School
SCT	Social Cognitive Theory
SSBs	Sugar-Sweetened Beverages
UNHR	United Nations Human Rights
WHO	World Health Organization

CHAPTER I

LITERATURE REVIEW

A. Childhood Obesity

Childhood obesity remains one of the major public health problems worldwide. During the past four decades, the global prevalence of obesity among children and adolescents has been increasing rapidly, reaching alarming rates. According to the latest World Health Organization (WHO) estimates, the worldwide prevalence of overweight and obesity among school-aged children (aged 5 to 19 years) has risen from 11 million in 1975 to over 124 million in 2016; a dramatic tenfold increase (WHO, 2018). If the current increasing trend continues, school-aged children who are obese will surpass those who are moderately-to-severely underweight by 2022 (WHO, 2017). Childhood obesity can have serious adverse consequences on the health and wellbeing of children, continuing into adulthood. Children with overweight or obesity are more likely to experience hypertension and metabolic disorders during childhood, as well as psychological problems such as low self-esteem and stigmatization. If untreated, these early adverse health and wellbeing problems will be manifested in adulthood through non-communicable diseases, along with anxiety, poor employment status and productivity later in life (CDC, 2016; WHO, 2018).

Unhealthy dietary habits and physical inactivity are amongst the main immediate factors attributed to childhood obesity (Satish, 2019). The socio-ecological model investigates the influences behind the eating and activity habits of children and offers numerous insights into how environmental, social, and personal influences may impact obesity in children.

B. Environmental Influences of Childhood Obesity

Eating and activity habits of children are influenced by environmental features such as school, community characteristics, and culture (Davison & Birch, 2001). Obesogenic environment, characterized by the availability, accessibility, affordability, and marketing of unhealthy food products, as well as the promotion of sedentary behaviors, is associated with increased energy intake (Driessen et al., 2014; Townshend & Lake, 2017). Prior studies revealed that a healthy school food environment (including fast-food restaurants, kiosks, canteens, and food vending machines) allowed and encouraged the school community (children, families, school staff, etc.) to make healthier food choices (Payán et al., 2017). In addition, afterschool physical activity programs have been predicted to reduce childhood obesity, mostly among children aged 6 to 12 years (Kristensen et al., 2014). Furthermore, children and adolescents who live in supportive neighborhoods that are accessible to parks and characterized by a safe infrastructure, were 80% less likely to be overweight and obese compared to those living in unsupportive neighborhoods (Harrison, 2017). Also, the availability and accessibility of spaces (e.g., not distant, less expensive) have been considered significant facilitators of children's and adolescents' physical activity (Abdelghaffar et al., 2019; Hesketh et al., 2017). Some cultural values and practices, such as preparing traditional food and family meals, have been shown to act as protective influences on childhood obesity (Chatham & Mixer, 2020).

From a broader scope, government and social policies that create an enabling environment for a healthy diet and physical activity could potentially influence the lifestyle of children and adolescents (Waxman, 2004). For example, fiscal policies, such

as taxing sugar-sweetened beverages (SSBs) is a promising initiative in combating obesity among children (DOHC, 2015). In fact, systematic reviews have found that taxes on SSB strongly influence consumption, and further studies found that a 10% increase in price would lead to a decreased consumption to an average of 12% among children and adolescents (Andreyeva et al., 2010; Thow et al., 2010; Yoshida et al., 2018). Another example that was shown effective to improve children's healthy lifestyles is the presence of national policies and incentives to ensure that walking, cycling, and other forms of physical activity are safe and accessible (e.g., nonmotorized modes of transportation, sport and recreation facilities that encourage physical activity) (Waxman, 2004). The regulation of unhealthy food and drink advertising (TV AD) is another governmental policy that may be adopted to combat obesity among children, as it has shown to reduce body mass index (BMI) in children while generating yearly revenues that could be invested for health promotion activities (Gortmaker et al., 2015; Sonnevile et al., 2015).

C. Social and Personal Influences of Childhood Obesity

Eating and physical activity patterns are also shaped by underlying determinants such as family and social networks (Davison & Birch, 2001). For instance, children who usually eat with their parents are more likely to consume healthful foods and are more willing to try new food items as compared to children who often eat out with friends or eat while watching TV (Sahoo et al., 2015). Children's family and social network have also been shown to influence their activity habits. Children who are surrounded by family members, siblings, and friends who are active or have an interest in sports, are

encouraged to engage in an active lifestyle (Hesketh et al., 2005; Jonsson et al., 2017; Riggs et al., 2013).

Finally, children's personal factors greatly influence children's food and activity habits. On one hand, food preferences (e.g., taste, texture, appearance, familiarity, smell, food preparation) were consistently identified as a major influence on the food choices of young people (Fitzgerald et al., 2010; Payán et al., 2017; Talip et al., 2017). On the other hand, physical activity levels are influenced by personal factors such as gender and personal preferences. While girls favored non-active games during recess time and preferred to spend recess time talking or doing role-playing games rather than performing physical activity, boys only opted for very competitive sports, such as football (Jonsson et al., 2017; Martínez-Andrés et al., 2017). Moreover, incorporating the skill of managing time (e.g., study hours, household tasks) in the daily schedule of youth represented a facilitator to prepare healthier meals and being more active (Hasan et al., 2020; Jonsson et al., 2017; Ross et al., 2016).

Therefore, gaining insight into how children's choices and behaviors are framed and acquired, is essential for promoting a healthy lifestyle and preventing childhood obesity.

D. Perceptions of Children and Parents

It is imperative to explore the perceptions of both children and their parents towards healthy eating and active living to better understand children's engagement in a healthy lifestyle.

On one hand, it is paramount to understand parents' perspectives towards their children's health behaviors. Parents have been universally accepted to be primarily

responsible for the establishment of early habits for children, and thus have a strong influence on their children's healthy living (Keane & Willetts, 1994). They can encourage healthful choices and active living, or conversely, they can affect their children's lifestyles negatively (Adamo & Brett, 2014). Parents also act as role models, and health promoters influencing their children's eating and athletic perceptions and choices (Garrido-Fernandez et al., 2020; Moore et al., 1991). Furthermore, parental modeling could build normative and self-efficacy beliefs of children, which in turn drives their behaviors (Bandura, 2004). A recent systematic review has found that when parents use unhealthy food as a reward for their children's behavior, children tend to consume more of them regularly (Yee et al., 2017). This is likely due to the fact that children might associate these foods as valuable and positive (Birch et al., 1980; Lu et al., 2015; Remington et al., 2012). In addition, parents pressuring their children to eat was associated with high consumption of unhealthy food (Yee et al., 2017). Similarly, children who consistently observed their parents' physical activity patterns were more likely to imitate some of the observed behaviors (Connolly, 2017). Parental degree of support was also associated with the self-esteem and participation of students in sports activities (Qurban et al., 2019). Furthermore, parents can offer pertinent insights into the physical and social environments that affect children's health (Chappell & Funk, 2004; Teedon et al., 2014).

While it is ultimate to understand parents' perspectives towards their children's health behaviors, children's own experiences and viewpoints are important to consider. First of all, parental perception of a child's eating behavior and active living are insufficient to reflect the reality (Adamo & Brett, 2014; Corder et al., 2010; Eckstein et al., 2006; Garrett-Wright, 2011). Previous studies comparing parents' perceptions of

their children's weight status and their actual weight showed that parents are more likely to perceive their kids as being underweight than being obese (He & Evans, 2007; Rivera-Soto & Rodriguez-Figueroa, 2012). Also, parents of inactive children assumed that their children are sufficiently active (Corder et al., 2010). Secondly, parents and children might have different views regarding social influence on diet and physical activity behaviors. For example, a recent study showed that adolescents favored support from their families while their parents reported that peer support was required by their children to eat healthier and become more active (Azar et al., 2020). Secondly, every child can efficiently express his or her view when it comes to all matters affecting his or her health or well-being, as stated by the United Nations Convention on the Rights of the Child (UNHR, 2020). Studies have shown that children, as young as four years old, can interpret a map-like model and a photograph effectively, as well as express their views when it comes to their eating and physical activity habits (Blades et al., 1998; Morrow, 2001; Pearce et al., 2009). In addition, children were able to express explicitly their perspectives of their environmental influences on their eating and physical activity, such as family and social influence, as well as proximity and convenience (Cowley, 2017; Pearce et al., 2009). Thirdly, most of the studies that investigated the perspectives of caregivers, such as parents and educators, to develop children-centered interventions. However, children are the ones who can be active participants in the determination of their experiences and in making changes to their habits and environments (O'kane, 2008). Previous evidence showed that children might provide practical suggestions for improving access to healthy food options at the school canteen, such as the use of recognizable symbols for labeling healthy food choices (Goh et al., 2009). Pearce et al. (2009) used the “photovoice” research method in which children aged 10 to 11 years

take photographs from their everyday life to share views on a particular topic. Children have generated innovative intervention ideas, such as “cook and eat” sessions, which might improve children's unfamiliarity with food, as it was cited as one of the barriers for the participants (Pearce et al., 2009). Children and adolescents also suggested prioritizing physical education classes in their schools through the provision of open and safe places, opportunities for students to explore new activities, and using role models to deliver the sessions, as well as offering rewards after sports sessions (Corder et al., 2015; Hasan et al., 2020). Likewise, children with obesity recommended a collective approach denoting the need to establish family support with limits, improving the accessibility and availability of physical activity opportunities and healthy foods, and regulating marketing that could lead to deceptive practices (Kebbe et al., 2019).

Given the previous evidence, the main challenges that children face when following a healthy lifestyle may not be totally recognized by their parents, and children can be active participants in the determination of their experiences and in making changes to their habits and environments. Thus, it is essential to complement parental perceptions of their children's dietary and lifestyle behaviors with children's own experiences and viewpoints. Studies have shown that exploring the opinions of both parents and school-aged children's towards the barriers and facilitators of healthy living helped inform better design and implementation of community-based policies and programs that promote healthy living (Hesketh et al., 2005; Lilo et al., 2019; MacLellan et al., 2010). This could increase the likelihood that children and their families will positively perceive and engage in those programs. Consequently, identifying the perceptions of both, children and primary caregivers, on childhood healthy eating and active living, can help inform the development and implementation of effective and

culturally appropriate interventions to influence children's healthful behaviors (Payán et al., 2017).

E. Qualitative Research and Theoretical Approaches for Behavioral Change

In order to be able to study the perspectives of children and their parents towards healthy living, qualitative research and theoretical frameworks in health promotions are employed to reach this goal (Glanz et al., 2008; Fertman & Allensworth, 2016).

Drawing on qualitative approaches is ideal for exploring the hidden influences on young children's eating and physical activity patterns (Sparkes & Smith, 2013). Qualitative research, particularly focus group discussions and in-depth interviews, place the individual at the center of analysis, allowing a distinctive understanding of the perspectives and experiences related to healthy living (Foster et al., 2007; Shepherd et al., 2006). Envisioning the experiences of young children and how healthy and active living might be shaped by contexts and circumstances can enhance the development of community-based nutrition policies and programs (Krueger & Casey, 2009; Foster et al., 2007). In addition, suggestions from young children and parents in making changes to children's habits and environments would lead to the development of a successful intervention to prevent childhood obesity, where everyone who has a stake in the program has a voice (Nguyen et al., 2017; Van Lippevelde et al., 2011). Previous evidence employing the perspectives and suggestions of school-aged children and their parents regarding healthy eating and active living has provided contextual insights to design appropriate interventions to tackle children and adolescents obesity and promote healthy lifestyle (McInvale Trejo et al., 2019; Vamos et al., 2016; Viner et al., 2020).

Bandura's Social Cognitive Theory (SCT) provides a useful framework for explaining why children and adolescents acquire and maintain certain health behaviors (Baranowski et al., 1997). SCT is one of the most commonly used theoretical models in explaining young people's eating choices and activity habits (Cerin et al., 2009; Lubans et al., 2008). Based on the SCT, the health behavior is framed into a triadic model, in which a person's attributes of the behavior, personal and environmental factors interact and influence each other (Bandura, 2004; Glanz et al., 2008). The fundamental concepts of the SCT that are relevant to eating behaviors and physical activity habits include: i) psychological determinants of behavior, ii) observational learning, iii) environmental determinants of behavior, and vi) self-regulation (Glanz et al., 2008; Fitzgerald et al., 2010).

A number of psychological determinants at the individual level have been identified in SCT. One central factor is *self-efficacy*, which refers to an individual's belief in the ability to perform a specific behavior. Outcomes expectations and expectancies are other individual-level psychological determinants. *Outcome expectations* are defined as a person's beliefs about the probability and value of the outcome that might result from performing a particular behavior (Glanz et al., 2008). And, *outcome expectancies* represent a person's judgment of the possible consequences that will arise from performing, or not, a specific behavior (Glanz et al., 2008). Several studies have shown that young people's dietary and physical activity habits were strongly correlated with the beliefs towards their capacity to perform the behavior and their perceptions of it (Ball et al., 2009; Lubans et al., 2008; Pearson & Crawford, 2011; Ramirez et al., 2012). For instance, a large scale study conducted among Australian adolescents has found that self-efficacy for decreasing empty-caloric food intake and for

increasing fruit consumption was associated with reduced intake of poor-nutrient snacks and increased consumption of fruits and vegetables (Pearson & Crawford, 2011). Also, self-efficacy and outcome expectations were found to be predictors of engaging in regular physical activities and in overcoming the barriers of sedentary habits, such as poor weather and alternative deskbound events among elementary school-aged children in the United States (Ramirez et al., 2012).

Learning to perform a new health behavior is also central to the SCT. Observational learning is characterized by the exposure to interpersonal displays that determine what actions a person can observe and consequently choose to attend (Glanz et al., 2008). Many studies have shown that behaviors are imitated mostly when a person perceives them frequently (Azar et al., 2020; Jonsson et al., 2017; Story et al., 2002). School-aged children tend to consume unhealthy foods when they spend time with social groups that consume non-nutritious foods (Azar et al., 2020). As such, adolescents reported feeling motivated to engage in active living when they are surrounded by social groups who usually perform regular activities such as hiking versus a group of friends who prefer to spend time on the screen (Azar et al., 2020).

The SCT also describes the powerfulness of the influence of the environment on a person's behavior. This Theory hypothesizes that observational learning cannot lead to behavioral change solely unless the observers' environment is conducive and supportive of the new behavior (Glanz et al., 2008). The build environment's structures and features have a strong influence on a particular behavior. For example, students emphasized the role of schools in promoting physical health, such as replacing unhealthy-packaged food from the canteen with fresh fruits and vegetables and providing additional time for active play and dancing (Riggs et al., 2013). Media is

another example by which unhealthy food marketing conveyed through television and social media advertisements were influencing children's eating habits (Ishak et al., 2020; Riggs et al., 2013). The provision of financial incentives or disincentives to promote healthy living is another common form of environmental change (Barte & Wendel-Vos, 2017; Wall et al., 2006).

Furthermore, the SCT highlights the human capacity as being able to anticipate long-term desired outcomes. This is known as self-regulation, which can be achieved in several ways, including self-control. *Self-control* or *goals* to perform the behavior, involve setting goals, distal or proximal, to inform current actions and set the course for change. Individuals with a high level of self-regulation believe they are in control of their behaviors, and therefore are more likely to develop strategies to continue engaging in healthy eating and active living when faced with obstacles (Glanz et al., 2008; Mailey et al., 2016). Thus, studies that have previously explained dietary and activity patterns amongst children and adolescents using the SCT have shown that the fundamentals concepts of this framework serve as a useful charter to explain young people's choices and behaviors. It is important to mention that these studies have been mostly conducted in developed countries and as such their findings may not be pertinent to other low- and middle-income countries, given the context-specific nature and environment of eating and activity patterns (Azar et al., 2020; Barte & Wendel-Vos, 2017; Ishak et al., 2020; Jonsson et al., 2017; Mailey et al., 2016; Riggs et al., 2013; Story et al., 2002; Wall et al., 2006). This may be particularly true for the Middle East and North Africa region, which is currently undergoing the nutrition transition, with shifts in eating habits and physical activity patterns (Sibai et al., 2010).

F. Local Evidence (Middle East and North Africa region and Lebanon)

The Middle East and North Africa (MENA) region is currently facing a rapid rate of urbanization, with a significant increase in obesity prevalence among children and adolescents (Sibai et al., 2010). The latest estimate of the prevalence of overweight among children and adolescents in the MENA ranges between 19.5% and 28.2%, respectively (Farrag et al., 2017). In the region, evidence is shedding light on the association of childhood obesity and non-communicable disease, including metabolic syndrome, early onset of cardiovascular diseases, and type 2 diabetes (Kelishadi et al., 2013; Farrag et al., 2017). The high rate of childhood obesity has been primarily attributed to the ongoing nutritional transition (i.e., the shift in dietary consumption and energy expenditure that coincides with economic, demographic, and epidemiological changes), characterized by a rapid change in behavioral and eating trends. These trends are mainly driven by sedentarity, higher consumption of foods rich in saturated fats and sugars, as well as reduced intakes of nutritious food, particularly whole-grain cereals, and fresh fruits and vegetables (Aboul-Enein et al., 2017; Nasreddine et al., 2014; Sibai et al., 2010). A recent systematic review in the MENA region revealed that unhealthy dietary patterns and sedentary lifestyles (i.e., physical inactivity and increased screen time) were significant risk factors for childhood obesity (Farrag et al., 2017).

Underlying and environmental dynamics highly influence these individual-centered risk factors. Data from a cross-sectional study conducted on a sample of 4,698 students aged 15–18 years from seven Arab countries (Algeria, Jordan, Kuwait, Libya, Palestine, Syria, and the United Arab Emirates) indicated that lack of information on healthy eating, not having time to prepare or eat healthy food, and the lack of motivation to be active or eat healthy foods were the main barriers to healthy eating

(Musaiger et al., 2013). In addition, the network of family members and friends together with the school environment were also cited to have strong influence on children's eating and physical activity behaviors (Musaiger et al., 2013). The same study also showed significant differences between male and female children within each country and among countries for most of the barriers. For instance, girls faced more obstacles to do physical activities than boys in all countries included in that study (Musaiger et al., 2013). Social and cultural factors may explain the discrepancies in relation to girl's and boy's eating and physical activity routines (Bruening et al., 2010; Jenkins et al., 2005; Musaiger et al., 2013).

Like many nations in the MENA region, Lebanon, a small middle-income country in the area, is currently undergoing the nutrition transition and experiencing rapid economic, demographic, and cultural changes. The prevalence of Lebanese school-aged children who are obese has been rising since 1997, reaching worrying rates (Farrag et al., 2017; Nasreddine et al., 2012; Nasreddine et al., 2014). Lebanon has been placed among the top five MENA countries with the highest prevalence of overweight among youth under the age of 20, with a prevalence of around 22% among males and 12% among females (Farrag et al., 2017). According to Nasreddine and colleagues, Lebanon has witnessed a two-fold increase in childhood obesity rates from 7.3% in 1997 to 13.2% in 2009 (Nasreddine et al., 2012). Within the same period, abdominal obesity among this age group has followed an increasing parallel trend with a rise from 8.5% to 14% (Nasreddine et al., 2014). The metabolic and health consequences associated with childhood obesity are widespread among overweight and obese school-aged children in Lebanon, including abdominal obesity, hypertriglyceridemia, and insulin resistance, all of which are risk factors for premature non-communicable disease

(Nasreddine et al., 2012). These studies have shown that the eating and physical activity behaviors adopted by Lebanese children and adolescents are predisposing them to energy imbalance, and therefore obesity. A study in Lebanon conducted in 2014 has found that the diet of individuals aged 6 to 15 years is characterized by a low intake of fruits, vegetables, milk and fish, and high consumption of SSBs, fast foods, and sweets (Nasreddine et al., 2014). This is in line with the Global School-based Student Health Survey (GSHS) developed by the WHO in collaboration with the Ministry of Public Health and the Ministry of Education and Higher Education in Lebanon. The GSHS provides additional evidence that the prevalence of Lebanese students engaging in risky health behaviors such as drinking, unhealthy eating, and a sedentary lifestyle has roughly tripled from 19.9% in 1997 to 60.5% in 2009 (Jabbour, 2013; Nasreddine et al., 2012). A study in Lebanon has explored the influences of unhealthy eating among students in Lebanon, particularly energy drinks consumption. The study's findings highlight the multi-level factors affecting the behaviors of university students, including misinformation about the content of drinks, peer pressure, and social image, as well as the affordability and accessibility of unhealthy drinks (Ghozayel et al., 2020). This study gives us insights about the storm of influences that may enhance or hinder having a healthy living amongst children and youth.

G. Research Aim and Significance for Policy/Interventions

Lebanon is undergoing an epidemiological transition with rising rates of Lebanese school-aged children who are obese, which places overweight and obese school-aged children at risk of widespread metabolic and health consequences that threaten their health. The westernized dietary pattern and reduced physical activity

adopted by Lebanese children and adolescents are predisposing them to energy imbalance, and therefore obesity. However, data on personal, social, and environmental factors influencing the eating and activity behaviors of Lebanese youth are lacking. To date, the experiences and perceptions of healthy eating and active life have never been qualitatively explored among Lebanese children and/or their parents to understand the influences behind the eating and activity behaviors of children. The present study will contribute to the existing literature by understanding the perspectives, experiences, and influences of children aged 10 to 11, on healthy eating habits and regular physical activity in Lebanon. This age group was chosen in recognition that as children enter the phase of adolescence, social and environmental influences come into play and affect their behaviors (Hamilton et al., 2000). Furthermore, in the region and in Lebanon, no known study has set out to qualitatively explore the similarities and differences between children's and their parents' perceptions of the factors influencing their behaviors. The findings of this study will help inform the development of evidence-based community programs and interventions in an attempt to curb the rising rates of obesity in this age group, promote healthy lifestyles among children, and generate hypotheses for future research.

To meet the overall purpose of the present study, the specific study objectives include:

1. To explore the perspectives and experiences of children (10-11 years) on healthy eating habits and regular physical activity in the urban area of Beirut, Lebanon.
2. To compare the perspectives of children (10-11 years) and their caregivers (primarily mothers) towards healthy eating habits and regular physical activity.

3. To identify potential strategies and interventions that can be recommended to improve the eating and lifestyle behaviors of children in an attempt to curb the rising rates of obesity.

CHAPTER II

METHODOLOGY

A. Study Design and Population

This study adopts an exploratory mixed-methods approach to examine factors influencing healthy nutrition and physical activity among children and their mothers. We opted for an exploratory, descriptive approach as a method to provide a contextual description of the phenomenon, as experienced by study participants. This approach is based on the general principles of naturalistic inquiry that has a broad range of choices for theoretical or philosophical orientations, sampling techniques, and data collection strategies (Colorafi & Evans, 2016).

The qualitative part of the mixed-methods study was completed as planned. The qualitative method approach adopted was intended to investigate the perspectives and experiences related to factors influencing healthy eating and active living of both children and mothers. Focus group discussions (FGDs) and in-depth interviews were conducted with children and mothers from selected schools in the capital of Lebanon, Beirut. The SCT guided the data collection of the present study. This Theory provides a useful framework for explaining why children acquire and maintain healthy dietary behaviors (Lubans et al., 2012). More information about the SCT framework are present in the literature review, section E (Qualitative Research and Theoretical Approaches for Behavioral Change). Given the unexpected situation of COVID-19, and the interruption of the regular school year in Lebanon, the quantitative part of this study was postponed till a later date.

Older elementary school students (boys and girls) from grades 5 and 6 (aged 10 to 11 years) and their mothers constituted our sample. Mothers were selected as the primary caregiver of children as they were often used as a parent proxy respondents in most of the studies reporting children's eating and activity habits (Azar et al., 2020; Hasan et al., 2020; Park et al., 2019; Lopez-Dicastillo et al., 2010; Rawlins et al., 2013). The inclusion of data from two types of participants (children and mothers) ensures triangulation of data sources, which improves the credibility of qualitative findings (Santiago-Delefosse et al., 2016). The study was reviewed and ethically approved by the Social and Behavioral Sciences Institutional Review Board (IRB) at the American University of Beirut (AUB).

B. Recruitment of Schools and Study Participants

After obtaining the IRB ethical approval, three schools were selected using a purposive sampling approach. We mapped a list of potential schools located in the study area and stratified them by school fees into low-tuition fees (public schools) and medium- to high- tuition fees (private schools). We assumed that schools' tuition fees would reflect the diversity in the socioeconomic and cultural backgrounds of students and their families.

Schools' principles and academic heads/supervisors of grades 5 and 6 were approached by the research team, who explained the study's aims and objectives and provided formal letters inviting them to take part in the study (Appendix I, A & B). The AUB Neighborhood Initiative facilitated securing the approval of the public school's administration. After obtaining the approval of school administrators, the research team coordinated with the academic heads/supervisors of grades 5 and 6 to invite elementary

school students and their mothers to participate in the study. The inclusion criteria used for recruiting study participants (children and their mothers) included the following:

1. Lebanese children aged 10 to 11 years old.
2. Generally healthy children and their mothers: absence of any disease that may impair growth, absence of chronic illness, inborn errors of metabolism, physical disabilities or malformations that would interfere with eating patterns and body composition.

Given the COVID-19 pandemic, in-person recruitment and data collection process were interrupted. The recruitment and data collection process in the first school happened in-person during February 2020. Then, after COVID-19 lockdown measures were implemented all over Lebanon in March 2020, we transitioned to the use of phone calls and online platforms, such as Zoom and Microsoft Teams to recruit, consent, and collect data from research participants in the remaining schools. In both cases, the research team coordinated continuously with the academic heads/supervisors of grades 5 and 6 to minimize the research process's interference with the regular and/or online class schedule. IRB ethical approval for the amended protocol of recruitment was also sought prior to resuming data collection.

1. Recruitment of study participants from the public school

In the second half of the school year 2019-20 (February-March 2019-20), the graduate student (M.D.) invited elementary school students (boys and girls) from grades 5 and 6 from a local public school in the area of Beirut to participate in the study through announcements in classrooms by explaining the aim, objectives, and methods of the research. The announcements were followed by the distribution of an enclosed

package to be sent home with children that includes: i) invitation letters (Appendix II, A) and ii) mother permission/consent form (in sealed envelopes), in which a comprehensive explanation of the study aims, objectives, processes was present along with an informed consent to sign (Appendix III, A). Also, the graduate student explained to the children that refusal to participate in the study would not influence student's grades and academic year. After making the announcements, students were informed to give back the forms filled by their mothers to the academic supervisor of grades 5 and 6 within one week after the distribution of the packages. Once all collected, the academic supervisor handled them back to the research team.

Mothers who agreed to participate in the study by providing their written consent before the data collection, were contacted by the graduate student through a phone-call to schedule in-depth interviews in a private classroom setting on a separate date. Also, mothers were provided hard copies of the permission/consent form, which included the contact details of the study principal investigator (PI) and the IRB office at AUB. Mothers were assured that if they decided to withdraw from the study for any reason, this would not affect their relationship with the school.

Upon mothers' written permissions that were brought back to school with their child in sealed envelopes, children who agreed to participate in the FGD signed informed assent prior to the data collection (Appendix IV, A). Also, children were provided with hard copies of the assent form that included the contact details of the study PI and the IRB office at AUB. Children were assured that if they decided to withdraw from the study for any reason, this would have no influence on their academic year and would not affect their relationship with the school. The graduate student coordinated potential dates and places of the FGDs with the academic supervisor of

grades 5 and 6 to minimize interference of the research process with the regular class schedule, and to ensure a private and convenient setting for conducting the FGDs.

2. Recruitment of study participants from private schools

During the second half of the school year 2019-20 (May-June 2019-20) and during the first half of the school year 2020-21 (September-November 2020-21), at the time of recruiting the rest of the schools (private schools), COVID-19 lockdown measures were implemented all over Lebanon with school premise closures and resumption of classes remotely using online platforms. Thus, the recruitment and data collection processes of the private schools took place remotely. Upon getting the IRB approval and then the approval of the respective schools to conduct the research remotely, the head of the elementary department for grades 5 and 6 in the two private schools invited parents of students from grades 5 and 6 to participate in the study through sharing an invitation letter (Appendix II, B) by e-mails and/or on the school's online platform (e.g., E-learning).

Mothers who were interested in participating and/or allowing their children's participation in the study were asked to contact the graduate student through e-mail or WhatsApp, as indicated in the invitation. Then, mothers were contacted back to explain the study's aims, objectives, and methods and were provided the mother permission/consent form (Appendix III, B). Their written consent to participate in the interview and/or to give their child permission to participate in the group discussion was obtained by e-mail or on WhatsApp (if mother doesn't possess an e-mail). They were also asked to provide their written consent on i) keeping shared information confidential and ii) not taking pictures during the online FGD. Mothers who provided their written

consent prior to the data collection were then contacted by the graduate student to schedule in-depth interviews at a time of their convenience. Also, mothers were provided with soft copies of the mother permission/consent form that included the contact details of the study PI and the IRB office at AUB. Participants were assured that if they decided to withdraw from the study for any reason, this would not affect their relationship with the school.

Upon mothers' written permissions sent by e-mail or WhatsApp, children who agreed to participate in the FGDs provided their oral assent on the day of the data collection prior to starting the discussion (Appendix IV, B). Also, mothers were provided with soft copies of this form, to give them to their children, which included the contact details of the study PI and the IRB office at AUB. Children were assured that if they decided to withdraw from the study for any reason, this would have no influence on their academic year and would not affect their relationship with the school. The graduate student coordinated with mothers the potential dates of the FGDs to minimize the research process's interference with their daily schedule and to decide on an online platform based on the preference of children and their parents.

C. Instruments for Data Collection

Data collection instruments included a semi-structured FGD and in-depth interview guides for children and mothers, respectively (Appendices V & VI). FGD and in-depth interview guides included a series of open-ended questions on key healthy eating and physical activity themes. The development of the topic guides were informed by studies that explored eating and activity habits of children (Hesketh et al., 2017; Payán et al., 2017; Rogers et al., 2004; Zeinstra et al., 2007). The topic guides were also

informed by studies that used the SCT's constructs of expectations, expectancies, self-control, self-efficacy, and facilitators/impediments to investigate health behaviors of participants (Alexander et al., 2015; Branscum et al., 2011; Dewar et al., 2012; Moura et al., 2020; Riggs et al., 2015; Rogers et al., 2004; Verstraeten et al., 2014).

Furthermore, open-ended questions were incorporated to gather practical suggestions from children and their mothers to develop needed and attractive interventions to improve children's healthy habits and environments.

The constructs of this framework were used to design the topic guides' questions to explore children's and their mothers' perceptions, experiences, and influence towards youth's healthy eating and physical activity and how these patterns are nested within children's personal and environmental determinants. In brief, the questions raised for healthy eating revolved around exploring perceptions of healthy eating, what factors (personal, social, environmental) affects their eating and lifestyle habits among others. Probing questions were also used to facilitate discussions in the FGDs and in-depth interviews. The interview guides were also translated to Arabic to conduct the interviews and FGDs (Appendices V and VI).

a. Healthy Eating

- Perceived meaning of healthy eating
- Outcome expectations and outcome expectancies of healthy eating
- Social and environmental factors that may support or impede healthy eating
- How children reward themselves for eating healthy
- Suggestions about the improvement of nutrition programs/sessions for children
- Self-control and perceived confidence in the ability to engage in healthy eating

b. Physical Activity

- Perceived meaning of physical activity
- Outcome expectations and outcome expectancies of physical activity
- Social and environmental factors that may support or impede physical
- How children reward themselves for being active
- Suggestions about the improvement of physical education programs/sessions for children
- Self-control and perceived confidence in the ability to engage and succeed in regular physical activity schedule

D. Data Collection

FGDs with children were homogeneous regarding gender to provide an opportunity for possible gender-specific themes to emerge. In-person FGDs took place in a private classroom at the school premises during student's free time with 5 to 6 children and lasted for about 40 to 45 minutes. During these discussions, the moderator (the trained graduate student) asked the participants to serve themselves with some food and refreshments. The online FGDs took place through an online platform of children's choice (e.g., Zoom, Microsoft Teams) at a commonly convenient time for all. To minimize unwanted burden on participants, the number of expected participants per online FGD was adjusted not to exceed 5 children and the time of the online FGD was revised and adjusted to approximately 30 minutes.

In each FGD, the moderator first introduced herself, explained that her role is to guide the discussion, and requested the permission of participants for the FGD to be audiotaped. Then, the moderator used an icebreaker activity (i.e., start introducing each other) to get children comfortable with each other and with the moderator. We also asked children in the online FGD to turn on their videos if they would like to, in this way, participants are more likely to stay alerted and focused on what is discussed. Moving forward, the moderator followed the semi-structured FGD guide developed to moderate the discussion (Appendix V). The FGDs were conducted in Arabic or English, depending on the common language of participating children. No prior knowledge or characteristics about the moderator were shared with the participants, and neither was a relationship with participants established prior to the focus groups to avoid affecting the participants' responses and the researchers' understanding of the phenomena. Data collectors (the moderator and the PI) held a debriefing session after each FGD to review the key findings and emergent themes.

As for in-depth interviews, mothers who were encountered in-person were interviewed at a suitable time in a private and convenient location at the school premises. The interview took approximately 20 to 30 minutes. As for the interviews that were conducted remotely, mothers were interviewed through a phone call at a suitable time in a room where participants felt most comfortable. The time to conduct the phone call interview was adjusted to 15 to 20 minutes to minimize unwanted burden on mothers. Every in-depth interview was facilitated by the trained graduate student who followed the semi-structured interview guide developed to moderate the discussion and to encourage every mother to voice her opinion. The interviewer (the graduate student) first introduced herself and re-emphasized that the discussion will be audio-taped.

Participants gave permission to record and use their anonymous quotes in research publications. The interviewer also asked them if they have any questions before the start of the discussion and proceeded with the interview following the interview guide for mothers (Appendix VI). The interviews were conducted in Arabic or English, depending on the participating mother's preference.

The total number of FGDs and in-depth interviews were determined by the degree of data saturation; until no new themes emerged during the discussions. Thematic saturation was reached after a total of five FGDs (3 FGDs with 15 girls and 2 FGDs with 9 boys), and eight interviews with mothers were completed. However, an additional FGD with boys were conducted to balance the total number of girls and boys across the 3 schools study.

As a thank you for participating in the interview, each mother was provided with a booklet of age- and culturally- appropriate healthy living tips for their children. These booklets included nutrition tips and helpful information on how to best promote healthy eating and active living for school-aged children (Appendix VII). Food and refreshments (e.g., healthy snacks and drinks) were offered for all participants during the in-person FGDs. Participating mothers and children did not receive any monetary incentive.

E. Data Analysis

The analysis was conducted using the thematic inductive analytical approach to gather and analyze the data (Braun & Clarke, 2006). The first analytical step was transcribing the audiotapes of all FGDs and in-depth interviews verbatim and organizing them into separate datasets for children and mothers. Participant names have

been replaced by fictitious names, illustrating if it is a boy (B), a girl (G), or a mother (M) and by indicating whether they are from public (PU) or private (PR) schools. The analysis was supported by contextualizing and integrating the responses that included verbal and nonverbal communication. The thematic analysis consisted of different steps proposed by Braun and Clarke (2006); which include becoming familiar with the data, generating initial codes, creating, reviewing and defining themes and sub-themes, and writing the findings.

In the first phase, the graduate student was immersed in the data by reading and re-reading each transcript to become familiar with the information provided and jot down early impressions. As the research team continued to revise, a single researcher coded each quote recorded from children's FGDs and mothers' interviews separately, to compare them and identify overarching themes for each group. Then, these codes were grouped to those with similar content to generate initial codes. In addition, the code sets of mother-child responses were examined to identify similarities and discrepancies in relation to children's eating and physical activity routines and their attempts to improve their diet and increase physical activity. Once the codebook was generated, sub-themes were extracted and categorized to form overarching themes that represented the main messages conveyed by the data. Through continuous discussions among the study team members, the subthemes were refined and finalized to identify the final list of themes for mothers and children separately, as well as key areas of inconsistency between children's and mothers' reporting. After developing the initial themes and subthemes, they were continually reviewed and discarded through an iterative process. Thus, the research team moved back and forth steadily between the entire dataset to check if the themes accounted for all the coded extracts to assess themes' applicability. Within each

theme, similarities and differences between children's and mothers' codes were then sorted and compared to each other, and thereafter arranged into initial categories. The initial categories were discussed, revised, and encoded into final categories. The research team moved between the empirical data and the literature to identify adequate concepts and theories that would help us acquire a deeper understanding and better interpret the results. As the analysis progressed, transcripts were then reviewed again to support these findings with relevant quotes for each theme and sub-theme. The process of transferring quotes was dependent on how each citation added to the explanatory power of the related items. Once completed, they were reexamined to assess how well the quotes fitted together within each category. The quotes used were then translated into English. No software was used in the data analysis. Finally, a complete narrative of the findings was provided. A thematic map presented in **Figure 1** was also established to show the organization of themes according to different levels and possible interactions between ideas.

F. Increasing Rigor

Every attempt was made to maintain transparency, credibility, and reflexivity at each stage of the research. In the pre-data collection stage, both the moderator and the PI experienced bracketing, outlining their positions and personal assumptions before the interviews and focus group discussions.

During data collection, the data collector avoided any undue influence on the participants, and the research team discussed participants' transparencies, preliminary emerging themes, and whether participants were influenced by the moderator. During

data analysis, frequent research team meetings were conducted to compare and contrast emerging themes, putting primacy to the collected data.

Finally, during the data analysis phase, transcribed audio-recorded FGDs and interviews represented the main data repository supported by the interviewer's mental notes to ensure credibility. To ensure transparency and reliability, all coded transcripts were reviewed by two researchers to identify recurrent themes across participants to minimize the subjectivity and establish validity. Regular meetings with the research team were conducted throughout the analytical phases to discuss any outstanding questions.

G. Ethical Considerations

Ethical considerations were integrated throughout the research process. Informed consent and assent of study participants (mothers and children, respectively) were voluntarily given, without manipulation, undue influence, or coercion. The participants' names were only collected for the purpose of the discussions to ensure informality and openness among researchers and participants. All identifiers (names and contact details) of participants were not included in the transcriptions or the data analysis phase. The informed consent and assent of this study only included codes to link the data for children and their mothers. The link between identifiers used on these documents was kept in a separate sheet that was saved on a password-protected computer with access available only to the investigators. That sheet was the only document that could link the participant's identifiers (name and contact details) with the assigned ID number (code). Opinions shared during the discussions were kept

confidential and were presented without identifiers. Phone numbers were destroyed after the completion of data collection.

Hard and/or soft copies of the written consent and assent forms were given to participating mothers and their children, in which the contact information of the PI and the IRB committee were present in case they have any queries, comments, or concerns. The signed consents and assents were kept safely in locked cabinets in the PI's research unit. Soft copies of the online consent forms were saved on the graduate student and PI's password-protected computer. Electronic data were also saved on the password-protected computer to ensure that only the investigators can have access to the information. The audio-recordings from the FGDs and interviews were kept on the password-protected PC of the PI research unit. The recordings were destroyed by the PI when all the information was fully transcribed and translated.

The graduate student completed the Social and Behavioral Responsible Conduct of Research and Basic Refresher courses before starting the data collection. The graduate student has also been well trained on how to conduct FGDs and in-depth interviews as part of her academic training within the Public Health Nutrition program. These courses and training included how to properly administer the FGDs and interviews, address potentially sensitive questions, and ensure the comfort, respect, and confidentiality of the study participants.

The in-person FGDs and interviews were held in a private and convenient place within the school premises. As for the distant FGDs and interviews, the interviewer ensured that participants were placed in a private and comfortable place that suits them to ensure their privacy and comfort. Furthermore, it was clearly communicated to participating children and mothers at the beginning of the FGDs and interviews, that

both have the right to refuse to answer any question or to withdraw from the discussions at any point, which will involve no penalty to them or loss of benefits on children's grades or academic year and will not affect participants' future relationship with the school or with AUB or AUB Medical Center in any possible way.

CHAPTER III

RESULTS

A. Sample Characteristics

A total of 27 children and 11 mothers participated in the focus groups and interviews, respectively. Almost 67% of children participants were from the public school and 33.3% were from private schools. Almost 59.3% ($n = 16$) of the children's sample was girls, with an average age of 10.56 ± 0.6 years. As for mothers, 27.3% ($n = 3$) and 72.7% ($n = 8$) were from the public and private schools, accordingly. The research team concluded thematic saturation after a total of five FGDs (3 FGDs with 15 girls and 2 FGDs with 9 boys), and eight interviews with mothers were completed, and conducted an additional FGD with boys to balance the total number of girls and boys across the 3 schools. The sample drawn for and the characteristics of the focus groups and interviews are shown in **Table 1**.

Table 1. Sample and characteristics of the focus group discussions and in-depth interviews

	Total Sample	Public School	Private Schools
Children (n = 27)			
No. of FGDs	6	3	3
No. of Children	27 (100.0)	18 (66.7%)	9 (33.3%)
No. of Children per FGD	27 (100.0)	6	2-5
Gender			
Boys	11 (40.7%)	6 (22.2%)	5 (18.5%)
Girls	16 (59.3%)	12 (44.4%)	4 (14.8%)
Age (years)	10.56 ± 0.6	10.39 ± 0.6	10.89 ± 0.6
Mothers (n = 11)			
No. of interviews	11 (100.0)	3 (27.3%)	8 (72.7%)

Qualitative data analysis of the FGDs and in-depth interviews conducted revealed four themes regarding children's and mothers' perspectives and experiences on children's healthy eating with eleven subthemes. Similarly, four themes were identified for physical activity with nine sub-themes. Broadly, the four main themes within each section discuss i) perceptions of healthy eating behavior and physical activity, and their impact on children's wellbeing, ii) determinants of eating and physical activity, iii) school and sports environment, and iv) suggestions to encourage healthy eating and physical activity among children. The following sections present narrative descriptions of the themes and subthemes that emerged for each of the topics on healthy eating and physical activity sections, consequently. Examples of informative quotes in support of our results are shown in the result section and the remaining examples of quotes are presented in Appendices VIII and IX. **Figure 1** presents a thematic map that shows the organization of themes and subthemes.

B. Parental and Children Perceptions and Experiences towards Healthy Eating

1. Theme I. Perceptions of Healthy Eating Behavior and its Impact on Children's Wellbeing

Children and mother participants had differing perceptions of the meaning of healthy eating and its impact on their lives.

a. Perceived Meaning of Healthy Eating

Children's and mothers' perceptions of healthy eating were based on food types and nutrients. Most of the children defined healthy eating by identifying foods or food groups perceived as healthy, such as fruits, vegetables, chicken, and meats.

“For me, healthy meals are like fruits, vegetables, and salads” (B, PR, FGD-3).

“Eating meats is healthy” (G, PU, FGD-2).

For one girl, healthy foods were associated with the color of the food itself, such as “healthy food like red beetroot” (G, PU, FGD-1). Other children perceived healthy eating as an integral part of their usual eating habits rather than eating specific food groups or portion sizes.

“So to me healthy eating just means the way I usually eat, by not counting how much potatoes or stuff like that, so healthy eating means how I normally eat...if that makes sense” (G, PR, FGD-1).

However, some children from the public school perceived healthy eating, such as consuming vegetables as boring, which discouraged them from eating healthfully.

“I used to eat veggies every day but then I got disgusted and bored of eating greens” (G, PU, FGD-1).

“I mean, repetition like eating green makes you upset and makes you feel like you want to eat anything else...you get bored” (B, PU, FGD-3).

While mothers perceived healthy eating as the products which children often associated with a healthy diet, such as fruits, vegetables, meats, and chicken, they also identified Lebanese traditional meals and stew (i.e., a stew of meat and/or vegetables served with pasta, rice, or potatoes), as healthy.

“Healthy eating for me is that he [my son] eats Lebanese stew made at home and also eating vegetables and fruits, so that's healthy eating” (M-2, PR).

Moreover, almost all the mothers mainly perceived healthy eating based on nutrients; they noted the importance of foods low in sugar and fats as part of their definition of healthy eating.

“They [my children] know... I tell them that healthy eating does not contain a lot of sugar and fats in it and that it's not fried” (M-2, PU).

b. Impact of Healthy Eating on Children's Lives

Children were aware of the health benefits of healthy eating. They discussed the health consequences of healthy eating, such as its importance for their growth and organs, as a source of energy, vitamins, and minerals, and make them feel satisfied.

“If we don't eat healthily, we will have tooth decay” (G, PU, FGD-2).

“I keep on rushing myself, I don't like sitting down, I like to move and when I don't eat something healthier I just feel like I want to lay down or I just don't want to go to someplace...well nobody knows why, but I am always tired...so when I eat fruits and vegetables it makes me more energetic” (G, PR, FGD-1).

“Healthy eating gives us calcium and iron” (B, PR, FGD-3).

Overall, children reported positive knowledge towards the consequences of healthy eating, with some participants associating healthy eating with a positive body image, such as losing weight and being fit for girls, and having muscles and being strong for boys.

“Watching how a lot of my friends don’t eat very healthy and I am more fit than them, not speaking about anyone but you can say I am more fit than them because I don’t eat a lot of unhealthy foods” (G, PR, FGD-1).

“When we eat healthy, we will become stronger and our muscles will grow” (B, PU, FGD-3).

Mothers echoed their children's knowledge about the effect of healthy eating, nonetheless, they emphasized the importance of eating healthfully to prevent short- and long- term health consequences and diseases, such as obesity and diabetes.

“Healthy eating reduces the risk of diabetes because I've done for him [my boy] a health screening and I am always following upon them” (M-5, PR).

c. Disconnection between Children's Healthy Eating Knowledge and Attitudes

Children easily identified that healthy eating behaviors promote good health. Yet, some children did not perceive or sense the importance of those benefits on themselves.

“Last year, my friend used to bring chips and apples with him, he used to eat the chips and throw the apple. I told him that he should eat the apple since it gives him energy, but he told me that the apple does not give him anything” (B, PU, FGD-3).

“I don’t see that there are positive effects of healthy eating and it does not have an effect on me” (G, PU, FGD-2).

2. Theme II. Determinants of Healthy Eating

Children shared numerous insights into how a multitude of factors may influence their food choices and eating behaviors. These influences are related to the individual, social network, availability and affordability of foods, and food advertisements.

a. Individual Determinants

i. Preference and Food Characteristics Matter!

Children expressed how their foods preferences and sensory characteristics guided their food choices. They perceived meals that are/or contain foods that they themselves defined as healthy, such as fruits and vegetables, unpleasant to them.

“If there is a meal that is made from something healthy like broccoli, we might not like it” (G, PU, FGD-1).

Furthermore, children described how the sensory characteristics of foods greatly influenced their preferences and choices, sometimes more than their knowledge of their health benefits. Children discussed food’s taste, flavor, smell, and shape and presentation as important factors influencing their food choice decisions. For example, some children perceived healthy foods to have unpleasant, citrus, and bitter tastes, thus making them less favorable for them to consume. While other children opted for foods that they defined as unhealthy, such as cakes and foods found at restaurants, as they are sweeter and taste better.

“There is a citrus taste inside some healthy foods, which I don’t like” (G, PU, FGD-2).

“Sometimes the taste...there are some vegetables, especially those that are beneficial for us, that doesn’t taste good” (B, PU, FGD-3).

“Restaurants have so many good foods as compared to those at home because they contain sugars” (B, PR, FGD-2).

“I prefer biscuits and cakes because they contain more sugar” (G, PU, FGD-2).

“While my mom is cooking, the smell of the food is really appealing” (G, PU, FGD-1).

Some children reported that healthy foods were not attractive for them to consume.

“When it [healthy foods] does not look good or when it looks bad, it’s no longer appealing to us to eat” (B, PU, FGD-3).

“For example, some fruits that look soft make us think that they are not tasty”(G, PU, FGD-1).

While children framed their food choices by describing how the sensory characteristics of foods greatly influenced their preferences and choices, mothers tended to talk about their children's food preferences in terms of what they like and dislike without mentioning the reasoning behind that.

“If he [my son] doesn’t like the meal, he wouldn’t eat it even if the meal is healthy...if he doesn’t like the meal, he wouldn’t even try it” (M-1, PU).

“Sometimes there are some healthy foods that they [my children] don’t like. I try to convince my children to eat those foods but it doesn’t really work, that’s because there are some types of vegetables, for example, that they don’t like, they simply don’t feel like eating them” (M-4, PR).

ii. Is it Boredom or Hunger?

Children who were interviewed after COVID-19 lockdown measures and after the Beirut explosion (4 August 2020), were not always influenced by their sense of hunger when choosing when and what to eat, rather, they expressed eating sometimes out of boredom. Children particularly talked about how they tended to overeat when they were feeling bored, anxious, or during their online classes. In contrast, the same participants mentioned that doing something they love like going to the mountains, gardening and feeding animals, or watching TV prevented overeating.

“When the COVID-19, I started eating a lot more than I used to, because like I started going back and forth to the kitchen just because I was bored, like eating would make me less bored for some reasons...so I started eating and eating” (G, PR, FGD-1).

“Because I went to the mountains after the explosion, I really didn’t feel like hunger ...I didn’t feel like I want to eat” (G, PR, FGD-1).

“I usually wake up early in the morning, so here in the mountains I can go to the farm and have fun, so I feel like time flies, and I don’t feel like I am hungry, like when I have nothing to do” (B, PR, FGD-2).

This was re-iterated by mothers who were also interviewed at that time.

“Honestly, sometimes I feel that activities make their [children] day full and reduce overeating. When he [my son] tells me that he wants to eat and I am like...why? you just ate now...he replies that he has nothing to do. It’s like they [children] seek foods when their schedule is empty” (M-5, PR).

“Now, we are back to online courses, so during the school’s break, he [my son] gets the chance to play, have fun, or watch TV. Of course, he will get busy with playing and forget about eating” (M-6, PR).

iii. Rewards for Eating Healthy

Incentives or rewards were used by almost all children and public school's mothers to achieve behavioral change. Some children reported rewarding themselves for eating healthy. Food treats (e.g., sweets, fast foods, or eating out in fast food outlets) were the most common rewards reported for good eating behavior by children and public school's mothers. Other incentives included money, going out, or doing an enjoyable activity, which was reported by children from the public school.

“When we eat healthy for a long period, we reward ourselves by eating a chocolate” (G, PU, FGD-2).

“When we eat healthy, our fathers give us money” (G, PU, FGD-1).

“When I eat foods that are healthy all week, my family and I would have lunch outside during the weekend and eat desserts afterward...we really enjoy it!” (B, PR, FGD-2).

“Sometimes my parents like to reward me with other stuff like unhealthy food like, on Saturdays, unhealthy lunch let's say, we go to the park or something. Like they don't do this always, they love us and they like the best parent ever, but like when you are going to this place because you did this, you feel like it's a reward” (G, PR, FGD-1).

“We usually tell him [my son] that if he eat all his meal, we will buy for him an ice-cream. This way we encourage him to eat and try new foods. Even in school, when he was disciplined for a long time, I rewarded him with a gift” (M-1, PU).

Though mother and children from the public school expressed positive attitudes towards incentives, the majority of mothers of children from private schools countered this idea by stating that their children do not reward themselves or get compensations for eating healthy. In fact, the same mothers of children enrolled in private schools appeared to worry about the negative influence of using food as a reward. Instead,

mothers reported that their children became pleased with themselves about their good eating achievement.

“We try to avoid rewarding our kids for doing things that should do for themselves and for their own health, you know I mean like she [my daughter] has any reward for doing the right things if that makes sense. So what we are going to teach her is that if you eat healthy you have a strong body, if you eat healthy you don’t get sick as much, if you eat healthy these kinds of intrinsic rewards or the things we are trying to build in her mind are going to last longer” (M-1, PR).

“She [my daughter] doesn’t reward herself for eating healthy and we don’t tell her that if you eat salads for example you get something in return” (M-2, PR).

“He [my son] keeps talking about his achievement all day, that he ate something healthy. For example, he once ate a meal and when I told him that this is healthy, he didn’t stop talking about this achievement all day” (M-8, PR).

vi. Perceived Ability to Eat Healthier

When participants were asked about children’s ability to eat healthier, children felt they would not succeed in eating healthily and associated this inability with their lack of self-confidence or self-control over unhealthy foods.

“I don’t feel like I can always eat healthy because I could not resist unhealthy foods” (G, PU, FGD-1).

“I am not sure how confident I am to eat healthily...the other types of food [unhealthy] are appealing to me!” (G, PU, FGD-2).

Some children indicated that they are or would be capable of eating healthily if they set it as their goal or put in enough effort to achieve it.

“I think I can reach the goal of healthy eating because when I usually choose a goal in my life, I work for it to achieve it, even if it makes me tired” (B, PU, FGD-3).

“Sometimes I convince myself that I just don’t want to eat healthy...sometimes I am never going to eat healthy.. because most of the healthy food I don’t like. So like I only think about the food I don’t like. I tell myself things negatively which I have to stop. I have to say to myself that I like this healthy food like I have to eat it, not like oh I don’t like this healthy food. Otherwise, I am never going to eat healthy foods” (G, PR, FGD-1).

Nonetheless, mothers were certain that their children were able to follow a healthy lifestyle and expressed confidence in their children’s ability to eat healthily.

“He [my son] can surely eat healthy foods. If he wants to eat healthier he can” (M-1, PU).

“When we say we will have healthy food for tomorrow, she [my daughter] wakes up and has corn flex for breakfast. I mean that she prefers to eat milk and corn flex instead of eating a sandwich” (M-2, PR).

“Her [my daughter] personally is a rule follower. So she is 100% able to eat healthy, she buys at school what she knows she should so she doesn’t spend it on chocolate or candies or anything like that so I think she is 100% capable to eat healthy” (M-1, PR).

b. Social Determinants

i. Parental and Family Influence

During both, the FGDs and interviews, children and mothers shared their experiences on how parents and family members play an important role in shaping children's eating habits. Children and mothers agreed that parents and family members can support children to adopt healthy eating habits. They described how parents, siblings, and family members attempted to structure children’s eating choices by

encouraging them verbally, eating healthily in front of them, having regular family mealtime, and providing healthy snacks.

“My sister, my brother, and I eat fruit salads all together” (B, PU, FGD-3).

“The thing that is here right now is my grandparents encourage me to eat healthy food and they bring healthy food in the house so I can eat it. So when I was in the mountains in the summer, my grandma always gave me a banana, like every two hours, she goes like you have to eat this, you have to eat this, and I started liking it more and I started having a habit of eating a banana and asking for bananas. So well people that encouraged me are my parents and my grandma” (G, PR, FGD-1).

“My mom, dad, and bigger sister always encourage me to eat healthily. Last time, my mom followed the same diet that I am following to motivate me” (B, PR, FGD-3).

“Our mothers always give us fruits like apples, bananas, and strawberries to school” (B, PR, FGD-3).

“He [my son] needs support. If he saw his sister eating foods that he doesn’t like, he starts to think about it and end up trying these foods” (M-1, PU).

“If he [my son] wants to eat something healthy, I encourage him and he starts eating it regularly” (M-3, PU).

Also, some mothers shared more details about how they have helped their children to eat healthier. These included setting rules around healthy eating, being a good role model for their children (e.g., take nutrition course, eating healthy, following the same diet as their children) and using fun and engaging strategies during food preparation and mealtimes.

“I should drive them [my children] to eat healthily...when I used to prepare a salad and grilled foods for myself, they used to tell me that they want to eat the same. So the idea is that I should start eating healthy for them to do so” (M-8, PR).

“I always try to eat healthily and focus on everything related to healthy. I am even enrolled in an online course related to nutrition so when they know that and notice that I always bring healthy foods, they start doing the same. One of my girls always tell me that I want to eat healthy like you” (M-4, PR).

“From my personal experience, getting the kids involved is important. So my girl is making all her food now so she knows she has to have a sandwich and then a vegetables and then a fruit and a snack so having options for her and letting her know what the choices are I think can encourage her to enjoy her snack at school more because she chose it” (M-1, PR).

While parents and family were described by most children as facilitators for healthy eating, few children reported that some family members, specifically when it comes to siblings and younger family members (e.g., sister, brother, cousins), may have an adverse influence on their eating behaviors. Children mentioned how their siblings and/or family members may either eat or offer unhealthy foods and sometimes family members criticized the children’s intake of healthy foods.

“When we are eating healthy food, my sister or my brother starts eating chocolate so they don't let me eat the healthy food that I was eating” (G, PU, FGD-1).

“My cousins start telling me...why are you eating these things [healthy foods]...when they see me eating healthy” (G, PR, FGD-1).

“Sometimes, my brother brings with him chips. I love apples but when he brings chips, I found myself eating chips” (B, PU, FGD-3)

“My younger sister and my brother don’t encourage me at all. They always tell me to come and eat with them instead of following the diet” (B, PR, FGD-3).

Only a couple of mothers echoed their children’s concerns about the negative influence of parents and family members on their eating habits. These mothers talked

about how fathers were more concerned about the difficulties of setting a good example for their children and how family members' food choices affect those of their children.

“My husband for example doesn't love Lebanese stew, so I have to prepare fried foods from time to time. He also loves chocolate...I am not blaming him” (M-3, PR).

“He [my son] finds difficulties eating specific healthy foods that other people are not eating. What affects his eating habits is when he's on a diet and notice some children in our family eating foods that they are not supposed to eat. For example, he saw his cousin eating jelly beans last time and felt like eating these foods” (M-8, PR).

ii. Peer Influence

Almost all the children discussed their experiences on how their peers shape their food choices. The influence of peers on their eating habits was mostly considered as negative, because friends tend to consume fast foods when together. For some children, observations of their peers' eating behaviors was a source of frustration and cause for discouragement; they reported increasingly consuming less healthy food choices when watching their peers do so.

“When I see someone biting into a candy bar or anything like chocolate or these kinds of things, it makes me think like, why I don't get unhealthy food?” (G, PR, FGD-1)

“My friend brings unhealthy foods that I used to eat. Of course, I still like them, but when he does so, he reminds me of them again and I wouldn't want to continue my diet” (B, PU, FGD-3).

Furthermore, children from the public school only talked about how their eating choices are affected when they are surrounded by friends who have increased access to

money and freedom to purchase sweets and snack foods. Stigma was also cited as a problem amongst girls from the public school. Some girls affirmed being teased for making healthy choices. These girls appeared to be afraid of what others might think if they ate healthily, such as embarrassment.

“It makes me frustrated when my friends have money and go buy foods from the school canteen. It makes me want to buy the same” (G, PU, FGD-3).

“If your friend see you eating at school a homemade sandwich, he or she goes like, why are you eating the sandwich? Come and buy with us anything else from the school canteen...”(G, PU, FGD-1).

“My friends start laughing on me when they see me eating something healthy” (G, PU, FGD-2).

Mothers did not discuss peer pressure as a major barrier to their children’s healthy lifestyle. In fact, only one mother perceived the influence of parents and family members on her children’s eating habits to be more powerful as compared to peer influence. Whereas, children expressed their opinion towards both family's and friends' influence as these social groups become equally important at this age.

“They [my children] don’t interact with their friends as much as they interact with their family members, so I don’t think their eating habits are influenced by their friends” (M-1, PU).

c. Availability and Affordability of Foods

The availability and affordability of foods appeared to shape children’s food choices. Children indicated that the availability of healthy foods at home influenced their eating patterns because they eat what is available to them. Other children,

especially those from the public school, reported that having healthy foods readily available in places where they spent most of their time (i.e., home and school) would make it easier for them to choose healthier options.

“So it's easy to give up on ice-cream not because I don't love ice-cream, but I think its partially because we don't eat a lot of unhealthy foods in or house, and we don't have unhealthy food every day” (G, PR, FGD-1).

“If fruits were available around us, like in the fridge or at school, healthy eating would have been easier for us” (G, PU, FGD-1).

“I love apples and bananas. I would have eaten more apples and bananas if they were available at home or school” (B, PU, FGD-3).

Some mothers confirmed that food availability plays an important role in their children's food choices. They emphasized the importance of keeping healthy foods available at home.

“It is what foods are available...in our home, in her lunchbox, that's what she [my daughter] has...so in general, when we sit down together to eat for dinner or lunch, this is what we have...it is not like I don't like this or I want to have something unhealthy instead...so she doesn't have a choice, this is what is available. When she needs a snack, she is going to come to the kitchen but what she is going to find are fruits and vegetables and crackers, you know, yogurt and these kinds of things. So even in school, she takes her food with her, she doesn't buy foods at school maybe once every few weeks” (M-1, PR).

“Children started eating all the time, so I am trying to eliminate unhealthy foods from home and bring only healthy foods” (M-7, PR).

Furthermore, some children and mothers from public and private schools revealed that price was an important aspect of their food choices. They perceived cost as

a major barrier to healthy eating when purchasing foods, as they described healthy foods being more expensive.

“I think the other thing is that chocolate and chips are cheaper than healthy food like you can find a healthy granola bar and an unhealthy granola bar and the unhealthy bar is much cheaper than the healthy one. So my sister and I have basketball like an hour and a half between each other, and we can't go home and come back. So we go out and we do some shopping as my sister wants to snack and play. I then found some chips that are 1,000 LBP and then some cheese sticks that were 3,000 LBP!” (G, PR, FGD-1).

“Fruits are really expensive, it's like you want a gift that is expensive but your dad cannot buy it for you” (G, PU, FGD-1).

“In general, healthy foods I find in Lebanon are more expensive. Yes prices...but that's not on her really that's all on me. But it makes it harder for her to eat healthy because healthy options are more expensive...like even simple things like white flower versus brown flower...or you know I can buy white sugar or honey? I think honestly the cost is an obstacle” (M-1, PR).

“We cannot deny that healthy foods are expensive and this also affects our choices” (M-1, PU).

d. Food Advertisements

Children and some mothers emphasized that food advertisements on television and social media platforms (e.g., YouTube, Ticktock) have a large impact on children's eating habits. On one hand, children stated food advertisements increased the craving for unhealthy foods.

“The videos that are mostly shared, such as those on YouTube, show us new foods, foods that we usually don't see. This increases our cravings and we start eating foods from outside” (G, PU, FGD-2).

“When my father and I have a healthy dinner at night while watching TV, we always get junk food advertisements and I start thinking about these foods, like burgers or crispy” (B, PR, FGD-2).

“And when they put on the television foods advertisement or ads, we get hungry and crave for that food” (B, PU, FGD-3).

On the other hand, some mothers thought that food advertisements don't affect their children's food choices.

“Food advertisement does not really affect her [my daughter] eating habits” (M-2, PU).

Yet, other mothers resonated with their children's concerns about food advertisements and postulated that these advertisements include attractive marketing and advertising strategies that make foods look more appealing, and thus increases craving for unhealthy foods. Also, they stated that these unhealthy messages conveyed through television and media advertising were counteracting healthy messages and practices children learn.

“Before anything else, food advertisements on social media is critical! First of all, everything displayed is unhealthy. Secondly, food advertisements cross our eyes all the time during the evening while watching TV, and of course, children are always there. Most of these ads include chips or fried food or ice cream. For example, if they see any food on the TV such as chocolate they come to the kitchen and start searching for this food and if found, they would directly eat it. Or they keep asking me to go out and eat burgers” (M-4, PR).

3. *Theme III. School Environment*

a. School Lunch and Cafeteria

Children viewed the cafeteria's food and physical dimensions as key factors influencing their consumption.

On one hand, children from the public school stated that they hardly ever ate from the school cafeteria because out-of-home foods were generally perceived as unsafe, as their ingredients and preparation methods were unknown. This could explain why some children preferred to bring homemade foods to school and why others opted for pre-packaged foods (e.g., croissants) since they look safer for them.

“When I need to buy foods from the school cafeteria, my mom always advises me to bring my foods from home instead because we don't know what ingredients they contain” (B, PU, FGD-3).

“Foods in the school cafeteria are always non-packaged...they are always exposed to the outside air, which might be polluted” (G, PU, FGD-2).

“I always buy a croissant from the school cafeteria because these kinds of foods are always packaged and wrapped well” (G, PU, FGD-1).

On the other hand, nearly all students viewed their school cafeterias, canteen, or kiosk as barriers to a healthy intake. The school canteen was considered a major barrier to eating due to the availability of many unhealthy options, such as chocolate and concentrated fruit juices, and not enough healthier choices available.

“There are no cheese-made sandwiches in our school canteen or at least those healthy foods that I love” (G, PU, FGD-1).

“The school cafeteria sells ‘manakish’ , like cheese or zaatar [dough bread with thyme or cheese], but only in the morning, and in the afternoon they only sell salted pretzels, chocolate, and juice. And the only time you can get healthy foods is in the first recess then you will have to bring your own foods” (G, PR, FGD-1).

“In our school, there is a small shop which we can buy from. Here, there are a lot of unhealthy foods always placed in fronts of us such as croissants and chocolate. It makes me want to eat these kinds of foods, of course when I have money in my pocket” (B, PR, FGD-2).

Mothers from private schools confirmed children's views on the dominance of unhealthy foods in the school cafeteria, canteen, or kiosk.

“The school cafeteria encouraged my son to eat unhealthily. The food available there are unhealthy like bakeries and ‘manakish’” (M-8, PR).

However, mothers from the public school did not see the school environment as a barrier to their children’s consumption. Rather, they wondered why their children choose not to bring healthy foods with them to school, like fruits and homemade sandwiches, or prefer to buy available snacks from the school canteen.

“They [my children] do not allow me to give them fruits in their lunchbox. My son tells me that the quality of fruits doesn't stay good or that he does not like apples. You know he gives also excuses like he doesn't have the time to eat them in school because he needs to play with his friends” (M-3, PU).

“In general, they [children] do not accept to bring homemade sandwiches with them to school. I don't know what's the problem there...I wish I can attend a school recess somebody to discover the reason behind that” (M-1, PU).

b. Teachers as Role Models

While the school cafeteria’s foods and physical dimensions were seen as accountable for the promotion of a healthy diet, some children highlighted the importance of schoolteachers in raising consciousness and modeling healthy behaviors. Teachers were cited as a common source of information on nutrition thus encouraging them to follow a healthy eating pattern.

“We get encouraged to eat healthier when our schoolteacher advises us to eat healthy foods to grow up” (G, PU, FGD-2).

Furthermore, one child recognized the important role of teachers to model healthy lifestyles rather than merely to encourage children to consume healthier diets.

“My teacher used to remind me that I should not eat junk foods to stay healthy, but he always orders junk foods. So sometimes, I feel like I want to remind him that he's teaching us what we have to eat, but he's doing the opposite” (B, PR, FGD-3).

Some mothers from private schools believed that children have not the opportunity to internalize messages about eating healthily in school. They postulated that the messages raised by teachers about healthy eating were inconsistent with the food available at the school; they reported that many foods that children are taught to recognize as unhealthy are actually available at the school canteen, which confused children.

“The school is trying to do programs and talk about healthy foods but when you look at what the teacher is saying and versus what they are able to buy at school it is just a total mismatch. So in school, they have like a small shop, full of chocolate and chips and candy bars and junk foods really! So if the teacher in the school is explaining that they should eat healthily and that they shouldn't eat chocolate or chips in their lunch, but then you go downstairs to the shop, that's all that you can buy. Mixed messages are being sent to them, so our kids are smart and they are knowing what you are saying but your acting completely different, they are going to watch how you are acting not the words coming out of your mouth so I think something would be attractive to kids of their age is consistent; messages that are consistent. We say that you shouldn't have chocolate and you have bars or snickers but consistent messages I think they really pick up on that. They understand if someone is being critical or when someone is saying just something they have to say, and I think kids of this age are really impressed

by someone who says this and they do this and they like that. I think it is really powerful for them” (M-1, PR).

“The teacher of the nutrition class advises children to choose healthy options. But when they pass by the cafeteria, they don't have any option” (M-2, PR).

4. Theme IV. Suggestions to Encourage Healthy Eating among Children

A common theme emerged where students and mothers provided very concrete suggestions for encouraging good eating habits amongst children. These suggestions include strategies at children's individual and family level as well as school-based approaches to healthy eating promotion.

a. Individual- and Family- Based Strategies

A unique theme raised by children was the importance of individual- and family-based strategies to encourage good eating behaviors among children. Most children shared several ideas that could be adopted at the individual level. Some children mentioned having a continuous 'reminder' (e.g., alarm, application/robot, enjoyable food checklist) that would always notify them to eat healthy and convince them why they should adopt a healthy lifestyle.

“I wish there was something that convinces me why healthy eating is beneficial to me and what would I get if I eat healthy foods and avoid unhealthy ones” (B, PR, FGD-2).

“A robot is a good idea...having an application/robot that always advises us to eat healthier, brings and encourage us to healthy foods, and closes the door of the kitchen” (B, PR, FGD-3).

“What would encourage me is to have a schedule for us printed on paper; let's say Monday you have to eat an apple, or Tuesday you have to eat like

broccoli or something healthy. And, every time you check something off, honestly not lying, you would get points. And, when you get to this number of points, you would get a bigger reward like, let's say, a day free of school, a day off or something. If you get this amount of points with your classmates or with your class or with your grade even" (G, PR, FGD-1).

Also, children perceived balance and variety as key aspects to be integrated into their lives; they suggested making meals and snacks healthier by switching to more nutritious ingredients without losing taste or mixing unhealthy foods they usually like with healthy options.

"Let's say I am drinking milk, so I pretty much eat Oreo with it sometimes, so you're enjoying it while still eating healthy, it's like picking a balance you know" (G, PR, FGD-1).

"One way for us to eat healthier is by replacing regular chips with a healthier version of chips, which is free form sugar, for example" (B, PR, FGD-2).

As for family level's strategies, some children also reported that continuous encouragement from parents is required to stick to their healthy journey.

"I wish that there is someone at home that would always encourage me to eat healthier...to tell me to eat at home when I want to eat in a restaurant, for example" (B, PU, FGD-3).

b. School-Based Strategies and Approaches

All children and mothers discussed ideas about how to design a program to improve healthy eating. Unanimously, children and mother participants identified the school community as a main site for encouraging healthy lifestyles.

School environmental changes were suggested by children including the provision of a variety of nutritious and affordable meals and snacks coupled with reducing unhealthy foods. Children proposed increasing the number and types of healthy options, keeping unhealthy foods less noticeable, and making healthy foods easily visible by placing them on the front shelves. It is also worth noting that the recounted imbalance of healthy foods in favor of unhealthy foods in school cafeterias may explain why most children's recommendations were to limit unhealthy foods rather than increase the availability of healthy foods. The aforementioned initiatives would encourage children to choose healthier options.

“I would have eaten more healthy foods if there were healthy foods instead of unhealthy foods” (G, PU, FGD-1)

“Bananas, apples, healthy and light sandwiches should be available in the school cafeteria. So we would buy from the school cafeteria a healthy lunch if these were present” (B, PU, FGD-3).

“The presence of dairy-like foods or sandwiches in the school cafeteria is not enough...the available chocolate snacks should also be reduced” (B, PU, FGD-3).

“Placing sweets snacks like chocolate on the back shelf and exposing healthy foods on the front such as carrots and cucumbers, would help us choose healthier options”(B, PR, FGD-2).

Also, some children recommended lowering the cost of healthy foods to help them make healthier purchases more often.

“I would have buy apples if they were for 500 Lebanese Lira” (B, PU, FGD-3).

Furthermore, some mentioned that it is difficult to eat healthy foods, like salads, because of the lack of an adequate number of tables and chairs for student meals. And, they advocated having a proper dining environment with sitting chairs and tables to facilitate eating healthy choices.

“I personally wish in our school, to have a cafeteria where there are places to sit and eat. Cause in our school we have only a playground and people can't sit there, it's not like a cafeteria, it's like a place we can buy stuff, play and eats, and there are just too many noises first of all. Second of all, if you're waking and eating somebody would be running or maybe your sandwich will fall or carriage will fall or something on the ground and then you can't eat it because your know the ground is dirty” (G, PR, FGD-1).

Children wanted to voice their opinion to shape the content of the program, notably when it comes to the types of meals and snacks that should be included.

“They should ask us, like what do we like to eat so there is more chance for us to eat more healthy foods” (G, PR, FGD-1).

“I suggest that the school would listen to children's opinion to know what they like to eat because children don't like to eat everything” (M-1, PU).

Mothers from private schools confirmed children's suggestions to facilitate healthy eating at school including reducing the availability of unhealthy snacks like chocolate, better availability of healthy foods, and the provision of vending machines that offer healthy options.

“I think within the school, having healthy foods available. I think you can talk that you should eat more fruits but then we are making it a heaven opportunity to buy something but what can they buy? Can they buy fruits? Do they have fruits available at school? I think it is systemic, it's more than just a program...this is what is going to change eating habits” (M-1, PR).

“What's important is that the school eliminate chocolate snacks because if they were asked to choose between a healthy and unhealthy item, they would surely choose chocolate for example. I personally think that chocolate should be banned in school. Chocolates shouldn't be an option. Because when children get hungry, they eat what's available for them” (M-3, PR).

“When I ask my girl what's available in the school's kiosk, she tells me that there are not healthy options. Last time, she was watching a report from Japan and she told me that in this country, there are vending machines in school in which healthy options are available such as bananas and that she wishes that such things would be available in her school as well. So yes, the school could provide healthier options like fruit salads instead of chips and chocolate” (M-4, PR).

Making food available and affordable is not enough. Certain mothers agreed that school canteens should provide healthy options in an appealing and easy-to-handle packaging. They also stated that rewards like additional points or gifts would encourage children to purchase healthier options.

“It would be nice if there were healthy food choices like carrots dipped in lemon wrapped in an easy and appealing package, where they can pull it off and eat it easily. And, maybe when they choose these foods and open them, they get some cool prizes” (M-7, PR)

“Every time I order a coffee from the coffee shop, I get a sticker. So these kinds of things can be done in school, for example, when children eat 10 salads, they would get something for free. They [children] love getting things for free like rewards or gadgets so I think this might help them eat healthier” (M-3, PR).

In addition to the suggested school environmental changes, children and mother participants believed schools have a considerable level of responsibility for endorsing good eating habits, through a combination of curricular sessions, partnering with parents, school-based approaches, and internet-based formats.

One suggestion that was common among mothers was that existing curricular sessions (e.g., healthy eating or nutrition education) could be used to promote healthy eating. It was generally seen as important to integrate nutrition education across the whole curriculum rather than have it as a stand-alone subject area. Mothers mentioned that access to nutrition information via the school curriculum is important to build a common culture about healthy eating amongst all students.

“The school should give fixed nutrition sessions for children, let's a 30-minute session during science or a separate session once a week. An example of a session could be how to prepare fast food like crispy at home instead of buying it from outside. Children learn from each other and like to copy each other so after these sessions, they would feel responsible that they can prepare their own lunchbox” (M-8, PR).

“Informing children about this topic is very important. I remember once my girl came home and told me that she has been taught in the school that soft drinks are unhealthy so she stopped drinking soft drinks for a month or so. So the school plays a key role in teaching them about healthy living” (M-3, PU).

“I suggest that the school integrates a course about healthy living, like any other math or science course. This course should be given to every student to incorporate a common mentality among children, so when they want to choose their own foods, they would all choose the same healthy options” (M-4, PR).

Although mothers valued the importance of providing nutrition education for their children at school, one mother highlighted that the school should also work in partnership with parents through supporting and reinforcing parental efforts about healthy nutrition to integrate healthy eating practices as a common pattern in every family.

“Of course, the school should educate children on healthy eating but they should also give sessions for parents. Because each home has its own food rules, for example, in our home children aren't allowed to eat sweets but when my children spend the day at their cousins' house, they do eat sweets. So sessions should target parents as well to keep all families on the same page” (M-3, PR).

School was also seen as a popular site through which children wanted to access nutrition information via, posters and leaflets, healthy eating activities and events, and presentations or plays conducted by children' peers of varying ages who eat healthfully (i.e., as role models).

Some children wanted to promote healthy eating messages around the school by putting up posters about healthy eating.

“We would like if the school posts facts about healthy eating” (G, PU, FGD-1).

“Seeing posters, leaflets, and advertisement about healthy eating on the school's walls would help us choose these foods” (B, PU, FGD-3).

Other suggestions for school-based approaches to healthy eating promotion included fun, interactive, and concise activities such as theaters, movies, games (e.g., involving children in their meals' and snacks' preparation process, cutting foods into shapes), and competitions.

“Learning healthy eating through theaters is a good idea” (G, PU, FGD-2).

“The program can do maybe a game out of it, cause nowadays people don't like to eat healthy foods, so a game or something would encourage us to eat those foods, like a game in which you will have to eat lettuce or cucumber or if there's a competition where you have to eat cucumber in less than a minute let's say” (G, PR, FGD-1).

“I think anything for their age, anything creative and fun not like you are teaching nutrition and just giving them lists. You know fun activities like tasting brownie but do you ever guess a good brownie has no sugar in it...just like this, get a feel that healthy is good and we can still enjoy the treats but in a healthy way. So anything that gets them engaged would be attractive to them” (M-1, PR).

“Some children don't like apples. I think they would start loving and eating them if they would chop them into different beautiful shapes” (G, PU, FGD-1).

“They love working with their own hands like when they prepare their own salad they get happy. When they prepare their own foods at school, they would come to the home and get excited about preparing the same food at home” (M-2, PU).

“They can organize a competition, during class time, let's say in science course, during sports or during any activity, where a nutritionist talks about healthy foods and teaches them how they prepare small healthy meals by themselves. Breakfast oats for example. Then, a competition can be done to see who is better at preparing these meals. Children love competitive games especially when they get rewards in return” (M-5, PR).

In addition, nearly all children and only one mother highlighted the importance of having school events as part of the healthy eating program. They particularly talked about food distributions, food sales, healthy party, and apple day. These participants also insisted that such activities should be organized often (e.g., weekly). Some also proposed that the revenue generated during these events can be used to bring some beneficial inspiration or incentives for children.

“I love if the school's bake sale events happen every time. It happens once a year for each class, but I wish if we can always do it like once every week or once every three days” (B, PR, FGD-2).

“Last year when we were in grade 5, some of the grade 6's students did an apple day and they started to sing one apple a day keep the doctor away and distributed apples for free” (B, PR, FGD-2).

“The school usually organizes bake sales but they don't occur frequently. So these events can happen routinely, they can be done on a weekly basis” (M-7, PR).

“The money of food distribution events would go to something like most kids would like, such as a slide or something out to put in the playground. Maybe that would make them feel more excited to eat because they are getting something in return, it's like a reward that's not bad for them” (G, PR, FGD-1).

Furthermore, children and mothers appreciated if presentations or plays would be conducted by children' peers of varying ages who eat healthfully to model a healthy lifestyle.

“The school could make like a nursery out of it and have kids memorize and learn why healthy food is good, and then you can have them teach it to younger kids without actually realizing it” (G, PR, FGD-1).

“I hope we can see someone eating healthy such as fruits and vegetables and observing how he or she is growing up and getting the nutrients” (B, PU, FGD-3).

“I think the school plays an important role so they might ask children to bring to school healthy ingredients, sit all together, and start preparing their own healthy plate. So if this idea occurs frequently like once every week, students would get motivated to eat healthier especially when they see their friends eating in this way because they will know that healthy eating is for everyone unconditionally; whether they were overweight or underweight” (M-8, PR).

Children and one mother also identified an ultimate range of formats through which they could access nutrition promotion messages. Children heavily favored electronic media and technology as one preferred mode for accessing information, get recipes advices, and watch online cooking demonstrations. These platforms include

YouTube as the most frequently mentioned, social media, and Applications (i.e., cobbler).

“There is something called cobbler, in which you can make a lot of different fruits. So like, for example, it has fruit in it and then you can go like apples and peanut butter or something else that already people like. I love peanut butter and that makes me so excited about apples. I tried apples and peanut butter and I think this is really good...like it would help us have a transition to get used to healthy foods. It's like in kindergarten, you go to kindergarten, you start simple and then the older you get the more stuff you learn. So you start with a chocolate bar then to peanut butter and apples. You would do something that a person likes in a healthy way or end up with small unhealthy” (G, PR, FGD-1).

“We can learn from YouTube you know...my sister always watch YouTube and these videos get us excited to do the same or prepare the same foods” (B, PU, FGD-3).

“Social media could help them in a good way sometimes. She [my daughter] is currently influenced by ticktock, I mean that she wants to try everything she watches on ticktock. I noticed that recently” (M-2, PR).

The following section presents a narrative description of the themes and subthemes that emerged for the topic of physical activity.

C. Parental and Children Perceptions and Experiences towards Physical Activity

1. Theme I. Perceptions of physical activity and its impact on children's wellbeing

a. Perceived Meaning of Physical Activity

When participants were asked about physical activity in general, a variety of lifestyle activities were reported by children and mothers, including organized sports,

spontaneous physical activity, and a preference towards other leisure activities.

Organized sports seemed to be an essential part of children's accumulated physical activity, as most of the participating children and mothers mentioned organized physical activity (e.g., football, basketball, swimming) when talking about sports.

"I like exercising, I play basketball, I used to play football, and I play a bit of tennis and volleyball" (G, PR, FGD-1).

"I love football" (B, PR, FGD-2).

"I think about Kong foo because I was enrolled in Kong foo classes" (B, PR, FGD-3).

"She [my daughter] does basketball and gymnastics, so she is getting an hour and a half to 2 hours every day and maybe one day or two off" (M-1, PR).

"She [my daughter] loves swimming because they [my children] were enrolled in a swimming academy" (M-3, PU).

Although most participants often highlighted organized sports, some children mentioned leisure activities (e.g., biking with friends) as common physical activity and perceived sports and play to be one in the same.

"I love biking with my friends, in this way we can have fun" (G, PU, FGD-2).

"Sports is having fun because I do have fun when I am playing basketball, it's not that I want to be professional, it's just that I want to have fun" (G, PR, FGD-1).

"I play ping pong with my friends, I have fun and enjoy it" (B, PR, FGD-2).

"I go and play football to have fun" (B, PR, FGD-3).

Nevertheless, engaging in other leisure activities such as chess, gardening and feeding animals, billiard, and reading were salient in some boys' and two mothers' discussions of physical activity, which highlighted children's varying preferences.

"I play Domo, an activity in school, and I also have this game at home. I also love playing billiard and baby foot" (B, PR, FGD-2).

"I love playing chess" (B, PR, FGD-2).

"If she [my daughter] is reading a book, she doesn't want to stop and do anything else. If she would choose anything, she would choose to sit and read a book" (M-1, PR).

b. Impact of Physical Activity on Children's Lives

Children perceived distinct physical, social, emotional, and cognitive benefits of physical activity. Physical benefits included getting a good body, getting stronger, getting more muscles, and getting energy.

"Your body will be much more better, and it's so good for your body" (G, PR, FGD-1)

"Sports get us stronger and make us excited" (B, PU, FGD-3).

The social benefits of physical activity were also evident, with one child stating "I feel like when I have my friends and having fun with them, I can talk to them I can do this with them" (G, private school). Children additionally discussed the emotional benefits of physical activity. In some focus groups, children reported that being active makes you feel excited, happy, get rid of stress, and establish a daily routine. Furthermore, one student shared that physical activity makes her study better.

“I feel like if I am shooting a basket or shooting a ball, I feel like it helps me get rid of any bad energy I have. It feels like I am doing something positive and I can get of my negative energy if I have any” (G, PR, FGD-1).

“It [physical activity], first of all, gives me a routine especially right now most kids need routine just to make them feel comfortable. And second, because I am filling my time I know that I am doing something positive and something that wouldn’t make me go down” (G, PR, FGD-1).

“I feel like it [physical activity] helps me study more because I’ve been doing sports for a long time and, I’ve been one of the best students in my class for a long time ever since I started to do some sport. But anyway I feel like it helps me study and work more” (G, PR, FGD-1).

Mothers echoed children’s perceptions about the positive impact of physical activity.

“The first idea that comes to my daughter's mind when talking about physical activity is being strong, being active, and energetic” (M-2, PU).

“Sports has so many benefits, it increases my son's concentration” (M-7, PR).

In addition to the benefits raised by children, some mothers discussed sports as an essential foundation for discipline; it builds children's character and helps them set their mind to achieve great goals.

“She [my daughter] learned disciplined when doing sports; she knows how to respect the time and she packs her own clothes before going to her class” (M-2, PR).

“Sports help children learn how to set a goal, especially when it comes to competition” (M-3, PR).

Despite showing positive attitudes towards being active, some students expressed negative attitudes toward physical activities mainly physical discomfort that may occur such as muscles soreness, tiredness, respiratory problems.

“When I exercise on the treadmill, I feel pain in my lower body. Then I woke up in the morning with sore muscles” (G, PU, FGD-2).

“It's like when you are so tired you can't accomplish anything anymore. I can go play with my friends there, you know you change your mind, but sometimes when you're tired, you're back from school let's say, not like nowadays but it happened to me, so you're tired from school, you just can't be more tired” (G, PR, FGD-1).

“I prefer farming [gardening and feeding animals] over football or basketball because I have some respiratory problems so I get tired easily” (B, PR, FGD-2).

Other children refrained from participating in certain activities for fear of getting hurt or hurt others.

“When I used to do boxing in the gym, we used to hurt each other, which really annoyed me cause we keep on hurting each other and this is why I stopped” (B, PR, FGD-3).

“Sometimes we are afraid to hurt ourselves when we are doing some exercises like jumping” (G, PU, FGD-1).

Similarly, only some mothers worried that physically active children could and would hurt themselves or experience physical discomfort and may therefore be likely to limit their child's activity.

“There are also things while doing a sport that makes me worried, especially those activities or movements that children do for the first time. Last time,

my son slipped while doing sport and felt pain in his arm for two days” (M-1, PU).

“Sometimes when they [my children] don't practice for a long time and then start again any type of sports, their muscle get stiff and they will no longer be able to move the way they want” (M-3, PU).

2. Theme II. Determinants of Physical Activity

a. Individual Determinants

i. Rewards for Physical Activity

As with the healthy eating, attitudes towards rewards for being active were perceived differently amongst children (by sex) and mothers. Some girls were concerned about employing positive reinforcement. They associated the action of being active with rewarding themselves or being offered compensation. Food treats (e.g., chocolate), money, and gifts were commonly mentioned as rewards for being active, which were reported mainly by girls from the public school. Other incentives included relaxing or taking a break after doing sport.

“I would reward myself if I finish exercising by eating something totally unhealthy cause I just burned a lot of stuff and I would be very hungry, like maybe chocolate” (G, PR, FGD-1).

“If I do sports, my parents would give me money” (G, PU, FGD-2).

“I reward myself when I do physical activity by doing something fun or just laying down” (G, PR, FGD-1).

Controversy, boys countered this idea by stating that they do not reward themselves or get compensation for doing physical activity. Rather, they mentioned being satisfied after exercising because their competence will improve afterward.

“I don't ask for something in return” (B, PR, FGD-3).

“When I see myself doing well in sports, I become so happy so I reward myself by appreciating that I did a good job in sport” (B, PR, FGD-2).

“When I do well in karate, I get excited that I will be better in that kind of sport” (B, PU, FGD-3).

Mothers' views towards rewards and incentives for doing physical activity varied too. Some mother participants expressed positive attitudes towards incentives by stating that their children get rewarded for being active (e.g., tangible gifts).

“My daughter asks me to buy her a dress or t-shirt if she does well in sport and then I do that once she finishes” (M-2, PU).

“My son would like me to get him anything related to sports when he practices to show others that he started exercising in a good way, like a sports watch, dumbbells, or running shoes” (M-8, PR).

For other mothers, rewards were perceived unfavorable and reported that participating in championships and winning were the reinforcing stimuli for doing sports.

“The goal of sport is to win championships and obtain rewards and medals. So to act like a star in the court, to score, and to win medals, are what she [my daughter] would love to get in return” (M-2, PR).

“They [my children] don't reward themselves but if they are participating in a certain game, getting medals and winning is what is important for them” (M-3, PR).

ii. Perceived Ability to Participate and Succeed in Physical Activity

The majority of children showed uncertainty when they were asked about their ability to participate and succeed in a physical activity program (school or extracurricular physical activities). Other children indicated that they are or would be capable to succeed if they set achievement as their goal.

“I stopped football cause it made me feel like I have to shoot the ball using my leg...I feel like there's a movement with my legs that I am not able to perform” (B, PR, FGD-2).

“I am not sure I will be able to win” (G, PU, FGD-2).

“I think I can do sports, but not so much” (B, PU, FGD-3).

“When I start winning games, I tell myself that I should keep practicing to become a professional in this sport” (B, PR, FGD-2).

Nonetheless, mothers expressed confidence in their children’s abilities to engage and succeed in sports activities.

“She [my daughter] is always excited about sports, so based on that I think she is 90% capable to succeed” (M-3, PU) .

“I think part of it is that she is naturally a bit athletic so exercising comes easy to her. She is kind of lucky with that, you know, to have an athletic build. So having her run or play isn’t hard for her to do, she is capable to do that pretty easily” (M-1, PR).

“I can see that he would always be the number one in sports since he does every exercise and activity very well” (M-1, PU).

Despite having different views among all participants regarding children’s competence, some mothers and children affirmed that children’s ability depends on

whether the type and schedule of these activities satisfy their preferences; the more they cherish the sessions, the more they would engage in them and achieve the desired aim.

“My ability to succeed in sports depends on the program and the required exercises” (G, PU, FGD-1).

“If I like this schedule or sports I would definitely stick to it, but if the schedule isn’t perfect for me or this sports I don’t like, maybe I wouldn’t stick to this schedule or maybe I won’t stick to this program” (G, PR, FGD-1).

“If the activity is nice and I like it, then I think I would be able to succeed in the program, then I keep fighting for this” (B, PR, FGD-3).

“If she [my daughter] would like the activity, then, of course, she would have the ability to participate in the program. I notice when she is watching a show that she really likes, she would get excited to participate otherwise you just see her sitting on the side” (M-2, PR).

“He [my son] doesn't have a problem to participate in any physical activity program as long as the activities are interesting for him” (M-7, PR).

b. Social Determinants

Influences at the interpersonal level were also noted to be important. Children and mother participants frequently stated that parents, family members, and friends have a strong influence on children’s physical activity patterns.

i. Parental and Family Influence

Parents, siblings, and family members were discussed as facilitators of children’s physical activity. Children often stated that active parents act as positive role models for encouraging physical activity. Parents participating in activities with their young child were also deemed to facilitate activity with other positive parental

influences, including positive encouragement, and support, the provision of sports equipment, all of which facilitated children's activity.

“My mom does sport frequently, and I love doing sport as she does and I told her that I want to go with her to the gym during summer” (G, PU, FGD-2).

“Last time, I wasn't feeling like doing sport but then my father came and encouraged me to get active” (B, PU, FGD-3).

“My father brought us the treadmill machine to practice at home” (G, PU, FGD-1).

“When coronavirus started, I really wanted to play basketball, but I could not, so my father brought me a small basket and a ball so we can play at home. Also, during winter, we moved the ping pong table to an indoor room in our home and started playing” (B, PR, FGD-2).

As mentioned, parents and family were perceived as mediators for physical activity, which was also confirmed by mothers. Parental and family support also included encouragement and modeling.

“Her dad keeps running and exercising every day so the kids see that and enjoy that and get along with him” (M-1, PR).

“If there are people that encourage her during the day, she [my daughter] would stay active and play, otherwise they [children] would watch television all the time. If her cousins came over, for example, they would turn the music on and dance or even play. I mean that if there is such an environment, they would forget about screen time and get active otherwise they would sit all day long” (M-3, PU).

In addition to the common influences raised by both children and mothers, some mothers from private schools reported that they had to make an effort to organize and

coordinate children's timetables to instill physical activity as part of their daily life schedule.

"I used to organize their schedule to help incorporate sport during their day like on Sunday she [my daughter] would complete all her homework due for Monday and Tuesday cause when she would come back from school, she doesn't have time to study, she would just eat, dress, and get ready for sports, then when she comes back she would take a shower and have her dinner" (M-3, PR).

"The child knows his schedule when he has let's say an hour and a half of activity per week, he would know that he has to incorporate sport in his schedule, he would adapt very easily, I don't think it will be difficult for him, because he knows that sport is like any mandatory study class he has to take. He would know that this is part of his activities but you have to establish this routine from the beginning" (M-5, PR).

Both children and mothers acknowledged the importance of parents and family to promote children's active lifestyle, and that in some instances parents can become barriers to their own children's physical activity level. For example, children stated that having parents who are not active and not engaging in sports with them, or showing that they cared about their physical activity limited the opportunity of children to stay active.

"There are parents that don't encourage children like they would leave them by themselves and do whatever they want to do, even if they don't want to get active" (G, PU, FGD-1).

"No one of my family members guides me and encourages me to do anything" (B, PU, FGD-3).

"But sometimes, they [my parents] don't like to do sports and they don't support me to do it, no one actually encourages me to do so" (B, PU, FGD-3).

Besides, time constraint was a unique barrier raised by mothers. Some mothers mentioned having a busy life (e.g., full-time job) and priorities (e.g., school routine), so they had difficulties finding a convenient moment for such activities.

“One obstacle is that we come late from school, tired, and their physical activity session is in the evening. So the timing of sports activities is not compatible with the timing of the school nor with our life priorities” (M-3, PR).

“As a working mom, I usually have a full work schedule that is very busy and then I come home and have to worry about school homework. So even now, we don't have time, too many studies and work so we don't have that time to feel relaxed and enroll them in a certain sports program. First, there is no time for that, second, we in our community sport is not an essential part of our daily routine so we think that if we still have a bit of time in our life then we can sacrifice it for sports, which is not possible every day” (M-4, PR).

ii. Peer Influence

Friends were cited by children as having an influence, both positive and negative, on their physical activity patterns. Children believed that having friends who are active, or with interests in sports encourage them to stay active.

“When we feel like we don't want to play in a specific activity, some of my friends go like come with us we will have fun together, so they change my mind and encourage me to participate” (G, PU, FGD-1).

“My friends told me last time why you don't play with us, we will have fun and then they were able to encourage me to join them” (B, PU, FGD-3).

However, sometimes peers appear to be a hurdle to physical activity. Children refrain from participating in some activities due to the fear of stigmatization or bullying. For instance, some children expressed their negative attitudes towards the threatening

atmosphere created in competitive activities or in activities that include different levels of competence.

“Like, let’s say one of the students is really bad in certain sports like most of the boys would bully anyone, boys or girls, they would bully this person and they’re like you’re a loser, you can’t do this” (G, PR, FGD-1).

“During sports classes in school, my friends used to bully those that are not as strong as they are and tell them that they are losers and starts nagging” (B, PR, FGD-2).

“In basketball or any other sport, there is always this win-and-lose situation, for example in football, they fight to get the ball, so when I take care of the chicken, I don’t feel that there is someone that loses or making someone feel that he doesn’t know how to play” (B, PR, FGD-2).

Mothers did not discuss peer pressure as influencing their children’s active lifestyle. Similarly to the healthy eating section, mothers perceived the influence of parents and family members on their children’s eating habits as powerful as peer influence.

c. Availability and Affordability of Spaces

The local environment plays a role in shaping children’s physical activity. Lack of availability of spaces has been considered a significant barrier to children’s physical activity. Children and mothers cited the absence of community facilities and spaces in the city, Beirut, such as playgrounds, parks, and bike tracks, a limitation to children’s activity.

“Sometimes when I go to the mountains, my friends and I create a Parcours. In the mountains, there is a place with some rocks where we can jump over them. We cannot do this in Beirut, there are no places” (B, PR, FGD-3).

“Let’s say we’re talking about biking, there are no places to bike expect in Beirut-by-bike and we can only go there once per month. You know, here in Beirut, there are no sidewalks or biking trails...the thing is that she [my daughter] really likes doing sports but we have limitations” (M-2, PR).

“The thing is that here in our city, Beirut, there are no opportunities to do physical activity. Whereas in the mountains, we have some open spaces where we can walk, do some activities, here in Beirut we can’t even move” (M-4, PR).

In the absence of spaces, mothers attempted to use the available areas to encourage children to stay active. For example, they allocated a specific day for going to the mountains where children can play and get moving. Furthermore, COVID-19 pandemic and the Beirut’s blast appeared to act as great opportunities that have increased children’s activity level as most Lebanese families moved from Beirut to their rural houses.

“Our home is small, they can’t play if you don’t have a like a small space so I prefer to take them [my children] to somewhere far away from here so they can play a little bit” (M-1, PU).

“During quarantine, children are not having the opportunity to do activities or sports but when we went to the mountains during weekends, they can ride their bicycle or do skateboard and rollers so they can get a little bit more active there” (M-4, PR).

Similarly, children perceived their neighborhood’s rural facilities as a facilitator to get active (e.g., gardening and feeding animals, biking, walking, playing), in contrast to the city where they spend most of their time on the screen or playing video games.

“Ever since we went to the mountains during coronavirus, I got more active as I am spending most of my time in the farm” (B, PR, FGD-2).

“After coronavirus and Beirut’s explosion, we went to the mountains. My family was bored up in the house, but I used to go down and bike with my friends. When the school resumed online classes, we went back to Beirut and I kept on playing PS4” (B, PR, FGD-2).

“When I go to the mountains, I go out with my friends, walk, bike, and play football, we play and we have fun. Here in Beirut, we can’t do anything like that, they don’t allow us to walk on the roads and play” (B, PR, FGD-3).

In addition, some children from the public school further emphasized that sports facilities, in their school or their wider community, are an effective way to encourage physical activity.

“I got encouraged to do sports if I go to the gym but when I am home I just want to relax and sleep all day” (G, PU, FGD-1).

“We are motivated to do sports in school because there are places, places where we can play” (B, PU, FGD-3).

Mothers echoed their children’s views about sports accommodations as facilitators for an active life.

“We are thinking to enroll them [my children] in a certain physical activity, maybe when the coronavirus’ period passes” (M-3, PR).

“The good thing that now there’s a gym near our home where they can go and exercise but when we were living in previously, my children wanted to go to a gym but we couldn’t make it, the gym was far from home” (M-5, PR).

Mothers from public school acknowledged that as well, yet, they reported that money was a barrier to participating in extracurricular activities given their financial inability to sign up their children for sports teams and provide transportation.

“He [my son] always insists that he wants to go to the gym, but you know the problem is related to money...honestly, I can’t sign him up in a sport team” (M-1, PU).

“I think that every child would love to do sport if activities were available but the most important thing is to be able to sign him [my son] up and afford transportation” (M-2, PU).

3. Theme III. Sport Environment

One common pattern that has emerged is the emphasis on the sports environment whether participants were discussing physical education classes at school or at another sports facility. Within this theme, children and mothers discussed the timing of activities and the influence of physical education’s teachers or coaches.

a. Timing of Physical Activity

Children and mothers discussed timing as an important factor affecting physical activity engagement in children. Some girls from the public school complained about morning physical activities expressing sleepiness and fatigue as a barrier to get active, with one girl stating “we don’t feel like being active when the sport session is in the morning, we would still be sleepy, you know (G, PU, FGD-1). Only one mother discussed the timing and stated the need to have morning sessions for children as it boosts their energy.

“I think PE sessions should take place in the morning cause during the first school session, children are more attentive, and sports boost their energy for the day, so I think they should start the day with sports” (M-2, PR).

Furthermore, some boys wished to incorporate additional physical activity classes in their school curriculum, especially that one boy stated that they are practicing less than the time that was dedicated to physical education classes.

“We wish that we have additional sports classes in school, it would give us more energy” (G, PU, FGD-2).

“It takes us a lot of time to get ready for the sport class in school because we have to leave the class and go downstairs, so around 25 minutes remained for activities. I wish we have more physical activity classes in school, like two sessions per week instead of one” (B, PR, FGD-2).

b. Influence of Physical Education’s Teachers and Coaches

Teachers’ attitude is another factor affecting physical activity in children. Some children and mothers stated that physical education’s teachers or coaches had a positive influence on children’s physical activity practices by encouraging, supporting their engagement in activities, and helping their improvement. Other children even reported that they would be more active or engaged in more physical activities if there was a trainer that would instruct them.

“If there is someone who doesn’t know how to do a specific exercise, the teacher explains and shows us how to perform it so this encourages me and makes me feel that I can do it” (G, PU, FGD-2).

“When there is someone who can teach and train me then I can easily exercise” (B, PU, FGD-3).

Similarly, mothers discussed how a qualified teacher inspired children to be physically active, while teachers who are considered grumpy or too strict appeared to discourage and demotivate children.

“There are some exercises that he [my son] keeps on doing at home. So he always tells me that the teacher taught them these exercises. He even does them in front of his sister. So I think he loves the sport that much because his teacher inspires him and he has a way of teaching children. If the teacher was dull with him then he wouldn't act the same” (M-1, PU).

“Not every coach who teaches sport has a way of talking with children. Last time, my son's gymnastic coach pushed him to perform a certain exercise, and when he came back home he told me that he wanted to stop gymnastics” (M-8, PR).

4. Theme IV. Suggestions to Encourage Physical Activity among Children

Children and mother participants suggested some strategies to encourage children to be more physically active. These suggestions include strategies and ideas related to i) the availability of space, facilities, and equipment, whether in the school or community and ii) approaches of physical education programs.

a. Space, Facilities, and Equipment

The provision of space, facilities, and equipment for physical activity was seen as an essential part of children's habits. Children recognized the importance of having available spaces, such as playgrounds and bike trails, in their school and community to be active. Therefore, they suggested their presence as opportunities to be physically active.

“I wish there are a bigger space where we can play” (G, PU, FGD-1).

“Maybe if play courts like a place to play football were available, we would have the opportunity to move more” (B, PU, FGD-3).

Mothers also advocated for the importance of features of the school and community environment to improve children's physical activity. In addition to that, some mothers mentioned the influence of physical dimensions of school because they rely on their children being active at school as they do not have time at home to ensure a sufficient level of activity. Another mother also mentioned that sports facilities (e.g., gyms) appropriate for children less than 12 years of age would further encourage exercise.

"I searched for a gym appropriate for my children's age and I didn't find any. I think that a gym appropriate for their age would encourage them to do more sports. I contacted several gyms and asked them if children under 12 years of age are allowed but unfortunately, I didn't find any gym that welcomes children less than 12" (M, private school).

"I hope that the school work on having some playgrounds or clubs available so children can choose the activity that they want. I think this would facilitate children's physical activity habits because you know we as parents work and we can't pick them from school then drop them off for their extracurricular activities. So when such facilities and opportunities are available within the school, we get reassured that our children are having the opportunity to get active even if those activities took place after classes, eventually they can stay at school" (M-7, PR).

Furthermore, some children shed light on access to equipment to increase their activity level. They highlighted the importance of expanding the supply of playing equipment in community school, gyms, and home to facilitate their routine activity.

"I wish if opportunities are available in our community, for example, Khaldeh's municipality has once provided bikes for people" (G, PR, FGD-2).

"I hope the physical activity program in school can bring more equipment, if they can't afford to buy some materials, they can do them by themselves, like ropes for example" (G, PU, FGD-1).

“Or if a variety of sports-related equipment were available in the gym” (G, PU, FGD-1).

“Instead of going to the gym and pay money, we can have some sports equipment available at home” (G, PU, FGD-2).

b. Physical Education-Based Strategies and Approaches

Another emergent subtheme was related to potential strategies and approaches to take into account when designing a physical education program. Suggestions included non-competitive atmosphere and policies, varied and fun exercises, gender equality, theoretical notions about physical activity, and learning through screen-based activities. To begin with, children and mother participants discussed their views on competitive sports activities. Children considered competitive games and performance as a barrier to physical activity. Instead, they valued the range of non-competitive activities to create a non-threatening atmosphere by focusing on enjoyment, fun, and inclusiveness for all children regardless of their competence.

“I hope that when we are playing with or against each other, we appreciate and congrats each other even if there is a team that won and another one that lost” (G, PU, FGD-1).

“I wish that we play with each other and not against each other like hide-and-seek, for example” (B, PU, FGD-1).

“I wish that in the program they focus on like on...I don’t want to say really bad people in sports that’s not true, but focus on people so we all are on the same level, so we can’t say this person is not good or that person is stronger. In a way that most of us aren’t getting bullied and sometimes play with someone low like levels, you feel like you just don’t want to play anymore, no offense to anyone. But when I play in my basketball training, I know there are more levels and I feel much happier when I play in the school, I know there are all different levels” (G, PR, FGD-1).

Only a small number of children indicated that they would like sports activities such as competitions to be held from time to time.

“Another thing that would encourage all of us is that we can do like they can get other people from other schools to like make a match” (G, PR, FGD-1).

“I suggest having competitions like we used to play a game where we should run to catch the flag first and the first who catches the flag wins. So I wish we can do these competitions again and those who win get gifts or medals, things like that” (B, PR, FGD-2).

“I think competitions should take place after each semester, like having semi-finals and then finals, we get more excited” (B, PR, FGD-2).

Furthermore, program’s policies and rules focusing on inclusiveness and enjoyment were proposed by children. Examples of suggested policies included allowing children to choose their own activities, or to choose teams based on performance level which would increase the chance of everyone finding an activity that fits their interest or their competence. Giving a warning or a notice for children that contribute to a threatening and stigmatizing atmosphere was reported as another suggested policy.

“We would pick the teams that we want, like let’s say they are all on the same level but one is stronger, they put them in the stronger team so that nobody would like to get pressure from each other” (G, PR, FGD-1).

“The program should implement some rules against bullying or don’t allow these children to join these classes anymore” (B, PR, FGD-3).

“These children, those who threaten and disturb the class should get a warning or maybe they should be asked to raise their hand before talking” (B, PU, FGD-3).

While most children focused on inclusiveness, some mothers showed their preferences towards a separate-group approach (e.g., competitions, varsity) instead of a whole-class approach, revealing their concern toward less active or competent children who may be a barrier to their children's physical activity.

“Some children love sports while others don't and all of them play together in the same place. So the PE program should keep together those who love sports through a certain assessment. Let's say my daughter is 10 years old and loves basket, she should join the varsity to stay part of the basketball system. I was in school and I know that there are lots of girls who usually sit and do nothing during classes and the coach spend the session calling these children.. while there are other girls who want to benefit from the session” (M-2, PR).

“The program can organize some competitions because some children, especially girls, start giving excuses not to play or because some coaches focus on specific good students and forget about others” (M-3, PR).

Another common approach that was discussed is providing variation and fun to keep children motivated to participate in a physical education program. Children and mothers suggested implementing varied and fun activities in different ways. Children discussed the idea of offering physical activities that are varied (e.g., basketball, Parcours, practical events like marathon), fun, and interactive (e.g., music, chairs, games).

“I wish there are more kinds of activities” (G, PR, FGD-1).

“I love if we get active every day in school by having a variety of activities like basketball and Parcours” (B, PR, FGD-3).

“Last year the school organized a marathon, it was really nice and we joined the event” (G, PU, FGD-1).

“Games like having chairs all around, turning on the music, and running until the music stops” (G, PU, FGD-2).

“We love games, last year, for example, we use to play a game in which the coach shows us a 5 with his fingers, that meant in 10 seconds, 5 people should come together and if a group ends up with less than 5 people, the group loses” (B, PU, FGD-3).

Mothers also advocated for having different types of activities rather than traditional organized sports, like basketball and football, to get active while having fun (e.g., stretching, fitness, self-defense).

“Stretching can be included as well, there should be a variety of activities instead of doing the same games over and over again” (M-3, PR).

“Maybe incorporating more physical activity instead of just focusing on like just two sports in the sports, it is not that they do not enjoy it, but you can easily play basketball and not actually move if you are in a group of 5 girls, you can just hang out on the sideline and never actually move your body. So just incorporating more kinds of physical activities maybe. So yeah I think just broader, like anything broader than just basketball and football and there are so many ways people can be physically active” (M-1, PR).

“School PE program should conduct more self-defense exercises to learn several effective self-defense techniques in case they were confronted with a stranger for example” (M-3, PU).

It is also worth stating that different views regarding physical activity and gender were noted when children and mothers were suggesting different types of activities. According to one mother, the type of physical activities should be chosen based on gender; some activities are perceived to be valid only for girls (e.g., Zumba) while others are perceived to be appropriate for boys (e.g., football, climbing).

“As a boy, I think activities should include football or climbing on the wall but as a girl, activities should be like Zumba or these kinds of stuff” (M-2, PU).

Whereas, a girl expressed her concern towards not implementing gender equality in physical education programs stating that children should be allowed to choose their own activities regardless of gender.

“What I don’t like about last year is that they put the girls to do gymnastics, not all girls like gymnastics, and they put the boys to play basketball and football and all these stuff. I just think that it’s unfair to put the girls in ballet and the boys in football or basketball. I personally wish they put the girls with the boys together and that everybody would do the sport that they would like” (G, PR, FGD-1).

While suggestions related to the practical part of physical activities were the main focus of participants, some mothers recommended the need to combine the practice with theory. They suggested including a theoretical part within the physical education program by including theoretical notions about physical activity (e.g., purpose and benefits of sports), teaching videos, group discussions, and presentation by successful role models who may inspire children to engage in sports.

“I think it would be helpful for a lot of kids if included in the PE program things broader than learning how to move their bodies well. I think maybe broader like what the view of sport is” (M-1, PR).

“The PE program or the school can teach sport not in a traditional way, the way that we’re used to where a teacher or a coach comes and teach the exercises. They can improve the approach and include more teaching videos and maybe more discussions with children” (M-4, PR).

“The sessions should explain to children that the purpose of sport is not only to get us tired it’s also fun where we can go, play, and get rid of stress” (M-2, PR).

“People similar to children’s age like maybe teenagers or bloggers on social media should be called to the sports sessions because children are really influenced by these people. These influencers can come to those sessions, exercise with children, and open discussions together. They are influenced by those people more than their teachers because they already know them and got used to them” (M-4, PR).

When participants talked about approaches to improve physical activity programs, one common last theme was related to screen-based activities. Some children and one mother expressed that, if learning sports was accessible through YouTube videos or social media, children would probably be more engaged in physical activity, which highlights the extensive use and influence of online platforms.

“We love if we watch videos on YouTube within the physical education classes or program, these videos would encourage us to do sports” (G, PU, FGD-2).

“We love watching videos, in those videos, they talk to us in a very gentle way and open some discussions” (B, PU, FGD-3).

“Social media platforms through which children can learn sports is a good idea because children are greatly influenced by such platforms especially when they see anything related to health, there’s a high possibility for them to do the same” (M-7, PR).

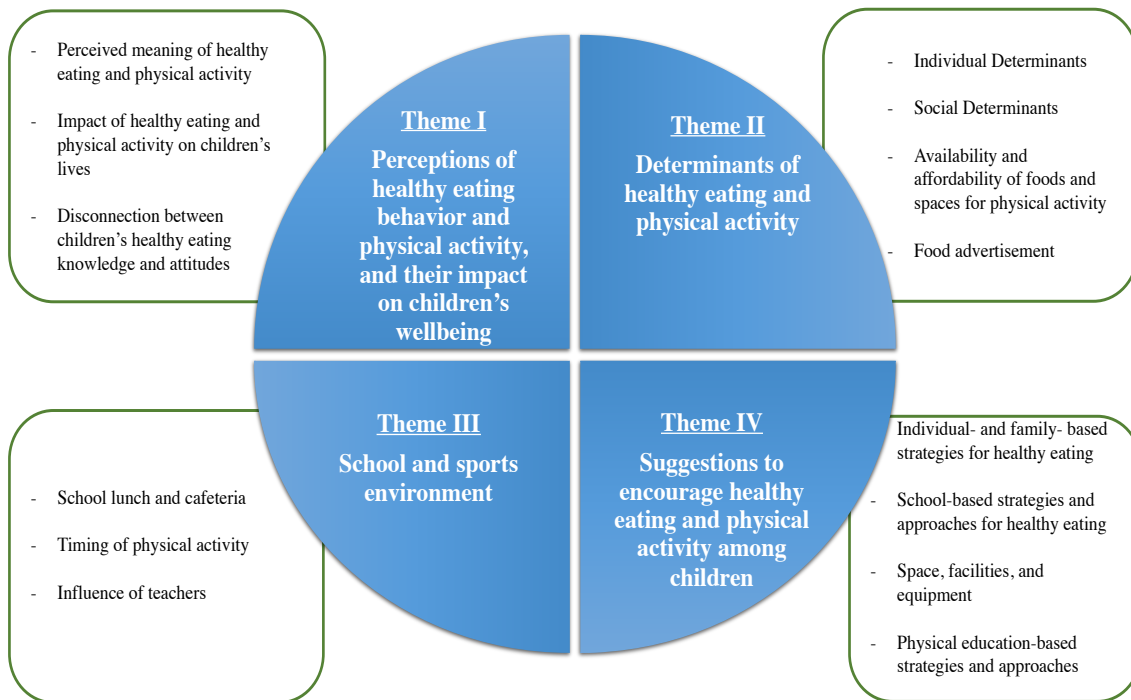


Figure 1. Thematic map of themes and subthemes of healthy eating and physical activity

CHAPTER IV

DISCUSSION

A. Parental and Children Perceptions and Experiences towards Healthy Eating and Physical Activity

Findings from this study provide insights into Lebanese children's and mothers' understanding of the factors that influence children's eating and activity behaviors. In addition, this study presents participants' suggestions to encourage healthy eating and physical activity among children. The findings of the present study encompassed four main overlapping themes regarding children's and mothers' perspectives and experiences on children's healthy eating and physical activity habits. The themes discuss ii) perceptions of healthy eating behavior and physical activity, and their impact on children's wellbeing, ii) determinants of eating and physical activity, iii) school and sports environment, and iv) suggestions to encourage healthy eating and physical activity among children (see **Figure 1**).

Children and mothers presented their views regarding the perceptions of healthy eating behaviors and physical activity, and their impact on children's wellbeing. Children and mother participants in our study perceived healthy eating based on food types, nutrients, color, and balance. In addition, mothers in the present study also perceived traditional Lebanese food to be healthy for their children. Similarly, studies from different settings have previously shown that school-aged children and adolescents (aged 9 to 14 years old) distinguished healthy from unhealthy eating according to food types, nutrients, the source and origin of food, and foods' color (Correa et al., 2017; Ishak et al., 2020; Talip et al., 2017; Tiedje et al., 2014; Zeinstra et al., 2007). Other

studies have also shown that parents of 5 to 7 years children interviewed in Lopez-Dicastillo et al., (2010) valued traditional foods and natural products from vegetable gardens and considered them healthy. Moreover, studies that investigated both school-aged children's and their parents' (mothers and fathers) perceptions of the maintenance of a healthy lifestyle in children, showed that children related healthy eating with food types and with the concepts of balance and moderation, whereas parents perceived healthy eating mostly based on nutrients (e.g., low in fat) (Lopez-Dicastillo et al., 2010; Park et al., 2019). The differing perceptions towards the meaning of healthy eating were notably noticed in the results of our study between children and their mothers. As for physical activity, children's activity patterns were determined by their activity preferences (i.e., organized sports, leisure activities) and their own enjoyment. Corroborating previous studies and a systematic review conducted in high and LMICs, school-aged children and their parents reported engaging in organized and spontaneous sports (Hasan et al., 2020; Jonsson et al., 2016; Ross & Francis, 2016) as well as participation in leisure activities not being linked with physical activity (Martins et al., 2015).

Children and mothers in our study also showed a good understanding of the positive impact of healthy eating and physical activity on children's wellbeing. Children were able to relate the importance of consuming healthy food as adequate sources of energy, vitamins and minerals and were able to link their healthy dietary habits with the overall health of their body and growth. Mothers also emphasized the importance of healthy eating and lifestyle behaviors in preventing diseases. Similarly, Lilo et al. (2018) and Talip et al., (2017) showed that children aged 8 to 10 years and their parents recalled the positive impact of healthy eating on children's lives, such as the provision

of a source of energy, supports active learning, helps healthy organs, prevents diseases and illnesses, and offer a positive body image. Interestingly, in our study, children's perceived benefits of dietary habits were different than those of their mothers. In fact, children discussed general health benefits related to their overall physical health and wellbeing, as opposed to the perceived benefits reported by their mothers, such as disease risk reduction. This pattern was also identified in a study conducted in the United States, which investigated potential targets to improve health behaviors in young adults attending college and found that young adults believe that when they eat healthfully, they "feel better," both physically and psychologically, and are energized, in contrast to the outcome expectations related to disease and illness prevention, which may be more significant to older adults (Strong et al., 2008).

In parallel, children and mothers perceived distinct benefits of physical activity, and expressed negative attitudes related to physical discomfort and safety concerns. The perceived impact of physical activity was in line with commonly cited positive (i.e., physical, social, emotional, and cognitive benefits) and negative attitudes of children and parents (i.e., physical discomfort and safety concerns) towards physical activity (Hesketh et al., 2017; Martins et al., 2015; Ross & Francis, 2016). A systematic review exploring the barriers and facilitators of physical activity amongst students aged 11 to 18 years has shown that safety was a common concern that prevented children from being engaged in organized sports and leisure activities (Martins et al., 2015). Some studies also suggest that mothers may play a role in discouraging their children from being engaged in some of the sports. For example, a study in Bangladesh exploring the perceptions of mothers towards their children physical activity has shown that mothers often complained that sports increase tiredness and injury, thus, discouraging their

children from being active, as reflected by this quote “I don’t let him play because they get injured and have accidents. That’s why I am not interested in the games. Children don’t want to participate (in games at school) as they know that if they get hurt, I will scold them” (Hasan et al., 2020).

Despite children’s ability to value the importance of eating healthfully, there appears to be a ‘gap’ between the nutritional awareness in theory of children and positioning this knowledge into their healthy eating practices; a subtheme that was uniquely described by children. Children’s behaviors appeared to override this knowledge when making decisions about food and seem to be influenced by overarching factors. Existing literature supports the disconnection present between children’s knowledge and practices of healthy behaviors (Fitzgerald et al., 2010; Hesketh et al., 2005; Snethen & Broome, 2007; Verstraeten et al., 2014). For example, a study conducted in India among ethnically diverse children of 8 to 12 years of age, showed children’s ability to accurately identify behaviors that would promote good health (e.g., foods that were part of the recommended guidelines, importance of exercise). Yet, the actual behaviors children reported engaging in were less than healthy, such as limited fruit and vegetable intake and exercise (Snethen & Broome, 2007). This might explain why children’s knowledge about healthy behaviors in our findings is not necessarily translated into their daily dietary regimen.

Participants described a set of intrapersonal, social, and environmental determinants that influence children’s eating and activity habits. In terms of individual determinants, these included food preferences and choices, eating out of boredom, use of rewards or compensations to engage in healthy eating and active behaviors, as well as perceived ability of children to eat healthily and to participate and succeed in

physical activities. Food preferences and choices, as well as boredom, were consistently identified as major individual influences on the food choices of children in our study and across several studies (Fitzgerald et al., 2010; Shepherd et al., 2006; Talip et al., 2017). In these studies, children and adolescents discussed how taste, texture, appearance, and smell influence their decisions about food. Parents also reported that taste preferences affect their children's food choices (Fitzgerald et al., 2010; Shepherd et al., 2006; Talip et al., 2017). However, in one of these studies conducted among Bruneian primary school children (aged 9 to 10 years old), parents highlighted that when they prepare healthy foods, their children would refuse to consume it and struggle to encourage their children to eat healthy food (Talip et al., 2017). This may explain our interpretation of why mothers in our study discussed their children's food preferences in terms of what they like and dislike rather than how the sensory characteristics of foods affect their children's food choices. Children in our study who were interviewed after measures were implemented in Lebanon to reduce COVID-19 spread, talked about how they tended to overeat when they were feeling bored and as a result of school closures and strict restrictions regarding going outside home. A recent study reviewing the potential effect of COVID-19 quarantine over eating habits of children aged 0 to 12 years in Brazil, found that children's eating habits have been negatively impacted during the pandemic. Around sixty-seven percent of parents who claimed changes in their children's eating habits revealed an increase in food intake, notably from processed foods, pasta, and carbohydrate-rich snacks (Campagnaro et al., 2020). In fact, the new routine, remote classes for children, the psychological effect of the pandemic, and economic instability have contributed to changes in dietary habits among children and adolescents (Di Renzo et al., 2020; Spinelli et al., 2020). Further research is needed to

understand the impact of COVID-19 on Lebanese children and their emotional-driven eating behaviors during the pandemic.

In addition, participants described rewards or compensations to engage in healthy eating and physical activity as important individual determinants shaping children's behaviors. In the healthy eating and physical activity sections, incentives and rewards were positively seen by children, as opposed to mothers, who appeared to worry about the negative influence of the use of rewards. In fact, some mothers stated that their children do not get compensations for eating healthy or getting active, whereas, other mothers expressed positive attitudes towards good eating or active behaviors. This discrepancy was also echoed in Park et al.'s (2019) study where mothers reported that foods were often used as a common positive reward for children's good behaviors but expressed worries about the negative influence of such gestures on healthy food intake. Also, our analyses revealed that, similar to existing perspectives on compensatory behaviors (Clarke et al., 2013; Law et al., 2020; Van den Berg et al., 2018), some children and parents did engage in compensatory beliefs (i.e., watching TV, eating low-nutrient foods and sweets) around physical activity participation, where others appeared not to endorse such beliefs. Uniquely, in the physical activity section, attitudes towards rewards for being active were perceived differently amongst girls and boys; some girls were concerned about employing positive reinforcement, controversy to boys that countered this idea. Actually, this line of thinking was seen among 10 to 13-year-old primary school children's in Netherland where girls suggested that teachers could offer children a reward as an incentive to join games during recess: "Maybe they can be allowed to do something else afterward [physical activity], like drawing", as opposed to boys who indicated that it would be important that teachers provide a

rationale for additional physical activity: “Well, teachers should stimulate additional physical activity more and also explain the purpose of it” (Van den Berg et al., 2018). Further research is needed to understand the reasons behind Lebanese children’s and parents’ compensatory beliefs.

The last individual determinant communicated in our findings was the perceived ability to eat healthily and to participate and succeed in physical activities. Children showed uncertainty towards their ability to eat healthier and to engage and succeed in a physical activity program, whereas mothers expressed confidence in their children’s ability to do so. The differences between children’s and mothers’ views were also seen in a study exploring the maternal perceptions of children eating practices where mothers spoke confidently about their trust in their children’s capacity to self-regulate food intake (Bergmeier et al., 2017; Verstraeten et al., 2014). Also, the differences between children’s and mothers’ views towards children’s ability to engage in healthy behaviors might be explained by the fact that parents tend to consistently report confidence in their children’s ability to engage and succeed in desired behaviors such as healthy eating and physical activity (Bridge et al., 2019).

The present study identified social influences as another set of determinants that may influence children’s healthy eating and physical activity patterns. Children and mothers generally agreed that families (parents, siblings, and extended family members) affect food and activity choices. This is in line with results from two systematic reviews of studies conducted with children and mother population groups from high- and LMIC countries that have found that children’s eating and activity habits are influenced by family both positively and negatively (Hesketh et al., 2017; Martins et al., 2015). As opposed to the physical activity parental influences where both children and mothers

acknowledged that parents can become, in some instances, barriers to their own children's physical activity level, most children but only a couple of mothers in our study described parents and family as barriers to healthy eating. The negative influence of parents and family perceived by children was also shown in Azar et al., 's (2020) study exploring parents' and adolescents' differing perceptions of weight management needs of teenagers. In this study, one-third of parents reported aiding their youths in their change attempts for a healthy diet; but only 15% of youths reported receiving aid from their parents in their efforts to change their eating habits (Azar et al., 2020). We also found that children's eating habits are influenced negatively by peers as they tended to consume low-nutrient foods and beverages in the company of friends, which was also confirmed by other studies exploring perspectives and experiences of school-aged children towards healthy eating in India and Ireland (Correa et al., 2017; Fitzgerald et al., 2010). In contrast to healthy eating, children participants in our study cited peers as an encouragement source to get active, which was particularly true in studies conducted in other countries, where children talked about the positive peer influence promoting physical activity, with encouragement by friends (Sedibe et al., 2014; Snethen & Broome, 2007). In both the healthy eating and activity section, this subtheme was only raised by children, as mothers discussed only the influence of parents and family members on their children's eating and activity habits. In fact, mothers may perceive the influence of parents and family members on their children's eating habits as powerful as peer influence, which was also noted in Azar et al.'s (2020) study where parents felt that their role was more important than that of peers for influencing children' dietary behaviors (Azar et al., 2020).

Our results also showed that the availability and affordability of healthy foods and spaces for physical activity within home, neighborhood, and school can be key environmental factors in promoting healthy eating and physical activity habits, respectively, among children and adolescents. Children and mother participants considered home's food environment to either facilitate, or in some instances impede, healthy dietary choices among children, depending on the types of foods that are readily available. In a previous study conducted in Ecuador, children aged 11 to 15 years indicated that the availability of healthy food at home influenced their eating pattern because children eat what is served and available at home (Verstraeten et al., 2014). In another study conducted in London among ethnically diverse children aged 8 to 13 years and their parents, one of the most common concerns for parents was the availability of low-nutrients and sweets foods outside home, which also act as an obstacle to their children's healthy eating habits (Rawlins et al., 2013).

At the school level, the cafeteria, canteen, or kiosk were considered an obstacle to healthy lifestyles if too many unhealthy foods and snacks and not enough healthier choices were provided to children. This was consistently resonated throughout all our conducted group discussions and interviews with children and their mothers, respectively. Our results were consistent with those reported from several quantitative and qualitative studies conducted with children and youth revealing school canteen menus to be sometimes barriers for healthy eating behaviors when not meeting the required nutrition standards (Clarke et al., 2013; Hesketh et al., 2017; Verstraeten et al., 2014). However, mothers from the public schools, who mostly come from a lower socioeconomic status compared to mothers of children enrolled in private schools, did not see the school environment as a barrier to their children's consumption. This could

be, in part, explained by the lack of knowledge on basic principles of nutrition or due to the low involvement of parents in the public school system in Lebanon and the types of food that are being offered within the school environment.

In terms of physical activity, our study findings also showed that the sports environment can be a determinant factor for the physical activity of children. Both the school and neighborhood barriers to physical activity mentioned by children in our present study, including the lack of availability of space in the city, lack of convenient, and affordable sports facilities, were in line with commonly cited barriers for physical activity among children and youth in low- and middle- income communities (Hasan et al., 2020; Hesketh et al., 2017; Martins et al., 2015; Ross & Francis, 2016). Moreover, children and mother participants were discussing the timing of activities as another influence in the sports environment. The timing of physical activity was a commonly cited influence found in similar studies conducted in other countries. Previous evidence has shown that the timing of activities influence physical activity participation of children (Martínez-Andrés et al., 2017; Martínez-Andrés et al., 2020; Martins et al., 2015).

In addition to the food and sports environment, in both the healthy eating and physical activity sections, children and mothers reported that cost is a major barrier to healthy eating when purchasing foods, which was also reported in similar studies involving families from different socioeconomic backgrounds (Rawlins et al., 2013; Van den Berg et al., 2018). However, in our study, only mothers of the public school were conscious of the monetary costs connected to participating in extracurricular activities. This was in line with a study conducted in London, where parents from lower

socioeconomic groups cited cost as a significant barrier and mentioned signing up their children to free swimming sessions where available (Rawlins et al., 2013).

Our results also showed that food advertisements emerged as another important environmental feature influencing children's food choices. In fact, adolescents and parents from two different qualitative studies conducted in Canada and Ecuador, described tactics used in food advertising, including the digital food advertisements, to make food commercials look more appealing, as one adolescent noted: "Always, when they show the commercial, usually every single commercial is about junk food. And then you'll see the one or two like special like good foods for you" (Kebbe et al., 2019; Verstraeten et al., 2014).

Furthermore, it was generally believed that schools and sports facilities should set a good example for children through the influence of teachers. In particular, the need for teachers to lead by example through mentoring children and modeling healthy lifestyles was reported by both children and mothers. Available evidence and systematic reviews validate these beliefs showcasing the great influence of teachers on children's eating and activity habits (Clarke et al., 2013; Hesketh et al., 2017; Shepherd et al., 2006; Van Lippevelde et al., 2011).

B. Children and Parental-driven Suggestions and Recommendations for Promotion of Healthy Eating and Active Behaviors

Participants have suggested relevant solutions to encourage healthy eating and physical activity among children. The majority of children identified the need to have individual and family strategies and support to increase their self-control over foods, such as having a continuous 'reminder' and family support to stick to their healthy

journey. This finding supports previous research that advocated for developing student shopping lists and ensuring parental support for changing health behaviors in youth (Strong et al., 2008). Participants suggested school environmental changes including the increased availability and affordability of healthy foods, and decreased availability of unhealthy foods, as well as a proper dining environment with sitting chairs and tables. In fact, in similar studies conducted in other countries, the most frequently suggested strategies to support children and adolescents to eat healthfully included those focusing on increasing availability and accessibility of healthy foods while decreasing that of unhealthy foods (Clarke et al., 2013; Riggs et al., 2013; Stephens et al., 2015). Making the canteen and dining environment more attractive was also a suggestion seen in Clark et al., (2013) for promoting healthy eating at school lunchtime (Clark et al., 2013). Participants also discussed the importance of school in promoting healthy lifestyles and suggested ideas about how to design a program to improve healthy eating, through a combination of curricular sessions, partnering with parents, school-based approaches, and internet-based formats. Most of the solutions and suggestions provided by our participants were in line with previous systematic reviews and qualitative studies aiming to identify and synthesize the views of children, parents, and stakeholders on the role of multilevel strategies in preventing childhood obesity (Clark et al., 2013; Mejia et al., 2018; Riggs et al., 2013; Stephens et al., 2015; Strong et al., 2008). This steers us to the conclusion that obesity prevention efforts need to target multiple levels of influence and consist of a mixture of strategies and approaches, which were reflected in the preferences and expectations of children and their parents.

As for physical activity, participants identified the need to improve the features of the school and community environment (e.g., space, facilities, and equipment) to

improve children's physical activity. These suggestions were in line with systematic reviews and other studies conducted in high and LMICs where students and parents also acknowledged that the local environment has an important role in encouraging children's physical activity and cited local community facilities and spaces, such as playgrounds, bike tracks, and sporting facilities as well as sports equipment as facilitating children's activity habits (Hesketh et al., 2017; Ross & Francis, 2016; Van den Berg et al., 2018). Participants also suggested ideas about approaches to physical education programs, which include challenging but non-competitive atmosphere, fun, and varied activities, screen-based approaches, and theoretical notions about physical activity (e.g., teaching videos, group discussions, presentation by successful role models). These voiced opinions complement previous studies that adopted a participatory approach to explore the barriers and facilitator of healthy living among children (Jonsson et al., 2017; Lewis et al., 2014; Martins et al., 2015; Van den Berg et al., 2014; Van Lippevelde et al., 2011). This reveal the need to incorporate potential strategies based on children's and parents' own perspectives to designing programs to promote children's health and wellbeing.

C. Interlinkages

The narrative description of each theme and subtheme created a vivid picture of healthy eating and physical activity and opened a gateway to the story. Interestingly, the interactions and interlinkages between themes and subthemes across both sections are worth highlighting. Instead of examining these events separately, we might interpret these findings from the lens of the SCT, a theoretical framework that focuses on the interplay between children's personal, behavioral, and environmental influences and

how that can affect their health behaviors, including eating choices and physical activity levels.

As earlier presented, several individual-level psychological determinants for healthy eating and active living have been identified by children and their mothers in the present study. These determinants included the perceived confidence in children's ability to engage in healthy eating and active behaviors, and the perceptions of their impact on children's wellbeing.

Our findings first highlight self-efficacy or the perceived confidence in children's ability to engage in healthy eating and active behaviors, as one of the underlying reasons for engaging in healthy lifestyles. Children reflected on whether they could maintain a healthy eating and physically active lifestyle and identified several reasons that influenced their confidence levels. Specifically, these findings mirror goal-setting, perceived expectations of the desired behaviors, and the type of activities related to their belief in their ability to eat healthily and remain active. In contrast, mothers were more confident in their children's ability to eat healthily and staying active, as they expected more capabilities to overcome certain barriers, and perceived more benefits to the desired behaviors. These appeared to facilitate mothers' motives that their children could maintain a healthy eating and physically active lifestyle. Thus, interventions targeting self-efficacy and cognitive mediating variables are needed to promote long-term healthy behaviors. In fact, interventions focusing on self-efficacy have been shown effective in behavioral change (Henriksson et al., 2020; Smedegaard et al., 2016; Wright et al., 2012). For instance, the "Kids Health Research study" and the "Move for Well-being in Schools" are two interventions that aim to improve healthy dietary behaviors and physical and psychosocial well-being among

school-aged children and youths aged 8 to 13 years (Smedegaard et al., 2016; Wright et al., 2012). The evaluations of these interventions showed their effectiveness in reducing the risk of obesity and promoting psychosocial well-being among Mexican-American and Danish school-aged children and youth (Smedegaard et al., 2016; Wright et al., 2012). Furthermore, children in our study identified several individual-level strategies to increase self-control and promote healthy behaviors such as having a continuous ‘reminder’ (e.g., alarm, application/robot) and creating an enjoyable checklist. These findings could be used by health professionals to develop student daily checklists that include nutritious foods, as well as weekly planning guides that contain scheduled exercise and dietary goals, and grocery store shopping trips (Strong et al., 2008).

Our findings also show another individual-level psychological determinant that may influence children’s dietary and physical activity habits, which is participants’ perceptions of the impact of healthy eating and physical activity on children’s wellbeing. Students believed in the positive outcomes of eating healthful foods. Most students stated that healthy eating improves growth and healthy organs, provides micronutrients, and makes them feel full and more energized. Others reported positive body image as benefits to eating well. Whereas, mothers emphasized the importance of eating healthfully as a way to prevent health consequences, such as obesity and diabetes. When children exercise, participants perceived physical, social, emotional, and cognitive benefits. Nonetheless, perceived negative outcomes of exercising are physical discomfort and safety concerns. Health professionals may highlight the perceived benefits reported by children as opposed to addressing outcome expectations such as disease risk reduction, which may be more meaningful to adults, as well as reinforcing the perceived benefits of dietary habits and exercising when counseling or teaching

children (Strong et al., 2008). Moreover, our findings give special consideration to social outcome expectations. The fact that participants expect that active children are enrolled in organized sports seems to be an internalized social norm for children and mothers and reflects how the Lebanese society as a whole thinks. This was repeated in almost all the focus groups and interviews where participants directly associated sports with organized activities or sports teams. Interventions must also target changing social norms related to health behaviors (Strong et al., 2008; Okun et al., 2003).

Secondly, observational learning is another fundamental concept of the SCT that has been also echoed in our study findings. The exposure to interpersonal displays and the use of technology determine what actions children can observe and consequently choose to attend. Parents, family members, peers, media, and advertisements determine the health behaviors children are observing. For example, children interviewed tend to consume unhealthy foods when they spend time with social groups that consume non-nutritious foods or when they watch food advertisements on television and social media. As such, children reported feeling motivated to engage in active living when they are surrounded by social groups who usually perform regular activities. Therefore, interpersonal networks and media are observed and imitated most frequently, making family and peer modeling, as well as the positive use of technology well-recognized methods for influencing health behaviors amongst children. Studies conducted in the United States have demonstrated that observational learning including modeling and the use of technology, influence the eating and activity behavior of children and adults (Strong et al., 2008; Winett et al., 2007; Xiong et al., 2019). These methods (e.g., parent modeling, peer education, screen-based activities) were in fact suggested by participants in our study as ways to promote healthy eating and physical activity.

Observational learning cannot lead to behavioral change solely unless the observers' environment is conducive and supportive of the new behavior. Thus, the build environmental structures and features have a strong influence on children's eating and activity habits, which was clearly expressed in children's focus groups and mother's interviews. For instance, children and mothers emphasized the dominance of unhealthy options in the school cafeteria and the absence of facilities and spaces to do physical activity in their community. Media and food advertisements are other examples that influence children's eating habits. One approach to influencing behavior through environmental change in the SCT is facilitation, which is the provision of new structures or resources that enable behaviors or make them easier to perform (Bandura, 2004, Glanz et al., 2008). Facilitation was manifested in the suggestions of children and mothers to promote healthy eating and physical activity. In fact, they advocated for the provision of a variety of affordable nutritious foods coupled with reducing unhealthy foods and making space, facilities, and equipment for physical activity available. These suggestions were clearly expressed in other studies revealing the dominance of unhealthy food options in the community, the absence of facilities and spaces to do physical activity, and media and food advertisements influencing children's eating and activity habits (Ishak et al., 2020; Lubans et al., 2012; Riggs et al., 2013; Strong et al., 2008). Children and mothers in our study also suggested the use of screen-based activities to promote healthy living. Incentive motivation to promote healthy eating is another common form of environmental change that was noted. Providing incentives for buying healthy foods at school through the provision of rewards (e.g., additional points or gifts) would encourage children to purchase healthier options. Consequently,

including sources of environmental support in dietary and physical activity interventions could greatly improve long-term health behaviors (Winett et al., 2007).

Lastly, the SCT emphasizes the human capacity as able to endure long-term behaviors through self-regulation. The interpretation of our findings shows that there are similarities with self-regulation, one of the constructs of the SCT. Self-regulation can be achieved through various ways that were mentioned separately by the study participants. These steps include goal-setting, informative feedback, self-reward, and social support, all of which were reported in other studies as key factors promoting positive health behavioral change (Kosteli et al., 2016; Strong et al., 2008).

1. **Goal-setting.** Long term changes in eating and activity habits are achieved through gradual steps. Children suggested some strategies to reinforce their goal-setting and regulate their healthy intake; students suggested the use of checklists and reminders to choose healthy options. As for physical activity, students coming from a higher socioeconomic background must rely on their own regulatory skills to be physically active, and thus, participate in extracurricular activities, as these activities are not part of their school schedule. However, students from low socioeconomic backgrounds don't have access to this opportunity given their families' financial inability to sign them up for sports teams and provide transportation. So, they have to rely on their own school's physical education classes.
2. **Feedback.** Informative feedback enables children who are struggling with the challenges of leading a healthy lifestyle to adjust their strategies and efforts and to identify problems that need to be solved (Bandura, 2004, Glanz et al., 2008). Participants cited teachers as a common source of feedback that affects eating

and activity habits in children. To maintain self-efficacy and self-regulation, feedback on well done performance should be given continuously and feedback on an unsuccessful performance should be corrective and framed positively.

3. Self-reward. The provision of tangible or intangible rewards was positively seen by children, although, mothers expressed negative attitudes towards tangible rewards. However, one common form of self-reward is the feeling of satisfaction from making progress. This was raised especially in the physical activity section. Thus, at the earliest steps of the self-management process, short-term and frequent nontangible rewards (e.g., congratulation messages and inspirations) may be effective to actively congratulate children for every step they take (Glanz et al., 2008).
4. Enlistment of social support. Self-regulation is further achieved when children find people who encourage their efforts to exert self-control and support the behavior change process (Bandura, 2004; Glanz et al., 2008). Children identified sources of support, notably, parents, family, and friends. Having social support from family and friends encouraged students to eat healthier and be more physically active. Across all socioeconomic backgrounds, socializing was considered a higher daily priority. Thus, interventions that include social groups may be more effective in promoting positive health behavior change than those targeting only children (Bottorff et al., 2020; Strömmer et al., 2020).

Overall, the SCT provides a comprehensive and well-supported conceptual framework for understanding the factors that influence children's behavior and the processes through which learning occurs. Thus, behavior can be changed through a

multilevel intervention and approach that target both individual, interpersonal, and environmental factors to promote healthful eating and regular physical activity among children.

D. Strengths and Limitations

To the best of our knowledge, this is the first study that explores the perspectives and experiences of Lebanese children and their mothers towards healthy eating and active living behaviors. Although our study was conducted in schools within the Beirut capital area, and results may not be transferable to other settings, the research team involved children from different public and private schools with various socioeconomic backgrounds to improve our understanding of the factors that can influence eating and active behaviors of children in our study population. The use of qualitative methods (i.e., focus groups and interviews) provided rich data about the factors that influence the eating and active behaviors of children from the perspectives of the youth and their parents. Also, the inclusion of data from two types of participants ensured the triangulation of data sources, which facilitated the enrichment of the analysis and enhanced the credibility of our findings. In addition, having the same graduate student conduct all the FGDs and interviews ensured consistency in the data collection. The strong training of the team in qualitative data collection and analysis further enhanced the trustworthiness of our findings. Furthermore, the development of the focus group and interview scripts and the interpretation of the study findings were supported by a theoretical framework. This helped guide the discussion with parents and their children and allowed the research team to understand the interlinkages between different factors affecting children's eating habits and physical activity.

Nevertheless, the present study, has few limitations that are also worth considering. First, two methods of recruitment and data collection (i.e., in-person and online focus groups and interviews) were conducted with study participants, due to the unexpected situation of COVID-19 and the school closures during the period of the data collection. First, the research team conducted in-person data collection for participants from one school and then transitioned to the use of phone calls and online platforms to recruit, consent, and collect data from research participants in the remaining two schools. Also, several adjustments were made during data collection to reduce the burden on participants, such as reducing the number of children per online FGD and shortening the duration of the FGDs and interviews. Other disadvantages to using online methods (e.g., phone calls) and platforms (e.g., Zoom and Microsoft Teams) to conduct FGDs and interviews with children and their caregivers were the risk of not detecting all nonverbal cues of participants or the inability to build rapport and connect with more timid participants, compared to one-on-one meetings and encounters. Nevertheless, the research team ensured that the shift to online data collection methods did not affect the quality of the interviews and the engagement of the children during the FGDs. In addition, the use of these online platforms to collect data may, in fact, help reduce the risk of response bias, as participants may be less affected by cues from facial expressions or perceived social desirability from the researcher (e.g., in one-on-one interviews) or other participants (e.g., in a focus group setting) (Musselwhite et al., 2007; Snethen & Broome, 2007). Some of the study participants may also be more forthcoming with responses given the anonymity associated with the virtual data collection methods.

Although our study sample included fewer boys compared to girls, the research team have exerted every effort during the in-person and virtual meetings to probe and get all necessary information regarding the questions raised. It is also worth noting that data saturation was achieved with FGDs with boys faster than girls (3 FGDs with 15 girls versus 2 FGDs with 9 boys), as boys were more likely to express their opinion effectively, accounting for the differences between the number of boys and girls. Besides this limitation, similar patterns emerged during both the in-person and online FGDs and interviews.

CHAPTER V

CONCLUSION AND RECOMMENDATIONS

The study findings highlight the perceptions and experiences of school-aged children and their caregivers (mothers) towards healthy eating habits and active living in the urban setting of Beirut, Lebanon. Several individual, social, and environmental influences were reported by children and their mothers as it pertains to children's eating and activity habits. Individual factors included food preferences and choices, eating out of boredom, rewards or compensations to engage in healthy eating and physical activity, and perceived ability to eat healthily and to participate and succeed in physical activities. Social factors encompassed the influence of parents, siblings, extended family members, and friends. The availability and affordability of healthy foods and spaces, as well as food advertisements, were key environmental factors expressed in our findings. These factors were also supported by recommendations as to why and how to best promote behavioral change among children using the SCT while providing an understanding of the complexity of the health behaviors process.

This study also demonstrates the importance of including both children and parents in the data collection process to obtain a more complete picture of the dynamics involved in children's healthy lifestyles. The similarities and differences found between children's and their mothers' insights affirm the need for interventions that aim at initiating and supporting effective communication between parents and children in order to promote effective health-related strategies (Azar et al., 2020).

Moving forward, this study also provides practicable initiatives that may be used to develop actions aiming at promoting healthy food habits and physical activity, with

the potential for improving children's health and well-being. When designing and implementing forthcoming actions that aim to facilitate healthy lifestyles among children, we suggest that it is important to provide support at multiple levels and using theoretical frameworks, such as the SCT, to promote intrapersonal strategies (e.g., improve self-efficacy, promote the immediate benefits and the way to cope with environmental barriers for desired behaviors). In addition, social strategies can be promoted such as parental education, increasing peer and parental support, and role modelling. Furthermore, school strategies are integral to the adoption and maintenance of healthy eating and lifestyle behaviors by children including the provision of nutrition and physical education (e.g., provide the necessary knowledge, skills, positive support towards dietary and physical activity practices, increasing the availability of healthy food choices while decreasing that of unhealthy foods). The suggested school strategies should include individual and family-based approaches to improve eating and physical activity habits among children, particularly within the COVID-19 situation. Lastly, societal strategies and political decisions are critical to prevent obesity and promote healthy lifestyle in children. These strategies and decisions include easily accessible and affordable facilities that encourage healthy foods and physical activity and reducing the prices or value-added taxes on healthy food options. Existing programs and policies in Lebanon strive to promote a healthy lifestyle among school-aged children. For example, Ajyal Salima-Healthy Kids is a program adopted by the Ministry of Education and Higher Education in Lebanon to promote healthy eating and physical activity among schoolchildren (Habib-Mourad et al., 2020). In addition, a national school canteen policy (1386/ 2012/أ) defines the specifications on the food and beverages in Lebanese schools' canteen (Ministerial Decision, 2012). However, this policy is not appropriately

implemented across all schools in Lebanon (Saleh et al., 2012). Thus, the generated knowledge of the present study and suggested initiatives can be used as a platform to inform the stakeholders and policymakers on the key aspects to be addressed in the development of effective evidence-based and/or school-based programs and interventions to address obesity in this age group. In fact, this study sheds the light on the need for coordinated multilevel efforts to enhance school nutrition programs and policies in order to improve programs and strengthen existing policies to ensure adequate environmental and structural factors that are conducive and supportive of adequate eating and lifestyle behaviors.

Finally, a unique contribution of this study is that a participatory approach is a key factor in the planning and development of a program to promote children's health and wellbeing. Future studies can explore the effectiveness of school and community-based interventions that are not only evidence-based and grounded in sound behavioral change theories, but that also take into consideration locally driven and children-centered strategies and solutions. Such strategies that engage children and parents may increase the acceptability of children to health promotion strategies and programs and may increase their sustainability within their home and school environments.

APPENDIX I

INVITATION FOR POTENTIAL SCHOOLS

A. In-person recruitment

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17 JAN 2020

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Appendixes

Appendix I: Invitation Letter to Potential Schools

E-mail Invitation to Potential Schools to Participate in the Research

The Department of Nutrition and Food Sciences at the American University of Beirut (AUB) invites your school to participate in research project entitled “**Exploring Children and Parental Perspectives towards Healthy Eating and Active Living in Lebanon: A Mixed Method Study**”.

This research project is part of the thesis of a public health nutrition graduate student at AUB, and under the supervision of Dr. Lamis Jomaa, an assistant professor in the Department of Nutrition and Food Sciences at AUB.

The purpose of this research project is to examine the perceptions and experiences of children aged 10 to 11 years (grades 5 and 6) and their parents (primarily mothers) towards healthy eating and physical activity. Findings from this study will be shared with your school and will help inform school and home-based nutrition programs and interventions that can help improve the dietary intake and nutritional status of children and reduce their risk of excess weight gain and obesity.

Your school will be one of three schools that will be recruited as sites to conduct this research study.

Below is a summary of what the research project will entail:

1. The research team will invite students from grades 5 and 6 (aged 10 to 11 years old) to participate in the study through announcements in classrooms followed by the distribution of a package for children to take home. Each package would include: i) an invitation letter, ii) mother permission/consent form, and iii) a self-administered questionnaire for mother (in sealed envelope).
2. After obtaining mothers' consent, the research team will ask students' from grades 5 and 6 to complete: a) a short self-administered questionnaire during class which will take about 10-15 minutes to complete, and b) a subset of children will be invited to participate in one focus group discussion that would take place in a private place within the school premises during a recess or any other possible time, after coordination with the school administration. A total of 3 focus groups will be conducted per school. Duration for each focus group will be approximately 45 minutes.
3. Interviews with five mothers of children enrolled in this project will be conducted in the school premise, or at a place of their convenience.

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Kindly note that the research team will coordinate with the school administration and academic supervisors for grades 5 and 6 to minimize interference in the regular school and class schedule.

Participation of children and their mothers is completely on voluntary basis and data confidentiality and privacy will be respected and secured as part of the research protocol.

Additional incentives will be offered to children and mothers including healthy snacks and refreshments during focus groups. Mothers participating in the interviews will be also provided with age- and culturally- appropriate nutrition tips and information on healthy eating and lifestyle behaviors for their children.

If your school is interested to participate in this research, we would like to schedule a meeting with you at your earliest convenience to provide you with additional details regarding this project.

Looking forward to hearing from you,

Sincerely,

إرسال دعوة للمشاركة في البحث إلى مدارس (عبر البريد الإلكتروني)

يدعوكم قسم علوم التغذية في الجامعة الأمريكية في بيروت للمشاركة في مشروع بحثي بعنوان "استكشاف مفاهيم وتجارب الأطفال والأهل تجاه الأكل الصحي والنشاط البدني في لبنان: دراسة بطرق متنوعة".

بعد هذا المشروع البحثي جزءاً من أطروحة لطلبة في الدراسات العليا للتغذية في الصحة العامة في الجامعة الأمريكية في بيروت، وتحت إشراف الدكتورة لميس جمعة، أستاذ مساعد في قسم علوم التغذية في الجامعة الأمريكية في بيروت.

الهدف من هذا المشروع البحثي هو دراسة تصورات وتجارب الطلاب الذين تتراوح أعمارهم بين 10 و 11 سنة (الصفين 5 و 6) وأولياء أمورهم (الأمهات بشكل خاص) نحو الأكل الصحي والنشاط البدني. ستتم مشاركة النتائج التي توصلت إليها هذه الدراسة مع مدرستك، وستساعد في إعداد برامج التغذية المدرسية والمنزلية التي يمكن أن تساعد في تحسين نمط الغذاء، وبخاصة لدى الأطفال وتقليل خطر زيادة الوزن والبدانة.

ستكون مدرستك واحدة من ثلاث مدارس سيتم تعيينها كمواقع لإجراء هذه الدراسة البحثية.

فيما يلي ملخص لما سيتضمنه مشروع البحث:

1. سيقوم فريق البحث بدعوة الطلاب من الصفوف 5 و 6 (الذين تتراوح أعمارهم بين 10 و 11 سنة) للمشاركة في الدراسة من خلال إعلانات موجهة لهذه الصفوف، تليها توزيع ملف يأخذه الطلاب إلى المنزل. سيشمل كل ملف: (1) خطاب دعوة، (2) نموذج إذن / موافقة الأم، (3) استبيان ذاتي للآم (في ظرف مختوم).
2. بعد الحصول على موافقة الأمهات، سيطلب فريق البحث من الطلاب من الصفوف 5 و 6 إكمال: أ) استبيان قصير ذاتي يميز خلال الحصّة الذي سيستغرق من 10 إلى 15 دقيقة لإكماله ب) مجموعة من الطلاب سيدعون للمشاركة في مناقشة جماعية في مكان محدد داخل مبنى المدرسة، خلال فترة الاستراحة أو في أي

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وقت آخر، بعد التنسيق مع إدارة المدرسة. سيتم إجراء ثلاث مناقشات جماعية في كل مدرسة، مدة كل منها حوالي 45 دقيقة.

3. ستتم المقابلات مع خمسة أمهات لأطفال مسجلين في هذا المشروع، في مبنى المدرسة أو في مكان يناسبهن. ما يجدر الإشارة إليه أن فريق البحث سوف ينسق مع الإدارة المدرسية والمشرفين الأكاديميين للصفين 5 و 6 لعدم التأثير على وقت الحصّة الدراسية .

تتم مشاركة الطلاب وأمهاتهم تمامًا على أساس طوعي، وسيتم احترام سرية البيانات وخصوصيتها كجزء من بروتوكول البحث.

سيتم تقديم حوافز إضافية للطلاب والأمهات خلال المناقشات الجماعية، بما في ذلك الوجبات الخفيفة الصحية والمرطبات كتعويض عن الوقت الضائع. كما سيتم تزويد الأمهات المشاركات في المقابلات بنصائح ومعلومات غذائية مناسبة للفئة العمرية، ومستوى الثقافة، عن سلوكيات الأكل الصحي ونمط الحياة للأطفال.

إذا كانت مدرستكم مهتمة بالمشاركة في هذا البحث، فإننا نرغب في تحديد موعد للاجتماع في أقرب وقت ممكن لتزويدكم بتفاصيل إضافية فيما يتعلق بهذا المشروع.

بانتظار ردكم

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American University of Beirut*

23 JAN 2020

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تفضلوا بقبول فائق الاحترام والتقدير

B. Online recruitment

Invitation Letter to Potential Schools

E-mail Invitation to Potential Schools to Participate in Research

The Department of Nutrition and Food Sciences at the American University of Beirut (AUB) invites your school to participate in research project entitled “**Exploring Children and Parental Perspectives towards Healthy Eating and Active Living in Lebanon: A Mixed Method Study**”.

This research project is part of the thesis of a public health nutrition graduate student at AUB, and under the supervision of Dr. Lamis Jomaa, an assistant professor in the Department of Nutrition and Food Sciences at AUB.

The purpose of this research project is to examine the perceptions and experiences of children aged 10 to 11 years (grades 5 and 6) and their parents (primarily mothers) towards healthy eating and physical activity. Findings from this study will be shared with your school and will help inform school and home-based nutrition programs and interventions that can help improve the dietary intake and nutritional status of children and reduce their risk of excess weight gain and obesity.

Your school will be one of three schools that will be recruited as sites to conduct this research study.

Below is a summary of what the research project will entail:

1. To avoid undue influence on participants, a staff from a non-managerial/high administrative position in the school who is designated to send out regular email communications with the parents in all school-related matters, is advised to send the invitation letter (attached in this email) to the parents of students from grades 5 and 6. Those that are interested will contact the research team through WhatsApp or Email, as indicated in the invitation.
2. After obtaining mothers’ consent, the research team will ask students’ from grades 5 and 6 to participate in an online focus group discussion through Zoom or any online platforms of their choice. A total of 3 focus groups will be conducted per school. Duration for each focus group will be approximately 30 minutes.
3. Interviews with five mothers of children enrolled in this project will be conducted online or phone call, at a time of their convenience.

Participation of children and their mothers is completely on voluntary basis and data confidentiality and privacy will be respected and secured as part of the research protocol.

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05 MAY 2020

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Mothers participating in the interviews will be provided with age- and culturally- appropriate nutrition tips and information on healthy eating and lifestyle behaviors for their children.

If your school is interested to participate in this research, we would like to schedule an online meeting with you at your earliest convenience for further information.

Looking forward to hearing from you,

Sincerely,

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American University of Beirut*


28 MAY 2020

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APPENDIX II

INVITATION FOR MOTHERS

A. In-person recruitment



1. Do you have a child aged 10-11 years old?

2. Are you interested to explore the perceptions and experiences of your child towards healthy eating and physical activity?

You and your child are invited to participate in a research study entitled "Exploring Children and Parental Perspectives towards Healthy Eating and Active Living in Lebanon: A Mixed Method Study"

The purpose of the study is to examine the perceptions and experiences of children aged 10 to 11 years and their mothers towards healthy eating and physical activity. Results from this study can help inform school and home-based nutrition programs and interventions that can improve the dietary intake and nutritional status of children and reduce their risk of excess weight gain and obesity.

• Mothers:

You are invited to complete a short questionnaire on your child's eating and lifestyle habits (the questionnaire is enclosed in the envelope). If interested, you are also invited to participate in one face-to-face interview to explore the perceptions and experiences of children towards healthy eating and regular physical activity.

• Child:

Upon your permission, we will also ask your child to complete a short questionnaire in class on his/her eating and lifestyle habits. In addition, your child will be invited to take part in one focus group discussion in the presence of peers of his/her age that will take place at the school premises. This focus group discussion will help further explore their eating and lifestyle habits.

If interested, kindly leave your name and contact information below so we can contact you. Also, please read closely the enclosed consent form for further details regarding this study.

Full Name :

*Institutional Review Board
American University of Beirut*

Phone Number :

Your participation is highly appreciated! 😊

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١. هل عمر طفلك يتراوح بين ١٠ و ١١ سنة؟

٢. هل أنت مهتم باستكشاف تصورات
وتجارب طفلك تجاه الأكل الصحي
والنشاط البدني؟

أدعوك أنت و طفلك للمشاركة في دراسة بحثية بعنوان "استكشاف مفاهيم وتجارب الأطفال والأهل تجاه الأكل الصحي والنشاط البدني في لبنان: دراسة بطرق متنوعة".

الهدف من هذا البحث هو دراسة تصورات وتجارب الأطفال الذين تتراوح أعمارهم بين ١٠ و ١١ سنة وأمهاتهم حول الأكل الصحي والنشاط البدني. نتائج هذه الدراسة يمكن أن تساعد في إعلام برامج وتدخلات التغذية في المدرسة والمنزل، التي يمكن أن تحسّن نظام الغذائي والحالة الغذائية للأطفال وتُخفف خطر زيادة الوزن والبدانة.

* **للأمهات:**

نمت دعوتك لاستكمال استبيان قصير حول عادات الأكل وأسلوب حياة ولذكي (بم تضمين الاستبيان في هذه الحزمة). إذا كنت مهتمّة، فندعوك أيضاً للمشاركة في مقابلة لاستكشاف تصورات وتجارب الأولاد تجاه الأكل الصحي والنشاط البدني المنظم.

* **للطفال:**

بناءً على إدراكك، سنطلب أيضاً من طفلك إكمال استبيان قصير في الصف عن عاداته حول تناول الطعام ونمط الحياة. بالإضافة إلى ذلك، ستتم دعوة طفلك للمشاركة في مناقشة جماعية بحضور زملائه من عمره في مبنى المدرسة. هذه المناقشة الجماعية تساعدك على اكتشاف عادات الأكل ونمط الحياة لديهم.

إذا كنت مهتمّة، فيرجى ترك اسمك ومعلومات الاتصال الخاصة بكى أدناه حتى نتمكن من الاتصال بكى. أيضاً، يرجى قراءة الإستمارة للحصول على مزيد من التفاصيل بشأن هذه الدراسة.

رقم الهاتف:

*Institutional Review Board
American University of Beirut*

الاسم الكامل:

٢٣ JAN 2020

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B. Online recruitment

Invitation for Mothers to Participate in the Research Study



1. Do you have a child aged 10-11 years old?

2. Are you interested to explore the perceptions and experiences of your child towards healthy eating and physical activity?

The Department of Nutrition and Food Sciences at the American University of Beirut (AUB) invites you and your child to participate in a research study entitled “Exploring Children and Parental Perspectives towards Healthy Eating and Active Living in Lebanon: A Mixed Method Study”

The purpose of the study is to examine the perceptions and experiences of children aged 10 to 11 years and their mothers towards healthy eating and physical activity. Results from this study can help inform school and home-based nutrition programs and interventions that can improve the dietary intake and nutritional status of children and reduce their risk of excess weight gain and obesity.

- **Mothers:**

You are invited to participate in a phone-call interview (15 minutes) to explore your child's eating and lifestyle habits.

- **Child:**

Your child is also invited to take part in one online focus group discussion (approx. 30 minutes), using Zoom or any other platform of your choice, in the presence of peers of his/her age. This focus group discussion will help further explore their eating and lifestyle habits.

If interested you and / or your child is interested to participate, kindly contact on WhatsApp or by Email:

Myriam Dagher, Public Health Nutrition, MSc – American University of Beirut
Tel: 961-76102802
E-mail: mkd06@mail.aub.edu

Your participation is highly appreciated! 😊

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9 8 MAY 2020

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١. هل عمر طفلك يتراوح بين ١٠ و ١١ سنة؟

٢. هل أنت مهتم باستكشاف تصورات وتجارب طفلك تجاه الأكل الصحي والنشاط البدني؟

قسم التغذية وعلوم الغذاء في الجامعة الأمريكية في بيروت تدعوك أنت و طفلك للمشاركة في دراسة بحثية بعنوان "استكشاف مفاهيم وتجارب الأطفال والأهل تجاه الأكل الصحي والنشاط البدني في لبنان: دراسة بطرق متنوعة".

الهدف من هذا البحث هو دراسة تصورات وتجارب الأطفال الذين تتراوح أعمارهم بين ١٠ و ١١ سنة وأمهم حول الأكل الصحي والنشاط البدني. نتائج هذه الدراسة يمكن أن تساعد في إعلام برامج وتدخلات التغذية في المدرسة والمنزل، التي يمكن أن تحسن نظام الغذائي والحالة الغذائية للأطفال ولتخفيف خطر زيادة الوزن والبدانة.

• للأمهات:

تمت دعوتك للمشاركة في مقابلة عبر مكالمة هاتفية (15 دقيقة) حول عادات الأكل وأسلوب حياة ولدكي.

• لطفلك:

سنطلب أيضاً من طفلك للمشاركة في مناقشة جماعية (حوالي 30 دقيقة) ، وذلك باستخدام Zoom أو أي منصة أخرى من اختيارك ، بحضور زملاء من عمره. هذه المناقشة الجماعية تساعدك على اكتشاف عادات الأكل ونمط الحياة لديهم.

إذا كنت مهتمة و/ أو طفلك مهتماً بالمشاركة، يرجى الاتصال على WhatsApp أو عن طريق البريد الإلكتروني (Email) :

ميريام داغر

تغذية الصحة العامة، ماجستير – الجامعة الأمريكية في بيروت

هاتف: 961-76102802

البريد الإلكتروني: mkd06@mail.aub.edu

مشاركتم هي محل تقدير كبير! 😊

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APPENDIX III

MOTHER PERMISSION/CONSENT FORM

A. In-person recruitment



Permission for Child and Mothers to Participate in Research / Consent Form

Study Title: Exploring Children and Parental Perspectives towards Healthy Eating and Active Living in Lebanon: A Mixed Method Study

Principal Investigator: Dr. Lamis Jomaa, American University of Beirut

Graduate Student: Myriam Dagher

You and your child are invited to participate in a research study conducted by the Department of Nutrition and Food Sciences at the American University of Beirut. It is important that you read the information below carefully before agreeing that you and your child participate in the study and to understand the purpose, actions, benefits and risks related to you and your child's participation in this project. Please feel free to ask any questions if you need any clarification about what is stated in this form or if you need any additional information. You will be provided with this consent form, which includes the project information as well as contact information of those carrying out the study for your future reference.

This is a permission form for your child/child for whom you are legal guardian to participate in a research study. It contains important information about this study and what to expect if you decide to permit your child/child for whom you are legal guardian to participate.

You and your child participation is voluntary. If you and your child decide to participate, you will be asked to sign this form and will receive a copy of the form.

Purpose

More and more children and teenagers are gaining excess weight worldwide including Lebanon. Gaining excess weight is bad for health and is likely to increase the risk of some diseases, affect growth, health and academic performance of children. We would like to find out what are the reasons affecting the excess weight gain among children and identify effective ways to help improving healthy eating and regular physical activity for Lebanese children. In order to do that, we need to examine the perceptions and experiences of children and their parents towards healthy eating and regular physical activity. Also, we need to understand what are the challenges and mo-

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tivators behind that. Results from this study can help inform school and home-based nutrition programs and interventions that can improve the dietary intake and nutritional status of children and to curb the rising rates of obesity among children.

Eligibility criteria include:

1. Lebanese children aged 10 to 11 years old.
2. Generally healthy children and their mothers: absence of any disease that may impair growth, absence of chronic illness, inborn errors of metabolism, physical disabilities or malformations that would interfere with eating patterns and body composition.

Project Procedures and Duration

We will ask you and your child each to complete separately a short self-administered questionnaire. We will also conduct with you a face-to-face interview, and one focus group discussion with your child. We would like to tape record your interview and your child focus group discussion to make sure that we remember accurately all the information that will be provided. Only the aggregated data from the interviews (which will have no identifiers) will be shared. You may still participate in the interview if you do not want to be taped.

Below is a description of what will happen if you decide to participate in the study and allow your 10 to 11-year-old child to also take part in this study:

You (mother or legal guardian in case mother is absent):

- We will ask you to complete a short self-administered questionnaire in a private place at home, which includes questions related to your educational level, employment status, number of children and number of household members, and other sociodemographic characteristics of your household. In addition, we will ask for your self-reported weight and height and that of your child as well as his/her eating habits and physical activity behaviors. We assure you that this information will be kept strictly confidential. The self-administered questionnaire will take about 10-15 minutes to complete.
- We will also ask you to participate in an individual interview and will ask you some questions about your opinion toward the challenges and motivators of your child when following healthy eating pattern and regular physical activities along with questions on future program ideas for improving healthy lifestyle among children. We assure you that this information will be kept strictly confidential. Your child can also be present during the interview and is allowed to assist you in answering the questions. You will be interviewed at school in a private place or in another location of your convenience. The interview will require around 30 to 45 minutes of your time.

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Your participating child (age 10-11 years):

- We will ask your child to complete a short self-administered questionnaire during class that includes questions related to their perceived weight and height as well as eating habits and lifestyle behaviors. We assure you that this information will be kept strictly confidential. The graduate research student will assist your child as they complete the short questionnaire in class, which will take about 10-15 minutes to complete.
- Your child will also participate in a group discussion with approximately 8 to 10 other children aged 10 to 11 years old in his/her school. Your child will be asked questions about his/her perceptions and experiences towards healthy eating and regular physical activities and will have the freedom to express his/her opinions on how they can be assisted to have better and healthier dietary and lifestyle choices. Also, picture cards will be used to assist the children in pointing out appropriate eating times, activity and occasions (six eating times: breakfast, morning break, lunch, afternoon, dinner and evening and six occasions: home, school, party, sport, being with friends and TV/computer). The group discussion will last for approximately 45 to 60 minutes and will take place in a private place in your child's school in coordination with the school administration.

Risks, Benefits

There are no risks resulting from your participation or that of your child in this study. You and your child can choose not to answer any question if you wish. Transportation to the school for conducting the in-depth interview will not be reimbursed.

At the end of your and your child participation in the study, you will receive nutrition tips and information on healthy eating and living. Upon the completion of the interview and questionnaire, the findings of the study can help us identify a set of recommendations to assist in building school, home and community-based interventions that can help improve the eating and lifestyle behaviors of children in an attempt to curb the rising rates of obesity.

Confidentiality

You and your child may leave the study at any time. If you decide to stop your and your child's participation in the study, there will be no penalty to you, or to your child and you will not lose any benefits to which you are otherwise entitled. Your decision will have no impact on your child's grades and academic year and will not affect future relationship, or that of your child, with the school or with AUB or AUB Medical Center in any possible way.

The interview tapes will be kept in a locked file drawer in the university. They will only be used by the research team. You and your child may still participate in the interviews if you do not want to be taped. In this case, the recorder will be paused whenever you or your child express your opinions.

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In addition, the notes taken during your child's focus group discussion will be compiled without any personal identifiers. All data will be represented as aggregate data and will have no identifiers that could be linked to your personal responses. Only codes will be used on questionnaires and notes taken from the focus group to link the data for you and your child. Phone numbers will be destroyed upon the completion of data collection. Opinions shared during the discussions will be kept confidential and used only as collective information. Findings from this study will be used for research purposes only.

All completed questionnaires and the documentation of the interviews will be stored in a locked cabinet in the principal investigator's office at AUB. Electronic versions of the data will also be secured and locked by a password. Records will be monitored and may be audited by the IRB, however, measures will be taken to make sure confidentiality is not being violated.

Incentives

Food and refreshments will be offered for all participants during your child's focus group discussion.

As a thank you for participating in the interview, we will be provided with age- and culturally-appropriate nutrition tips and information on healthy eating for their children. upon completion of the study.

The Social & Behavioral Institutional Review Board responsible for human subjects research at AUB has reviewed this research project and found it to be acceptable, according to applicable Lebanese and U.S. federal regulations and AUB policies designed to protect the rights and welfare of participants in research.

Please note that we will make sure that your interview and your child's focus group will take place at a comfortable, convenient and private setting. The interviews and discussions will be audio-taped to make sure that the research team remember accurately all the information you provide. We might be quoting you in the texts, reports and articles we produce without attaching any name or other identifiers and all your quotations will be kept anonymous.

Records will be monitored and may be audited by the IRB without violating confidentiality.

We would like to obtain your agreement in:

(Kindly check all the options below you give consent for)

- Participating*
- Audiotaping*
- Quoting*

You will be given **one week** to provide us with your consent in case you and/or your child are willing to participate in the study.

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A copy of this consent form will be left with you and if you have any questions or concerns about the research, you may contact:

Contacts and Questions: For questions, concerns, or complaints about the study you may contact Dr. Lamis Jomaa, Faculty of Agricultural & Food Sciences – AUB
Tel: 961-1-350000 (Ext 4544) E-mail: lj18@aub.edu.lb

Myriam Dagher, Public Health Nutrition, MSc – AUB
Tel: 961-76102802 E-mail: mkd06@mail.aub.edu

For questions about your child's rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact AUB Social & Behavioral Science Institutional Review Board – AUB
Tel: 961 -1-350000 (Ext 5445) E-mail: irb@aub.edu.lb

Kindly check next to the items you want to give permission for your child:

➤ **For Child:**

I have read (or someone has read to me) this form and I am aware that I am being asked to give permission for my minor child (or child under my guardianship) to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction.

I voluntarily agree to give permission for my child under my guardianship to participate in:

- Complete short questionnaire in class
 The focus group discussion

I am not giving up any legal rights by signing this form. I will be given a copy of this form.

Printed name of subject

Printed name of person authorized to give subject/participant (when applicable)

Signature of person authorized to give permission for minor permission for minor subject/participant

Relationship to the subject

Date and Time AM/PM

➤ **For Mother / Legal Guardian:**

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I have read and understood the above information. I voluntarily agree to participate in the study. I give you permission to:

- Complete short questionnaire at home
- Participate in one in-depth interview

I am not giving up any legal rights by signing this form. I will be given a copy of this form.

Participant Name

Participant Signature

Phone Number

Note: If you consented on participating in the interview, the research team will follow-up with you through a phone call to provide you with additional details regarding the potential dates of your interview.

Investigator/Research Staff

I have explained the research to the participants before requesting the signature(s) above. There are no blanks in this document. A copy of this form will be given to the parent/legal guardian of the child participant/subject.

Printed name of person obtaining permission

Signature of person obtaining permission
*Institutional Review Board
American University of Beirut*

Date and Time AM/PM

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إذن للطفل والأمهات للمشاركة في البحث

إسم البحث: استكشاف مفاهيم وتجارب الأطفال والأهل تجاه الأكل الصحي والنشاط البدني في لبنان: دراسة بطرق متنوعة.

الباحث الرئيسي: الدكتورة لميس جمعة - قسم التغذية وعلوم الغذاء، الجامعة الأميركية في بيروت.

الطالبة: ميريالم داغر - قسم التغذية وعلوم الغذاء

أنت وطفلك مدعوان للمشاركة في دراسة بحثية تجريها قسم التغذية وعلوم الغذاء في الجامعة الأميركية في بيروت. من المهم أن نقرأ المعلومات المذكورة أدناه بعناية قبل الموافقة على مشاركتك ومشاركة طفلك في الدراسة، من أجل فهم الأهداف، الإجراءات، الفوائد والأخطار المرتبطة بمشاركتك أنت وطفلك بهذا المشروع. لا تتردد في طرح الأسئلة إذا كنت بحاجة إلى توضيح حول ما سيورد في هذه الإستمارة أو إذا كنت بحاجة إلى أي معلومات إضافية. سوف تعطيك هذا الإستمارة التي تتضمن معلومات عن المشروع وكذلك معلومات عن كيف الاتصال مع الفريق الذي يجري الدراسة للرجوع إليها في المستقبل.

هذا نموذج إذن لطفلك/طفلك الذي أنت الوصي القانوني عليه للمشاركة في دراسة بحثية. هذا نموذج يحتوي على معلومات مهمة حول هذه الدراسة وماذا يتوقع إذا قررت السماح لطفلك / طفلك الذي هو الوصي القانوني للمشاركة. مشاركتك ومشاركة طفلك تطوعية. إذا قررت أنت وطفلك المشاركة، فسيتطلب منك توقيع هذا الإستمارة وستتلقى نسخة عن هذا الإستمارة.

الهدف:

يتزايد عدد الأطفال والمراهقين الذين يزداد وزنهم في جميع أنحاء العالم بما في ذلك لبنان. زيادة الوزن يضر الصحة ومن المرجح أن يزيد من خطر الإصابة ببعض الأمراض، ويؤثر على النمو والصحة والأداء الأكاديمي للأطفال. نود أن نكتشف ما هي الأسباب التي تؤثر على زيادة الوزن بين الأطفال، وتحديد طرق فعالة للمساعدة في تحسين الأكل الصحي والنشاط البدني المنتظم للأطفال اللبنانيين. من أجل القيام بذلك، نحن بحاجة إلى دراسة تصورات وتجارب الأطفال وأهاليهم تجاه الأكل الصحي والنشاط البدني المنتظم. أيضا، نحن بحاجة إلى فهم ما هي التحديات والذوابع وراء ذلك. نتأج هذه الدراسة سوف تساعد في إعلام برامج وتدخلات التغذية في المدرسة والمنزل التي يمكن أن تحسن التناول الغذائي والوضع الغذائي للأطفال والحد من ارتفاع معدلات بدانة الأطفال.

معايير الأهلية تشمل:

١. أطفال لبنانيون يتراوح أعمارهم بين ١٠ و ١١ سنة.
٢. صحة الأطفال وأمهم العامة جيدة: عدم وجود أي مرض يآثر على النمو، وعدم وجود امراض مزمنة، عدم وجود امراض وراثية، والتشوهات الجسدية التي قد تتداخل مع أنماط الأكل وتكوين الجسم.

وصف المشروع ومدته:

سنطلب منك أنت وطفلك/طفلك إكمال استبيان قصير مُدار ذاتيًا بشكل منفصل. أيضا، سيتم مقابلاتك وإجراء مناقشة جماعية مع طفلك/طفلك. نود أن نسج مقابلك ومناقشة مجموعة طفلك للتأكد من أننا نتذكر بدقة جميع المعلومات التي سيتم تقديمها. سيتم مشاركة البيانات المجتمعة فقط من المقابلات (التي لن تحتوي على معرفات). لا يزال بإمكانك المشاركة في المقابلة إذا كنت لا ترغب في التسجيل.

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فيما يلي، سوف يتم شرح لما سيجد إذا قررت المشاركة في الدراسة وإذا سمحت لطفلك/طفلتك البالغ(ة) من العمر ١٠-١١ سنة بالمشاركة في الدراسة.

أنت (الأم أو الوصي القانوني في حالة غياب الأم):

- سنطلب منك إكمال استبيان قصير مُدار ذاتياً قبل المقابلة في مكان خاص، يتضمن أسئلة تتعلق بمستواك التعليمي، حالة عملك، عدد الأطفال وعدد أفراد الأسرة، وغيرها من الخصائص الاجتماعية والديموغرافية لعائلتك. بالإضافة إلى ذلك، سوف نطلب وزنك وطولك المبلغ عنها ذاتياً وعن وزن طفلك وكذلك عاداته الغذائية وسلوكيات نشاطه البدني. نؤكد لك أن المعلومات التي ستوفرينها ستبقى في غاية السرية. سوف تستغرق إكمال الاستبيان القصير مُدار ذاتياً حوالي ١٠-١٥ دقيقة لإكماله.

- سنُطرح عليك بعض الأسئلة بشكل فردي، وتدور هذه الأسئلة حول رأيك تجاه التحديات والمحفظات لطفلك عند اتباع نمط أكل صحي وأنشطة بدنية منتظمة بالإضافة إلى أسئلة حول أفكار برنامج في المستقبل لتحسين نمط حياة صحي للأطفال. نؤكد لك أن المعلومات التي ستوفرينها ستبقى في غاية السرية. يمكن أن يكون طفلك حاضر أثناء المقابلة ويسمح له بمساعدتك في الإجابة على الأسئلة. ستتم مقابلتك في المدرسة في مكان يحافظ على خصوصيتك أو في مكان آخر يناسبك. سوف تستغرق المقابلة حوالي ٤٥-٣٠ دقيقة من وقتك.

طفلك المشارك (عمر ١٠-١١ سنة):

- سنطلب من طفلك إكمال استبيان قصير مُدار ذاتياً خلال وقت الصف، يتضمن أسئلة تتعلق بوزنه وطوله المتصورين بالإضافة إلى عادات أكله وسلوكيات نمط حياته. نؤكد لك أن المعلومات التي ستوفر ستبقى في غاية السرية. سيقوم طالب أبحاث الدراسات العليا بمساعدة طفلك عند إكمال الاستبيان القصير في الصف، والذي سوف تستغرق استكمالته حوالي ١٠-١٥ دقيقة.

- سيشارك أيضاً طفلك في مناقشة جماعية مع حوالي ٨ إلى ١٠ أطفال آخرين من مدرسته تتراوح أعمارهم بين ١١-١٠ عاماً. سوف يُطرح على طفلك أسئلة حول تصوراته وتجاربه تجاه الأكل الصحي والأنشطة البدنية المنتظمة وسيكون له الحرية في التعبير عن آرائه حول كيفية مساعدته للحصول على خيارات غذائية وأسلوب حياة أفضل وأكثر صحي. أيضاً، سيتم استخدام بطاقات الصور لمساعدة الأطفال في الإشارة إلى أوقات الأكل المناسبة والأنشطة المناسبة (سنة أوقات تناول الطعام: الإفطار، استراحة الصباح، الغداء، بعد الظهر، العشاء والمساء وستة مناسبات: المنزل، المدرسة، الحفلة، الرياضة، وجوده مع الأصدقاء والتلفزيون / الكمبيوتر). سوف تستغرق المناقشة الجماعية حوالي ٤٥-٦٠ دقيقة تقريباً وستجري في مكان في المدرسة يحافظ على خصوصيات طفلك بالتنسيق مع إدارة المدرسة.

المخاطر والفوائد

ليس هناك مخاطر ناتجة عن مشاركتك ومشاركة طفلك في هذه الدراسة. بإمكانكما أن تختاران عدم الإجابة عن أي سؤال. في نهاية مشاركتك ومشاركة طفلك في البحث، ستلقى نصائح ومعلومات حول التغذية أو المعيشة الصحية. لن يتم تعويض النقل إلى المدرسة لإجراء المقابلة المتعمقة. عند الانتهاء من المقابلة ومن الاستبيان، نتائج الدراسة سوف تساعدنا في تحديد مجموعة من التوصيات لبناء التدخلات المدرسية والمجتمعية التي يمكن أن تساعد الأطفال في تحسين سلوكيات الأكل ونمط الحياة و لحد ارتفاع معدلات البدانة.

السيّرة

يحق لك ولطفلك التوقف عن المشاركة في هذه الدراسة أي وقت. إذا قررت توقف المشارك ومشاركة طفلك في الدراسة، فلن تفرض عليك أو على طفلك أي عقوبة ولن تفقد أي مزايا يحق لك الحصول عليه. قرارك لن يكون له أي تأثير على درجات

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طفلك والسنة الدراسية و سوف لا يؤثر بأي شكل من الأشكال على طفلك وعلاقتك بالمدرسة أو بالجامعة الأميركية في بيروت أوفي المركز الطبي في الجامعة الأميركية في بيروت.

سيتم الاحتفاظ بشرائط المقابلة في ملفات مغلق في الجامعة. سيتم استخدامها فقط من قبل فريق البحث. لا يزال بإمكانك أنت وطفلك المشاركة في المقابلات إذا كنت لا ترغب في التسجيل. في هذه الحالة، سيتم إيقاف المسجل مؤقتًا عندما تعبر أنت أو طفلك عن أرائكم.

بالإضافة إلى ذلك، سيتم تجميع الملاحظات التي سيتم تدوينها أثناء المناقشة الجماعية الخاصة بطفلك بدون أي معرفات شخصية. سيتم تمثيل جميع البيانات كبيانات مجمعة ولن تحتوي على معرفات يمكن ربطها برؤدك الشخصية. سيتم استخدام الرموز فقط في الاستبيانات والملاحظات المأخوذة من المجموعة المركزة لربط البيانات لك ولطفلك. سيتم تدمير أرقام الهواتف عند الانتهاء من جمع البيانات. سيتم الحفاظ على سرية الآراء التي تمت مشاركتها أثناء المناقشات واستخدامها فقط كمعلومات جماعية. سيتم استخدام نتائج هذه الدراسة لأغراض البحث فقط.

سيتم تخزين جميع الاستبيانات المكتملة ووثائق المقابلات في خزانة مغلقة في مكتب الباحث الرئيسي في الجامعة الأميركية في بيروت. سيتم أيضًا تأمين الإصدارات الإلكترونية للبيانات وتأمينها بكلمة مرور. سيتم مراقبة السجلات وقد يتم تدقيقها من قبل اللجنة الأخلاقيات للعلوم الاجتماعية والسلوكية، ومع ذلك، سيتم اتخاذ تدابير للتأكد من عدم انتهاك السرية.

حوافز

سيتم تقديم الطعام والمرطبات لجميع المشاركين خلال مقابلتك والمناقشة الجماعية لطفلك. نشكر مشاركتك في المقابلة، سيتم تزويدك أيضًا بنصائح ومعلومات غذائية مناسبة للعمر والثقافة حول الغذاء والمعيشة الصحية عند انتهاء الدراسة.

لجنة الأخلاقيات للعلوم الاجتماعية والسلوكية في الجامعة الأميركية في بيروت قد راجعت هذا المشروع البحثي ووجدت أنه مقبول، وفقًا للوائح الفيدرالية اللبنانية والأمريكية وسياسات الجامعة الأميركية في بيروت التي تهدف إلى حماية حقوق ورفاهية المشاركين في البحث.

نود أن نشير إلى أن مقابلتك والنقاش الجماعي لطفلك سيتمون في مكان مناسب، مريح ويحافظ على السرية. سيتم تسجيل المقابلات والمناقشات الصوتية للتأكد من أن فريق البحث يتذكر بدقة جميع المعلومات التي ستتقدم. يمكن أن نلجأ إلى الاستعانة بأقوالكم في النصوص، التقارير أو المقالات التي سنقوم بإصدارها دون إرفاق أي اسم أو معرفات أخرى وسيتم الاحتفاظ بكافة بياناتكم دون الكشف عن هويتكم. سيتم مراقبة السجلات وقد يتم تدقيقها من قبل اللجنة الأخلاقيات للعلوم الاجتماعية والسلوكية دون انتهاك السرية.

نود أن تحصل على موافقتك على الأمور التالية:

(يرجى التحقق من جميع الخيارات أدناه التي تعطي الموافقة عليها)

المشاركة

تسجيل حلقات النقاش

الاستعانة بأقوالكم

سوف يتم إعطاؤكم اسبوع واحد بقيادة الموافقة في حال كنتم مهتمين بالمشاركة في هذه الدراسة. سيتم ترك نسخة من المادة الموافقة معك، و لمزيد من المعلومات والأسئلة حول البحث، يُرجى الاتصال بالأشخاص المذكورين أدناه:

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الدكتورة لميس جمعة، كلية العلوم الزراعية والغذائية، الجامعة الأميركية في بيروت
هاتف: 961-1-350000، تحويلة (4544)، البريد الإلكتروني: lj18@aub.edu.lb

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ميريام داغر ، تغذية الصحة العامة ، ماستير - الجامعة الأميركية في بيروت
هاتف: 961-76102802، البريد الإلكتروني: mkd06@mail.aub.edu

إذا كانت لديك أي أسئلة، مخاوف أو شكاوى حول حقوقك و حقوق طفلك كمشاركين في هذا البحث أو لمناقشة الاهتمامات أو الشكاوى الأخرى المتعلقة بالدراسة مع شخص ليس جزءاً من فريق البحث، يمكنك الإتصال بالمكتب التالي في الجامعة الأميركية في بيروت:

لجنة الأخلاقيات للعلوم الاجتماعية والسلوكية.
العنوان: الجامعة الأميركية في بيروت؛ شارع رياض الصلح، بيروت 2020 1107، لبنان
هاتف: 00961 1 374374، تحويلة: 5445، البريد الإلكتروني: irb@aub.edu.lb

يرجى التحقق بجوار العناصر التي تريد منح إذن لطفلك:

لطفك:

لقد قرأت (أو شخص قد قرأ لي) هذا النموذج وأدرك أنه يُطلب مني إعطاء إذن لطفلي القاصر (أو طفل تحت وصي) للمشاركة في دراسة بحثية. لقد أتيت لي الفرصة لطرح الأسئلة وقد أجبته على إرضائي.

أوافق طوعاً على منح إذن لطفلي تحت وصي للمشاركة في:

- استكمال استبيان قصير في الصف
 المناقشة الجماعية

أنا لا أتخلى عن أي حقوق قانونية من خلال التوقيع على هذا النموذج. سوف احصل على نسخة من هذا النموذج.

طبع اسم الشخص

الاسم المطبوع للشخص المخول بمنح إذن لشخص ثانوي / مشارك

توقيع الشخص المخول بمنح إذن لشخص ثانوي / مشارك (عند الاقتضاء)

صباحاً / مساءً

العلاقة بالشخص

التاريخ والوقت

للأم / الوصي القانوني:

لقد قرأت وفهمت المعلومات الواردة أعلاه. أوافق طواعية على المشاركة في الدراسة. أنا أعطيك إذن ل:

- استكمال استبيان قصير في البيت
 المشاركة في المقابلة

أنا لا أتخلى عن أي حقوق قانونية من خلال التوقيع على هذا النموذج. سوف احصل على نسخة من هذا النموذج.

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اسم المشارك توقيع المشارك رقم المشارك

ملاحظة: إذا وافقت على المشاركة في المقابلة، فسيقوم فريق البحث بمتابعتك عبر مكالمة هاتفية لتزويدك بتفاصيل إضافية فيما يتعلق بالتواريخ المحتملة للمقابلة.

توثيق الموافقة على الاشتراك:

لقد شرحت البحث للمشاركين قبل طلب التوقيع (التوقيعات) أعلاه. لا توجد فراغات في هذا المستند. سيتم تقديم نسخة من هذا النموذج إلى الوالد / الوصي القانوني للطفل المشارك / الموضوع.

توقيع الشخص الحاصل على إذن

الاسم المطبوع للشخص الحاصل على تصريح

صياحا / مساه
التاريخ و الوقت

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B. Online recruitment



Permission for Child and Mothers to Participate in Research / Consent Form

Study Title: Exploring Children and Parental Perspectives towards Healthy Eating and Active Living in Lebanon: A Mixed Method Study

Principal Investigator: Dr. Lamis Jomaa, American University of Beirut

Graduate Student: Myriam Dagher

You and your child are invited to participate in a research study, conducted by the Department of Nutrition and Food Sciences at the American University of Beirut. It is important that you read the information below carefully before agreeing that you and your child participate in the study and to understand the purpose, actions, benefits and risks related to you and your child's participation in this project. Please feel free to ask any questions if you need any clarification about what is stated in this form or if you need any additional information.

You and your child participation is voluntary. If you and your child decide to participate, you will be asked to provide your written consent by email and you will receive a soft copy of the form.

Purpose

More and more children and teenagers are gaining excess weight worldwide including Lebanon. Gaining excess weight is bad for health and is likely to increase the risk of some diseases, affect growth, health and academic performance of children. We would like to find out what are the reasons affecting the excess weight gain among children and identify effective ways to help improving healthy eating and regular physical activity for Lebanese children. In order to do that, we need to examine the perceptions and experiences of children and their parents towards healthy eating and regular physical activity. Also, we need to understand what are the challenges and motivators behind that. Results from this study can help inform school and home-based nutrition programs and interventions that can improve the dietary intake and nutritional status of children and to curb the rising rates of obesity among children.

Eligibility criteria include:

1. Lebanese children aged 10 to 11 years old.

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2. Generally healthy children and their mothers: absence of any disease that may impair growth, absence of chronic illness, inborn errors of metabolism, physical disabilities or malformations that would interfere with eating patterns and body composition.

Project Procedures and Duration

We will ask you and your child each to participate separately in one interview, and one focus group discussion with your child, through Zoom or any other online platform of your choice. We would like to tape record your interview and your child focus group discussion to make sure that we remember accurately all the information that will be provided. Only the aggregated data from the interviews will be shared. You may still participate in the interview if you do not want to be taped.

Below is a description of what will happen if you decide to participate in the study and allow your 10 to 11-year-old child to also take part in this study:

Your (mother or legal guardian in case mother is absent):

- We will ask you to participate in a phone call individual interview and will ask you some questions about your opinion toward the challenges and motivators of your child when following healthy eating pattern and regular physical activities along with questions on future program ideas for improving healthy lifestyle among children. We assure you that this information will be kept strictly confidential. Your child can also be present during the interview and is allowed to assist you in answering the questions. You will be interviewed through a phone call or using any online platform that you prefer. The interview will require around 15 minutes of your time.

Your participating child (age 10-11 years):

- Your child will also participate in a group discussion with approximately 5 other children aged 10 to 11 years old in his/her school using Zoom or any other online platforms they prefer. Your child will be asked questions about his/her perceptions and experiences towards healthy eating and regular physical activities and will have the freedom to express his/her opinions on how they can be assisted to have better and healthier dietary and lifestyle choices. The group discussion will last for approximately 30 minutes.

Risks, Benefits

There are no risks resulting from your participation or that of your child in this study. You and your child can choose not to answer any question if you wish.

At the end of your and your child participation in the study, you will receive nutrition tips and information on healthy eating and living. Upon the completion of the interview and ques-

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tionnaire, the findings of the study can help us identify a set of recommendations to assist in building school, home and community-based interventions that can help improve the eating and lifestyle behaviors of children in an attempt to curb the rising rates of obesity.

Confidentiality

You and your child may leave the study at any time. If you decide to stop your and your child's participation in the study, there will be no penalty to you, or to your child and you will not lose any benefits to which you are otherwise entitled. Your decision will have no impact on your child's grades and academic year and will not affect future relationship, or that of your child, with the school or with AUB or AUB Medical Center in any possible way.

The interview tapes will be kept in a locked file drawer in the university. They will only be used by the research team. You and your child may still participate in the interviews if you do not want to be taped. In this case, the recorder will be paused whenever you or your child express your opinions. Records will be monitored and may be audited by the IRB, however, measures will be taken to make sure confidentiality is not being violated.

All data will be represented as aggregate data and will have no identifiers that could be linked to your personal responses. Only codes will be used on notes taken from the focus group to link the data for you and your child. Identifiers of participation and phone numbers will be destroyed upon the completion of data collection. Opinions shared during the discussions will be kept confidential and used only as collective information. Findings from this study will be used for research purposes only.

Incentives

As a thank you for participating in the interview, we will be provided with age- and culturally-appropriate nutrition tips and information on healthy eating for their children, upon completion of the study.

The Social & Behavioral Institutional Review Board responsible for human subjects research at AUB has reviewed this research project and found it to be acceptable, according to applicable Lebanese and U.S. federal regulations and AUB policies designed to protect the rights and welfare of participants in research. [11]
SEP

Please note that we will make sure that your interview and your child's focus group will take place at a convenient time for you. The interviews and discussions will be audio-taped to make sure that the research team remember accurately all the information you provide. We might be quoting you in the texts, reports and articles we produce without attaching any name or other identifiers and all your quotations will be kept anonymous.

Records will be monitored and may be audited by the IRB without violating confidentiality.

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We would like to obtain your agreement in:
(Kindly check all the options below you give consent for)

- Participating*
- Audiotaping/recording*
- Quoting*
- Keeping all information that will be discussed confidential and pictures should not be taken during the focus group discussion of your child*

Contacts and Questions: For questions, concerns, or complaints about the study you may contact:

Dr. Lamis Jomaa, Faculty of Agricultural & Food Sciences – AUB
Tel: 961-1-350000 (Ext 4544) E-mail: lj18@aub.edu.lb

Myriam Dagher, Public Health Nutrition, MSc – AUB
Tel: 961-76102802 E-mail: mkd06@mail.aub.edu

For questions about your child's rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact AUB Social & Behavioral Science Institutional Review Board – AUB
Tel: 961 -1-350000 (Ext 5445) E-mail: irb@aub.edu.lb

Kindly check next to the items you want to give permission for your child:

➤ **For Child:**

I have read (or someone has read to me) this form and I am aware that I am being asked to give permission for my minor child (or child under my guardianship) to participate in this research study. I have had the opportunity to ask questions and have had them answered to my satisfaction.

I voluntarily agree to give permission for my child to participate in:

- The focus group discussion**

I am not giving up any legal rights by signing this form. I will be given my written consent by email of this form.

Note: Kindly note that your written consent through an email is needed to make sure that an adult will be accompanying the child during the interview.

➤ **For Mother / Legal Guardian:**

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I have read and understood the above information. I voluntarily agree to participate in the study. I give you my written permission by email to:

Participate in one in-depth interview

I am not giving up any legal rights by signing this form. I will be given my written consent of this form.

Note: If you consent to participate in the interview and/or to give permission to your child to participate in the group discussion, kindly send your written consent by email to mkd06@mail.aub.edu stating that:

“I approve my participation and/or that of my child in this study”.

The research team will follow-up with you through a phone call to provide you with additional details regarding the potential dates of your interview and/or your child’s group discussion.

Investigator/Research Staff

I have explained the research to the participants before requesting the signature(s) above. There are no blanks in this document. A soft copy of this form and of your confirmation email will be given by email to the parent/legal guardian of the child participant/subject.

_____ AM/PM
Printed name of person obtaining permission

Signature of person obtaining permission

_____ AM/PM
Date and Time

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إذن للطفل والأمهات للمشاركة في البحث

اسم البحث: استكشاف مفاهيم وتجارب الأطفال والأهل تجاه الأكل الصحي والنشاط البدني في لبنان: دراسة بطرق متنوعة.

الباحث الرئيسي: الدكتورة لميس جمعة - قسم التغذية وعلوم الغذاء، الجامعة الأميركية في بيروت.

الطالبة: ميريام داغر - قسم التغذية وعلوم الغذاء

أنتِ وطفلك مدعوّان للمشاركة في دراسة بحثية، يُجرىها قسم التغذية وعلوم الغذاء في الجامعة الأميركية في بيروت. من المهمّ أن تقرأ المعلومات المذكورة أدناه بعناية قبل الموافقة على مشاركتك و مشاركة طفلك في الدراسة، من أجل فهم الأهداف، الإجراءات، الفوائد والأخطار المرتبطة بمشاركتك أنتِ وطفلك بهذا المشروع. لا تترددي في طرح الأسئلة إذا كنت بحاجة. إلى توضيح حول ما سيورد في هذه الإستمارة أو إذا كنت بحاجة إلى أي معلومات إضافية. سوف تعطيك هذا الإستمارة اللتي تتضمن معلومات عن المشروع وكذلك معلومات عن كيف الاتصال مع الفريق الذي يجري الدراسة للرجوع اليها في المستقبل.

مشاركته ومشاركة طفلك تطوعية. إذا قررت أنتِ وطفلك المشاركة، فسيتطلب منك قدم موافقتك الخطية عبر البريد الإلكتروني وستلقى نسخة إلكترونية من النموذج.

الهدف:

يتزايد عدد الأطفال والمراهقين الذين يزداد وزنهم في جميع أنحاء العالم بما في ذلك لبنان. زيادة الوزن يضر الصحة ومن المرجح أن يزيد من خطر الإصابة ببعض الأمراض، ويؤثر على النمو والصحة والأداء الأكاديمي للأطفال. نود أن نكتشف ما هي الأسباب التي تؤثر على زيادة الوزن بين الأطفال، وتحديد طرق فعالة للمساعدة في تحسين الأكل الصحي والنشاط البدني المنتظم للأطفال اللبنانيين. من أجل القيام بذلك، نحن بحاجة إلى دراسة تصورات وتجارب الأطفال وأهالهم تجاه الأكل الصحي والنشاط البدني المنتظم. أيضا، نحن بحاجة إلى فهم ما هي التحديات والدوافع وراء ذلك. نتائج هذه الدراسة سوف تساعد في إعلام برامج وتدخلات التغذية في المدرسة والمنزل التي يمكن أن تحسن تناول الغذاء والوضع الغذائي للأطفال والحد من ارتفاع معدلات بدانة الأطفال.

معايير الأهلية تشمل:

١. أطفال لبنانيون يتراوح أعمارهم بين ١٠ و ١١ سنة.
٢. صحة الأطفال وأمهاتهم العامة جيدة: عدم وجود أي مرض يأتُر على النمو، وعدم وجود امراض مزمنة، عدم وجود امراض وراثية، والتشوهات الجسدية التي قد تتداخل مع أنماط الأكل وتكوين الجسم.

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وصف المشروع ومدته:

سنطلب منك أنت وطفلك/طفلتك مقابلاتك عن بعد وإجراء مناقشة جماعية مع طفلك/طفلتك عن بعد ، من خلال Zoom أو أي منصة أخرى على الانترنت من اختيارك. نود أن نسج مقابلتك ومناقشة مجموعة طفلك للتأكد من أننا نتذكر بدقة جميع المعلومات التي سيتم تقديمها. سيتم مشاركة البيانات المجمعة فقط من المقابلات (التي لن تحتوي على معرفات). لا يزال بإمكانك المشاركة في المقابلة إذا كنت لا ترغب في التسجيل.

فيما يلي، سوف يتم شرح لما سيحدث إذا قررت المشاركة في الدراسة وإذا سمحت لطفلك/طفلتك البالغ(ة) من العمر ١٠ - ١١ سنة بالمشاركة في الدراسة.

أنت (الأم أو الوصي القانوني في حالة غياب الأم):

- سنطلب منك المشاركة في مقابلة فردية عبر مكالمة هاتفية ، و سنطرح عليك بعض الأسئلة عن بعد بشكل فردي، وتدور هذه الأسئلة حول رأيك تجاه التحديات والمحفزات لطفلك عند اتباع نمط أكل صحي وأنشطة بدنية منتظمة بالإضافة إلى أسئلة حول أفكار برنامج في المستقبل لتحسين نمط حياة صحي للأطفال. نؤكد لك أن المعلومات التي ستوفرينها ستبقى في غاية السرية. يمكن أن يكون طفلك حاضر أثناء المقابلة ويسمح له بمساعدتك في الإجابة على الأسئلة. ستتم مقابلتك من خلال مكالمة هاتفية أو خلال أي منصة على الانترنت التي تفضلها. سوف تستغرق المقابلة حوالي 15 دقيقة من وقتك.

طفلك المشارك (عمر ١٠-١١ سنة):

- سيشارك أيضًا طفلك في مناقشة جماعية عن بعد مع حوالي 5-أطفال آخرين من مدرسته تتراوح أعمارهم بين ١٠-١١ عامًا باستخدام Zoom أو خلال أي منصة على الانترنت التي تفضلها. سوف يُطرح على طفلك أسئلة حول تصورات وتجاربته تجاه الأكل الصحي والأنشطة البدنية المنتظمة وسيكون له الحرية في التعبير عن آرائه حول كيفية مساعدته للحصول على خيارات غذائية وأسلوب حياة أفضل وأكثر صحي.. سوف تستغرق المناقشة الجماعية حوالي 30-دقيقة تقريبًا.

المخاطر والفوائد

ليس هناك مخاطر ناتجة عن مشاركتك ومشاركة طفلك في هذه الدراسة. بإمكانكما أن تختاران عدم الإجابة عن أي سؤال. في نهاية مشاركتك ومشاركة طفلك في البحث، سنتلقى نصائح ومعلومات حول التغذية أو المعيشة الصحية. عند الانتهاء من المقابلة ومن الاستبيان ، نتائج الدراسة سوف تساعدنا في تحديد مجموعة من التوصيات لبناء التدخلات المدرسية والمجتمعية التي يمكن أن تساعد الأطفال في تحسين سلوكيات الأكل ونمط الحياة و لحد ارتفاع معدلات البدانة.

السرية

يحق لك ولطفلك التوقف عن المشاركة في هذه الدراسة أي وقت. إذا قررت توقف المشارك ومشاركة طفلك في الدراسة ، فلن تفرض عليك أو على طفلك أي عقوبة ولن تفقد أي مزايا يحق لك الحصول عليه. قرارك لن يكون له

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أي تأثير على درجات طفلك والسنة الدراسية و سوف لا يؤثر بأي شكل من الأشكال على طفلك وعلاقتك بالمدرسة أو بالجامعة الأميركية في بيروت أو في المركز الطبي في الجامعة الأميركية في بيروت.

سيتم الاحتفاظ بشرائط المقابلة في ملفات مغلق في الجامعة. سيتم استخدامها فقط من قبل فريق البحث. لا يزال بإمكانك أنت وطفلك المشاركة في المقابلات إذا كنت لا ترغب في التسجيل. في هذه الحالة، سيتم إيقاف المسجل مؤقتاً عندما تعبر أنت أو طفلك عن آرائكم. سيتم مراقبة السجلات وقد يتم تدقيقها من قبل اللجنة الأخلاقيات للعلوم الاجتماعية والسلوكية، ومع ذلك، سيتم اتخاذ تدابير للتأكد من عدم انتهاك السرية.

سيتم تمثيل جميع البيانات كبيانات مجمعة ولن تحتوي على معرفات يمكن ربطها بردودك الشخصية. سيتم استخدام الرموز فقط في الملاحظات المأخوذة من المجموعة المركزية لربط البيانات لك ولطفلك. سيتم تدمير معرفات المشاركة و أرقام الهواتف عند الانتهاء من جمع البيانات. سيتم الحفاظ على سرية الآراء التي تمت مشاركتها أثناء المناقشات واستخدامها فقط كمعلومات جماعية. سيتم استخدام نتائج هذه الدراسة لأغراض البحث فقط.

حواضر

لنشكر مشاركتك في المقابلة، سيتم تزويدك أيضاً بنصائح ومعلومات غذائية مناسبة للعمر والثقافة حول الغذاء والمعيشة الصحية عند انتهاء الدراسة.

لجنة الأخلاقيات للعلوم الاجتماعية والسلوكية في الجامعة الأميركية في بيروت قد راجعت هذا المشروع البحثي ووجدت أنه مقبول، وفقاً للوائح الفيدرالية اللبنانية والأمريكية وسياسات الجامعة الأميركية في بيروت التي تهدف إلى حماية حقوق ورفاهية المشاركين في البحث.

نود أن نشير إلى أن مقابلتك والنقاش الجماعي لطفلك سيتمون في وقت مناسب لك. سيتم تسجيل المقابلات والمناقشات الصوتية للتأكد من أن فريق البحث يتذكر بدقة جميع المعلومات التي ستتقدم. يمكن أن نلجأ إلى الاستعانة بأقوالكم في النصوص، التقارير أو المقالات التي سنقوم بإصدارها دون إرفاق أي اسم أو معرفات أخرى وسيتم الاحتفاظ بكافة بياناتكم دون الكشف عن هويتكم.

سيتم مراقبة السجلات وقد يتم تدقيقها من قبل اللجنة الأخلاقيات للعلوم الاجتماعية والسلوكية دون انتهاك السرية.

نود أن نحصل على موافقتك على الأمور التالية:

(يرجى التحقق من جميع الخيارات أدناه التي تعطي الموافقة عليها)

- المشاركة
- تسجيل حلقات النقاش
- الاستعانة بأقوالكم
- الحفاظ على جميع المعلومات التي سيتم مناقشتها ويجب عدم التناقص الصور أثناء المناقشة الجماعية لطفلك

الاتصالات والأسئلة: للأسئلة أو المخاوف أو الشكاوى حول الدراسة يمكنك الاتصال ب:

الدكتورة لميس جمعة، كلية العلوم الزراعية والغذائية، الجامعة الأميركية في بيروت

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هاتف: 961-1-350000، تحويلة (4544)، البريد الإلكتروني: lj18@aub.edu.lb
ميريام داغر ، تغذية الصحة العامة ، ماستير - الجامعة الأميركية في بيروت
هاتف: 961-76102802، البريد الإلكتروني: mkd06@mail.aub.edu

إذا كانت لديك أي أسئلة، مخاوف أو شكوى حول حقوقك و حقوق طفلك كمشاركين في هذا البحث أو لمناقشة الاهتمامات أو الشكاوى الأخرى المتعلقة بالدراسة مع شخص ليس جزءاً من فريق البحث، يمكنك الإتصال بالمكتب التالي في الجامعة الأميركية في بيروت:

لجنة الأخلاقيات للعلوم الاجتماعية والسلوكية.
العنوان: الجامعة الأميركية في بيروت، شارع رياض الصلح، بيروت 1107 2020، لبنان
هاتف: 00961 1 374374، تحويلة: 5445، البريد الإلكتروني: irb@aub.edu.lb

يرجى التحقق بجوار العناصر التي تريد منح إذن لطفلك:

لطفك:

لقد قرأت (أو شخص قد قرأ لي) هذا النموذج وأدرك أنه يُطلب مني إعطاء إذن لطفلي القاصر (أو طفل تحت وصي) للمشاركة في دراسة بحثية. لقد أتحت لي الفرصة لطرح الأسئلة وقد أجبتهم على إرضائي.

أوافق طوعاً على منح إذن لطفلي تحت وصي للمشاركة في:

المناقشة الجماعية

أنا لا أتخلى عن أي حقوق قانونية من خلال التوقيع على هذا النموذج. سوف اعطي موافقتي الخطية عبر البريد الإلكتروني من هذا النموذج.

ملاحظة: يرجى ملاحظة أن موافقتك الخطية من خلال رسالة عبر بريد إلكتروني مطلوبة للتأكد من أن شخص بالغ سيرافق الطفل أثناء المقابلة.

للأم / الوصي القانوني:

لقد قرأت وفهمت المعلومات الواردة أعلاه. أوافق طواعية على المشاركة. أنا أعطيك موافقتي الخطية عبر البريد الإلكتروني ل:

المشاركة في المقابلة

أنا لا أتخلى عن أي حقوق قانونية من خلال التوقيع على هذا النموذج. سوف اعطي موافقتي الخطية عبر البريد الإلكتروني من هذا النموذج.

ملاحظة: إذا وافقت على المشاركة في المقابلة و / أو على إعطاء إذن لطفلك للمشاركة في المناقشة الجماعية، يرجى إرسال رسالة عبر البريد الإلكتروني لتأكيد مشاركتك إلى mkd06@mail.aub.edu تنص على ما يلي:

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"أوافق على مشاركتي و / أو مشاركة طفلي في هذه الدراسة".

سيقوم فريق البحث بمتابعتك عبر مكالمة هاتفية لتزويدك بتفاصيل إضافية عن التواريخ المحتملة لمقابلتك و / أو لمناقشة (الجماعية) طفلك.

توثيق الموافقة على الاشتراك:

لقد شرحت البحث للمشاركين قبل طلب الموافقة الخطية عبر البريد الإلكتروني. لا توجد فراغات في هذا المستند. سيتم تقديم نسخة إلكترونية من هذا النموذج ومن البريد الإلكتروني لتأكيد المشاركة، إلى الوالد / الوصي القانوني للطفل المشارك.

توقيع الشخص الحاصل على

إذن

الاسم المطبوع للشخص الحاصل على تصريح

صباحا / مساء

و التاريخ

الوقت

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APPENDIX IV

ASSENT FORM

A. In-person recruitment



Assent Form
Children aged 10-11 years

Study Title: Exploring Children and Parental Perspectives towards Healthy Eating and Active Living in Lebanon: A Mixed Method Study

Principal Investigator: Dr. Lamis Jomaa, American University of Beirut

Graduate Student: Myriam Dagher

Introduction

- You are being asked to be in a research study. Studies aim to improve healthy lifestyle by understanding how we think and behave as kids and adults in given situations and at different times.
- This form will tell you about the study to help you decide whether or not you want to participate.
- You should ask any questions you have before making up your mind. You can think about it and discuss it with your family or friends before you decide.
- It is okay to say “No” if you don’t want to be in the study. If you say “Yes” you can change your mind and quit being in the study at any time without getting in trouble.
- If you decide you want to be in the study, an adult (usually a parent) will also need to give permission for you to be in the study.
- All information discussed should be kept confidential and should not be shared with anyone.
- The researcher will turn off the audio recorder for participants who refuse to be audio taped, and take handwritten notes instead.

1. What is this study about?

More and more children and teenagers are gaining excess weight worldwide including Lebanon. Gaining excess weight is bad for health and is likely to increase the risk of some diseases, affect growth, health and academic performance of children. We would like to find out what are the reasons affecting the excess weight gain among children and identify effective ways to help improving healthy eating and regular physical activity for Lebanese children. In order to do that, we need to examine your perceptions and experiences towards healthy eating and regular physical activity and to understand the challenges and motivators behind that.

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2. What will I need to do if I am in this study?

You will participate in a group discussion with approximately 8 to 10 other students from your school aged 10 to 11. You will be asked questions about your perceptions and experiences towards healthy eating and regular physical activities. You will also have the freedom to express your opinion on new innovative ideas for future health intervention. Also, picture cards will be used to assist you in pointing out appropriate eating times, activity and occasions (six eating times: breakfast, morning break, lunch, afternoon, dinner and evening and six occasions: home, school, party, sport, being with friends and TV/computer).

3. How long will I be in the study?

The interview will last for around 45 to 60 minutes with 8 to 10 other children in your school, in a private place at a convenient time. This will be the only visit and interview we will have with you in this study.

4. Can I stop being in the study?

You can stop being in the study at any time. We would not be upset and it would have no impact on your grades and academic year and will not affect you or your parents' relationship with the American University of Beirut or with your school.

5. What bad things might happen to me if I am in the study?

Nothing bad will happen to you by joining this study. No one outside the interview other than the group of 8 to 10 children as your age and school that will also be present in the interview. If you do not want to answer a question, you can choose not to.

6. What good things might happen to me if I am in the study?

There is no direct benefit for you by being in the study, but sharing your experiences and opinion will help us better understand the challenges that you face when following a healthy eating pattern and regular physical activities and what motivate you to do so. This will help us suggest to your school and family strategies to encourage you to follow a healthy lifestyle and have a more conducive environment for healthy eating and living.

7. Will I be given anything for being in this study?

Food and refreshments will be offered for all participants during the focus group discussions.

8. Who can I talk to about the study?

For questions about the study you can contact:

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Dr. Lamis Jomaa, Faculty of Agricultural & Food Sciences-AUB
Tel: 961-1-350000 (Ext 4544) E-mail: lj18@aub.edu.lb
Myriam Dagher, Public Health Nutrition, MSc – AUB
Tel: 961-76102802 E-mail: mkd06@mail.aub.edu

To discuss other study-related questions with someone who is not part of the research team, you can contact the AUB Social & Behavioral Science Institution Review Board at:

Address: American University of Beirut; Riad El Solh, Beirut 1107 2020, Lebanon
Tel: 00961 1 374374, ext: 5445 **Email:** irb@aub.edu.lb

Signing the assent form

I have read (or someone has read to me) this form. I have had a chance to ask questions before making up my mind. I want to be in this research study.

Printed name of subject

Date and time

Investigator/Research Staff

I have explained the research to the participant before requesting the signature above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining assent

Signature of person obtaining assent

Date and time

This form must be accompanied by an IRB approval parental permission form signed by a parent/guardian

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نموذج للموافقة على الإشتراك في المناقشة الجماعية

الأطفال ذو العمر الذي يتراوح بين ١٠-١١ سنوات

إسم البحث: استكشاف مفاهيم وتجارب الأطفال والأهل تجاه الأكل الصحي والنشاط البدني في لبنان: دراسة بطرق متنوعه.

الباحث الرئيسي: الدكتورة لميس جمعة - قسم التغذية وعلوم الغذاء، الجامعة الأميركية في بيروت.

الطالبة: ميريام داغر - قسم التغذية وعلوم الغذاء.

مقدمة

- أنت مدعو للمشاركة في دراسة بحثية. الدراسات تهدف إلى تحسين نمط الحياة الصحية من خلال فهم كيف نفكر وتتصرف كصغار وكبار في مجال معين وأوقات مختلفة.
- سيعرّفك هذا النموذج عن الدراسة لمساعدتك في أن تقرر ما إذا كنت ترغب في المشاركة.
- لك مطلق الحرية بأن تسأل أي سؤال قبل اتخاذ قرارك. يمكنك التفكير بالأمر ومناقشته مع عائلتك أو أصدقائك قبل أن تقرر.
- يمكنك رفض المشاركة في الدراسة إذا أردت ذلك. وإن وافقت على المشاركة، بإمكانك أن تغير رأيك لاحقاً وتترك الدراسة في أي وقت من دون أي مشاكل.
- إذا قررت المشاركة في هذا البحث على أحد الكبار أيضاً (أحد الوالدين عادة) إعطاء الإذن بالسماح لك بالمشاركة.
- جميع المعلومات التي ستمت مناقشتها سوف تظل سرية ويجب عدم مشاركتها مع أي شخص.
- سيقوم الباحث بإيقاف تشغيل مسجل الصوت للمشاركين الذين يرفضون أن صوتهم يكونوا شريطاً صوتياً، ويدونون الملاحظات المكتوبة بخط اليد بدلاً من ذلك.

١. عما يدور هذا البحث؟

يتزايد عدد الأطفال والمراهقين الذين يزداد وزنهم في جميع أنحاء العالم بما في ذلك لبنان. زيادة الوزن يضر الصحة ومن المرجح أن يزيد من خطر الإصابة ببعض الأمراض، ويؤثر على النمو والصحة والأداء الأكاديمي للأطفال. نود أن نكتشف ما هي الأسباب التي تؤثر على زيادة الوزن بين الأطفال، وتحديد طرق فعالة للمساعدة في تحسين الأكل الصحي والنشاط البدني المنتظم للأطفال اللبنانيين. من أجل القيام بذلك، نحن بحاجة إلى دراسة تصوراتك وتجاربك تجاه الأكل الصحي والنشاط البدني المنتظم. أيضاً، نحن بحاجة إلى فهم ما هي التحديات والدوافع وراء ذلك.

٢. ماذا على أن أفعل إذا كنت مشاركاً في هذا البحث؟

ستشارك في مناقشة جماعية مع حوالي ٨ إلى ١٠ طلاب من مدرستك تتراوح أعمارهم بين ١٠ و١١ عاماً. سوف نطرح عليك أسئلة حول تصوراتك وتجاربك تجاه الأكل الصحي والأنشطة البدنية المنتظمة. سيكون لديك أيضاً مطلق الحرية بأن تعبير عن رأيك في إعطاء أفكار جديدة لطرق تدخل صحي في المستقبل. بالإضافة إلى ذلك، سيتم استخدام بطاقات الصور لمساعدة الأطفال في الإشارة إلى أوقات الأكل المناسبة والأنشطة المناسبة (سنة أوقات تناول الطعام: الإفطار ، استراحة الصباح ، الغذاء ، بعد الظهر ، العشاء والمساء وستة مناسبات: المنزل ، المدرسة ، الحفلة ، الرياضة ، وجوده مع الأصدقاء والتلفزيون / الكمبيوتر).

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٣. كم من الوقت سيستغرق هذا البحث؟

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سوف تستغرق المقابلة حوالي ٦٠ إلى ٩٠ دقيقة مع ٨ إلى ١٠ أطفال آخرين من مدرستك، في مكان يحافظ على خصوصياتك و في وقت مناسب. ستكون هذه الجلسة والزيارة الوحيدة في هذه الدراسة.

٤. هل بإمكانني التوقف عن المشاركة في البحث؟

يمكنك التوقف عن المشاركة في البحث في أي وقت. لن تشعر بالضيق ولن يكون لذلك أي تأثير على علامتك وعلى السنة الدراسية ولن يؤثر فيك أو على علاقة والديك بالجامعة الأمريكية في بيروت أو بمدرستك.

٥. هل ممكن أن يحصل لي أي ضرر؟

إن مشاركتك لن تؤدي إلى أي أذى. لا أحد خارج المقابلة سواي أنا ومجموعة من ٨ إلى ١٠ أطفال من عصرك ومن مدرستك الذين سيكون حاضرهم أيضاً في المقابلة. وإذا أردت عدم الإجابة عن سؤال، يمكنك اختيار ذلك.

٦. ما الفائدة من مشاركتك في الدراسة؟

ليس هناك فوائد مباشرة لكونك في الدراسة، ولكن تبادل خبراتك وأرائك ستساعدنا على فهم التحديات التي تواجهها عند اتباع نمط أكل صحي وأنشطة بدنية منتظمة وما يسهل القيام بذلك. سيساعدنا ذلك في اقتراح استراتيجيات لمدرستك ولعائلتك لتشجيعك على اتباع نمط حياة صحي وتوفير بيئة تشجع للأكل لصحي والمعيشة الصحية.

٧. هل سأمنح تعويض مقابل المشاركة في هذه الدراسة؟

سيتم تقديم الطعام والمرطبات لجميع المشاركين في المناقشات الجماعية.

٨. مع من أستطيع التحدث عن الدراسة؟

لطرح أية أسئلة عن الدراسة، يمكنك الاتصال ب:

الدكتورة لميس جمعة، كلية العلوم الزراعية والأغذية، الجامعة الأمريكية في بيروت
هاتف: 961-1-350000، تحويلة (4544)، البريد الإلكتروني: lj18@aub.edu.lb

ميريام داغر، تغذية الصحة العامة، ماستير - الجامعة الأمريكية في بيروت
هاتف: 961-76102802، البريد الإلكتروني: mkd06@mail.aub.edu

إذا كانت لديك أية أسئلة، أو كنت ترغب في التحدث مع شخص من خارج فريق البحث، يمكنك الاتصال بالمكتب التالي في الجامعة الأمريكية في بيروت:

لجنة الأخلاقيات للعلوم الاجتماعية والسلوكية
العنوان: الجامعة الأمريكية في بيروت؛ شارع رياض الصلح، بيروت 2020 1107، لبنان
هاتف: 00961 1 374374، تحويلة: 5445، البريد الإلكتروني: irb@aub.edu.lb

التوقيع على نموذج الموافقة

لقد قرأت (أو شخص قد قرأ لي) هذا النموذج. وقد أتيت لي فرصة لطرح الأسئلة قبل اتخاذ قراري. وبالتالي أوافق طوعاً على الانضمام إلى البحث.

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التاريخ و الساعة

اسم المشترك(ة)

توثيق الموافقة على الاشتراك:

لقد شرحت البحث للمشارك قبل طلب التوقيع أعلاه. لا توجد فراغات في هذه الوثيقة. وقد أعطيت نسخة من هذا النموذج للمشارك أو ممثله/ها.

توقيع الشخص المصرح له بالحصول على موافقة
المشارك

إسم الشخص المصرح له بالحصول على موافقة
المشارك

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B. Online recruitment



Oral Assent Form Children aged 10-11 years

SEP

Study Title: Exploring Children and Parental Perspectives towards Healthy Eating and Active Living in Lebanon: A Mixed Method Study

Principal Investigator: Dr. Lamis Jomaa, American University of Beirut

Graduate Student: Myriam Dagher

Introduction

- You are being asked to be in a research study. Studies aim to improve healthy lifestyle by understanding how we think and behave as kids and adults in given situations and at different times.
- This form will tell you about the study to help you decide whether or not you want to participate.
- You should ask any questions you have before making up your mind. You can think about it and discuss it with your family or friends before you decide.
- It is okay to say “No” if you don’t want to be in the study. If you say “Yes” you can change your mind and quit being in the study at any time without getting in trouble.
- If you decide you want to be in the study, an adult (usually a parent) will also need to give permission for you to be in the study.
- All information discussed should be kept confidential and should not be shared with anyone.
- The researcher will turn off the audio recorder for participants who refuse to be audio taped, and take handwritten notes instead.

1. What is this study about?

More and more children and teenagers are gaining excess weight worldwide including Lebanon. Gaining excess weight is bad for health and is likely to increase the risk of some diseases, affect growth, health and academic performance of children. We would like to find out what are the reasons affecting the excess weight gain among children and identify effective ways to help improving healthy eating and regular physical activity for Lebanese children. In order to do that, we need to examine your perceptions and experiences towards healthy eating and regular physical activity and to understand the challenges and motivators behind that.

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2. What will I need to do if I am in this study?

You will participate in a group discussion with approximately 5 other students from your school aged 10 to 11 (through Zoom or any other online platform that you prefer). You will be asked questions about your perceptions and experiences towards healthy eating and regular physical activities. You will also have the freedom to express your opinion on new innovative ideas for future health intervention.

3. How long will I be in the study?

The interview will last for around 30 minutes with 5 other children in your school, at your convenient time.

4. Can I stop being in the study?

You can stop being in the study at any time. We would not be upset and it would have no impact on your grades and academic year and will not affect you or your parents' relationship with the American University of Beirut or with your school.

5. What bad things might happen to me if I am in the study?

Nothing bad will happen to you by joining this study. No one outside the interview other than the group of 5 children as your age and school that will also be present in the interview. If you do not want to answer a question, you can choose not to.

6. What good things might happen to me if I am in the study?

There is no direct benefit for you by being in the study, but sharing your experiences and opinion will help us better understand the challenges that you face when following a healthy eating pattern and regular physical activities and what motivate you to do so. This will help us suggest to your school and family strategies to encourage you to follow a healthy lifestyle and have a more conducive environment for healthy eating and living.

7. Who can I talk to about the study?

For questions about the study you can contact:

Dr. Lamis Jomaa, Faculty of Agricultural & Food Sciences-AUB
Tel: 961-1-350000 (Ext 4544) E-mail: lj18@aub.edu.lb
Myriam Dagher, Public Health Nutrition, MSc – AUB
Tel: 961-76102802 E-mail: mkd06@mail.aub.edu

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To discuss other study-related questions with someone who is not part of the research team, you can contact the AUB Social & Behavioral Science Institution Review Board at:

Address: American University of Beirut; Riad El Solh, Beirut 1107 2020, Lebanon

Tel: 00961 1 374374, ext: 5445 **Email:** irb@aub.edu.lb

Investigator/Research Staff

I have explained the research to the participant before requesting the oral assent above. There are no blanks in this document. A scanned copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining assent

Signature of person obtaining assent

Date and time

This form must be accompanied by an IRB approval parental permission form signed by a parent/guardian

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نموذج شفهي للموافقة على الإشتراك في المناقشة الجماعية

الأطفال ذو العمر الذي يتراوح بين ١٠-١١ سنوات

إسم البحث: استكشاف مفاهيم وتجارب الأطفال والأهل تجاه الأكل الصحي والنشاط البدني في لبنان: دراسة بطرق متنوعة.

الباحث الرئيسي: الدكتورة لميس جمعة - قسم التغذية وعلوم الغذاء، الجامعة الأميركية في بيروت.

الطالبة: ميريام داغر - قسم التغذية وعلوم الغذاء.

مقدمة

- أنت مدعو للمشاركة في دراسة بحثي. الدراسات تهدف إلى تحسين نمط الحياة الصحية من خلال فهم كيف نفكر ونتصرف كصغار وكبار في مجال معين وأوقات مختلفة.
- سيعرّفك هذا النموذج عن الدراسة لمساعدتك في أن تقرر ما إذا كنت ترغب في المشاركة.
- لك مطلق الحرية بأن تسأل أي سؤال قبل اتخاذ قرارك. يمكنك التفكير بالأمر ومناقشته مع عائلتك أو أصدقائك قبل أن تقرر.
- يمكنك رفض المشاركة في الدراسة إذا أردت ذلك. وإن وافقت على المشاركة، بإمكانك أن تغير رأيك لاحقاً وتترك الدراسة في أي وقت من دون أي مشاكل.
- إذا قررت المشاركة في هذا البحث على أحد الكبار أيضاً (أحد الوالدين عادة) إعطاء الإذن بالسماح لك بالمشاركة.
- جميع المعلومات التي ستمت مناقشتها سوف تظل سرية ويجب عدم مشاركتها مع أي شخص.
- سيقوم الباحث بإيقاف تشغيل مسجل الصوت للمشاركين الذين يرفضون أن صوتهم يكونوا شريطاً صوتياً، وبدون الملاحظات المكتوبة بخط اليد بدلاً من ذلك.

١. عما يدور هذا البحث؟

يتزايد عدد الأطفال والمراهقين الذين يزداد وزنهم في جميع أنحاء العالم بما في ذلك لبنان. زيادة الوزن يضر الصحة ومن المرجح أن يزيد من خطر الإصابة ببعض الأمراض، ويؤثر على النمو والصحة والأداء الأكاديمي للأطفال. نود أن نكتشف ما هي الأسباب التي تؤثر على زيادة الوزن بين الأطفال، وتحديد طرق فعالة للمساعدة في تحسين الأكل الصحي والنشاط البدني المنتظم للأطفال اللبنانيين. من أجل القيام بذلك، نحن بحاجة إلى دراسة تصوراتك وتجاربك تجاه الأكل الصحي والنشاط البدني المنتظم. أيضاً، نحن بحاجة إلى فهم ما هي التحديات والدوافع وراء ذلك.

٢. ماذا على أن أفعل إذا كنت مشاركاً في هذا البحث؟

ستشارك في مناقشة جماعية عن بعد مع حوالي 5 طلاب من مدرستك تتراوح أعمارهم بين ١٠ و ١١ عاماً (من خلال Zoom أو أي منصة أخرى على الانترنت التي تفضلها). سوف نطرح عليك أسئلة حول تصوراتك وتجاربك تجاه الأكل الصحي والأنشطة البدنية المنتظمة. سيكون لديك أيضاً مطلق الحرية بأن تعبير عن رأيك في إعطاء أفكار جديدة لطرق تدخل صحي في المستقبل.

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٣. كم من الوقت سيستغرق هذا البحث؟

سوف تستغرق المقابلة 30 دقيقة مع 5 أطفال آخرين من مدرستك، و في وقت يناسبك.

٤. هل بإمكانني التوقف عن المشاركة في البحث؟

يمكنك التوقف عن المشاركة في البحث في أي وقت. لن تشعر بالضيق ولن يكون لذلك أي تأثير على علامتك وعلى السنة الدراسية ولن يؤثر فيك أو على علاقة والديك بالجامعة الأمريكية في بيروت أو بمدرستك.

٥. هل ممكن أن يحصل لي أي ضرر؟

إن مشاركتك لن تؤدي إلى أي أذى. لا أحد خارج المقابلة سواي أنا ومجموعة من 5 أطفال من عمرك ومن مدرستك الذين سيكون حاضرون أيضاً في المقابلة. وإذا أردت عدم الإجابة عن سؤال، يمكنك اختيار ذلك.

٦. ما الفائدة من مشاركتك في الدراسة؟

ليس هناك فوائد مباشرة لكونك في الدراسة، ولكن تبادل خبراتك وأرائك ستساعدنا على فهم التحديات التي تواجهها عند اتباع نمط أكل صحي وأنشطة بدنية منتظمة وما يسهل القيام بذلك. سيساعدنا ذلك في اقتراح استراتيجيات لمدرستك ولعائلتك لتشجيعك على اتباع نمط حياة صحي وتوفير بيئة تشجع للأكل لصحي والمعيشة الصحية.

٧. مع من أستطيع التحدث عن الدراسة؟

لطرح أية أسئلة عن الدراسة، يمكنك الاتصال ب:

الدكتورة لميس جمعة، كلية العلوم الزراعية والأغذية، الجامعة الأمريكية في بيروت
هاتف: 961-1-350000، تحويلة (4544)، البريد الإلكتروني: lj18@aub.edu.lb

ميريام داغر، تغذية الصحة العامة، ماستير - الجامعة الأمريكية في بيروت
هاتف: 961-76102802، البريد الإلكتروني: mkd06@mail.aub.edu

إذا كانت لديك أية أسئلة، أو كنت ترغب في التحدث مع شخص من خارج فريق البحث، يمكنك الإتصال بالمكتب التالي في الجامعة الأمريكية في بيروت:

لجنة الأخلاقيات للعلوم الاجتماعية والسلوكية
العنوان: الجامعة الأمريكية في بيروت؛ شارع رياض الصلح، بيروت 1107 2020، لبنان
هاتف: 00961 1 374374، تحويلة: 5445، البريد الإلكتروني: irb@aub.edu.lb

توثيق الموافقة على الاشتراك:

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لقد شرحت البحث للمشارك قبل طلب الموافقة الشفوية أعلاه. لا توجد فراغات في هذه الوثيقة. وقد أعطيت نسخة ممسوحة ضوئياً من هذا النموذج للمشارك أو ممثله/ها.

توقيع الشخص المصرح له بالحصول على
موافقة المشارك

إسم الشخص المصرح له بالحصول على
موافقة المشارك

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APPENDIX V

INTERVIEW GUIDE – CHILDREN

Healthy Eating

English	Arabic
<p>What does a healthy meal means to you? <i>Probe: How important is to include healthy meals and snacks? Why?</i></p>	<p>ماذا تعني لك الوجبة الصحية؟ دقق: ما مدى أهمية تناول وجبات صحية ووجبات خفيفة صحية؟ لماذا؟</p>
<p>How healthy eating might affect your life?</p>	<p>باعتمادك، كيف يؤثر الأكل الصحي على حياتك؟</p>
<p>What makes it easy and difficult to get healthy meals? <i>Probe: tell us whether there are people who affect your eating habits, or in your environment)</i></p>	<p>ما الذي يجعل من السهل و من الصعب الحصول على وجبات صحية؟ دقق : أخبرنا إذا كان هناك أشخاص يؤثرون على عاداتك الغذائية، أو في محيطك؟)</p>
<p>Tell me more about the ways you reward yourself for eating healthy?</p>	<p>خبرني شوي عن كيف تكافئ نفسك على تناول الأكل الصحي؟</p>
<p>How could we make program to address nutrition attractive to students? <i>(how they should be given)</i></p>	<p>إذا قمنا برعاية برنامج لمعالجة سلامة صحة الأطفال وأكلهم الصحي، فكيف نجعلها جذابة للتلامذة؟ (كيف ينبغي أن تعطى)</p>
<p>How do you see your willingness to eat healthier foods during meals and how do you perceive your ability to overcome the barriers of healthy eating?</p>	<p>كيف بتشوفي مدى استعدادك لتناول كميات صحية عند الوجبات وقدرتك على تغلب حواجز التي تحد من تناول وجبات صحية؟</p>

Physical Activity

English	Arabic
<p>What is the first thought that comes to your mind when you think of exercise? Probe: How important is exercising to you? Why?</p>	<p>ما هي الفكرة الأولى التي تتبادر إلى ذهنك عندما تفكر في ممارسة الرياضة؟ دقق: ما مدى أهمية النشاط البدني؟ لماذا؟</p>
<p>What effects does you think exercising may have on you?</p>	<p>كيف يؤثر النشاط البدني عليك؟</p>
<p>What makes it easy and difficult for you to exercise? Probe: people, environment, etc.</p>	<p>ما الذي يجعل من السهل و من الصعب ممارسة النشاط البدني؟ دقق: أشخاص يؤثرون على عادات الرياضية، المحيط.</p>
<p>Tell me more about the ways you reward yourself for exercising?</p>	<p>خبريني شوي عن الطرق التي تكافئ نفسك بها على ممارسة الرياضة؟</p>
<p>How could we make program to address children active living or PE sessions attractive to students? (how they should be given)</p>	<p>إذا قمنا برعاية برنامج لمعالجة الأطفال ليعيشونا حياة نشيطة، كيف يمكننا أن نجعلها جذابة للتلامذة؟ (كيف ينبغي أن تعطى)</p>
<p>How much are you able to include exercising in the day and how successful do you think you could be in physical activity programs (ability)?</p>	<p>ما مدى استعدادك لتتضمن النشاط البدني في يومك و ما مدى نجاحك أو قدرتك في المشاركة في برنامج تمارين بدنية منتظمة؟</p>

APPENDIX VI

INTERVIEW GUIDE – MOTHERS

Healthy Eating

English	Arabic
<p>What does a healthy meal means to your child? <i>Probe: How important is to include healthy meals and snacks to your child? Why?</i></p>	<p>ما يعني الوجبة الصحية لولدك؟ دقق: ما مدى أهمية تناول وجبات صحية ووجبات خفيفة صحية بالنسبة لولدك؟ لماذا؟</p>
<p>How healthy eating might affect your child's life?</p>	<p>باعتقادك، كيف يؤثر الأكل الصحي على حياة ولدك؟</p>
<p>What makes it easy and difficult for your child to get healthy meals? <i>Probe: tell us whether there are people who affect your child's eating habits, or in their environment)</i></p>	<p>ما الذي يجعل من السهل و من الصعب الحصول على وجبات صحية لولدك؟ دقق : أخبرنا إذا كان هناك أشخاص يؤثرون على عادات ولدك الغذائية، أو في محيطه؟</p>
<p>Tell me more about the ways your child reward him- or her-self for eating healthy?</p>	<p>خبريني شوي عن كيف ولدك يكافئ بها نفسه على تناول الأكل الصحي ؟</p>
<p>How could we make program to address nutrition attractive to students? (how they should be given)</p>	<p>إذا قمنا برعاية برنامج لمعالجة سلامة صحة الأطفال وأكلهم الصحي، فكيف نجعلها جذابة للتلامذة؟ (كيف ينبغي أن تعطى)</p>
<p>How do you see your child's willingness to eat healthier foods during meals and how do you perceive your child's ability to overcome the barriers of healthy eating?</p>	<p>كيف يتشوفي مدى استعداد ولدك لتناول كميات صحية عند الوجبات وقدرته على تغلب حواجز التي تحد من تناول وجبات صحية؟</p>

Physical Activity


English	Arabic
<p>What is the first thought that comes to your child's mind when your child thinks of exercise? Probe: How important is exercising to your child? Why?</p>	<p>ما هي الفكرة الأولى التي تتبادر إلى ذهن ولدك عندما يفكر في النشاط البدني؟ دقق: ما مدى أهمية النشاط البدني لولدك؟ لماذا؟</p>
<p>What effects does your child think exercising may have on him/her?</p>	<p>كيف يؤثر النشاط البدني على ولدك؟</p>
<p>What makes it easy and difficult for your child to exercise? Probe: people, environment, etc.</p>	<p>ما الذي يجعل من السهل و من الصعب لولدك ممارسة النشاط البدني؟ دقق: أشخاص يؤثرون على عادات الرياضية، المحيط.</p>
<p>Tell me more about the ways your child rewards him-or her-self for exercising?</p>	<p>خبريني شوي عن الطرق التي يكافئ ولدك نفسه بها على ممارسة الرياضة؟</p>
<p>How could we make program to address children active living or PE sessions attractive to students? (how they should be given)</p>	<p>إذا قمنا برعاية برنامج لمعالجة الأطفال ليعيشونا حياة نشيطة، كيف يمكننا أن نجعلها جذابة للتلامذة؟ (كيف ينبغي أن تعطى)</p>
<p>How much does your child able to include exercising in the day and how successful do you think your child could be in physical activity programs (ability)?</p>	<p>ما مدى استعداد ولدك ليشتمل النشاط البدني في يومه و ما مدى نجاحه او قدرة ولدك في المشاركة في برنامج تمارين بدنية منتظمة؟</p>

APPENDIX VII

NUTRITION TIPS AND GUIDE

Myriam Dagher,
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Guide to Healthy Eating



The best way a balanced eating pattern, is to eat variety of foods from the 5 food groups per day, in the recommended amounts!

- ☺ Food diversification helps secure sufficient quantities of macronutrients and micronutrients.
- ☺ The major nutrients are carbohydrates, proteins, and fats, while micronutrients are vitamins and minerals.

The goal of the base of the pyramid is to encourage drinking water.

The Food Pyramid is a guide to healthy eating

الإرشادات التوجيهية الغذائية Faculty of Agriculture and Food Sciences, Department of Nutrition and Food Sciences, American University of Beirut.

Healthy School Lunch



Whole Grains & Protein Foods

Starting every day the whole grains way gives kids and teens B vitamins, minerals, and fiber to feel fuller longer so they stay alert to concentrate at school. Proteins can include white cheeses and turkey that provide important nutrients including protein and iron.

Vegetables

A variety of vegetables helps kids get the nutrients and fiber they need for good health. They can also be included in the sandwich given.

Snack(s)

Keep snacks small. Depending on your child's age and activity level, they may need one or two snacks during school. (see the next page for healthy snacks ideas)

Fruits

A fruit should be available in the school lunch box to provide the nutrients that are important for kids' health, such as potassium, dietary fiber, vitamin C, and folate.

United States Department of Agriculture (USDA). (2016). MyPlate Guide To School Lunch. Available at <http://www.choosemyplate.gov/>

Snack Ideas for School

Mix of Nuts (walnuts, almonds, pistachios, cashews, etc) that can be added to fruits



Whole Fruits Mix, Less volume more nutrients!



Air-popped Popcorn with dried spices



Harvard School of Public Health. Packing a healthy lunchbox. Available at: <https://www.hsph.harvard.edu>

Snack Ideas for School

Kaak (zaatar, milk, multicereal)



Spread hummus on a tortilla or bread. Top with a slice of turkey, low-fat cheese and lettuce. Then roll it up!



Carrot sticks or sliced veggies



Whole grains biscuits
Or **Cereal bars**



Harvard School of Public Health. Packing a healthy lunchbox. Available at: <https://www.hsph.harvard.edu>

Reduce Snacking?



Don't confuse boredom for hunger. Offer your child some water as it can help to take up space in the stomach, leading to a feeling of fullness and reducing hunger.

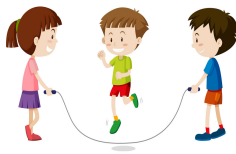
Move it! Try to engage your child into an activity that they like such as coloring, building blocks, dancing, etc. These activities can avoid unnecessary snacking.



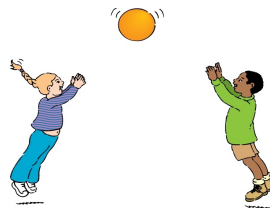
Limit the number of unhealthy snacks in your home. Instead, offer healthier options of healthy snacks.



Keep your child active for 60 minutes everyday



Jump rope: go outside your building or the playground and jump rope at a rhythm!



Balloon ball: There are endless ways to play with balloons indoors. Try to keep it off the ground or just play catch!



Dance party: Turn on the music and shake your body. When the music stops, freeze in your pose and hold it until the music begins again.



Parcours! Make your own sport rout with pillows and toys and challenge yourself!

Fun Guide for Healthier Children

Track the picture with the codes!

Eat a **V A R I E T Y** of foods



1. Eat more



and whole grains

2. Eat foods lower in solid



3. Get your



rich

4. Be



Code

A=		N=	
B=		O=	
C=		P=	
D=		Q=	
E=		R=	
F=		S=	
G=		T=	
H=		U=	
I=		V=	
J=		W=	
K=		X=	
L=		Y=	
M=		Z=	

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دليل الطعام الصحي



الهرم الغذائي هو دليل على تناول الطعام الصحي

أفضل طريقة لنمط أكل متوازن ، هي تناول مجموعة متنوعة من الطعام من المجموعات الغذائية الخمسة يوميا ، بالكميات الموصى بها.

تنوع الغذاء يساعد على تأمين كميات كافية من المغذيات الكبرى و المغذيات الدقيقة. ☺

المغذيات الكبرى هي النشويات، و البروتينات، و الدّهون، أما المغذيات الدقيقة ☺ فهي الفيتامينات و المعادن.

الهدف من قاعدة الهرم هو التشجيع على شرب المياه.

الإرشادات التوجيهية الغذائية Faculty of Agriculture and Food Sciences, Department of Nutrition and Food Sciences, American University of Beirut.

الغذاء المدرسي الصحي



الوجبات الخفيفة

الحفاظ على وجبات خفيفة صغيرة، وفقا لمر طفلك ومستوى نشاطه، يحتاجون الي وجبة خفيفة واحدة أو اثنتين أثناء المدرسة. (انظر الصفحة التالية للحصول على أفكار الوجبات الخفيفة الصحية)

الحبوب الكاملة والبروتين

تناول الحبوب الكاملة في بداية كل يوم تمنح تزود الاطفال بالمعادن و الالياف و الفيتامينات و تمنحهم الراحة و النشاط و التركيز خلال يومهم. يمكن أن تشمل البروتينات، الأجبان البيضاء و الحيش الذين يوفران العناصر الغذائية الهامة بما في ذلك الحديد.

الخضروات

مجموعة متنوعة من الخضروات تساعد الأطفال على الحصول على المواد الغذائية و الألياف التي يحتاجونها لصحة جيدة. و يمكن أيضا أن تدرج في السندويش.

الفواكه

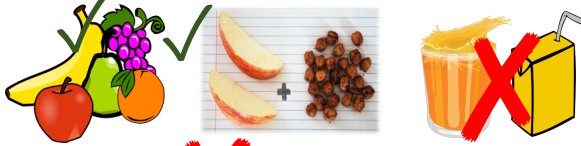
في صندوق يجب أن تتوفر الفواكه الغذاء المدرسي لتوفير العناصر الغذائية المهمة لصحة الأطفال ، مثل البوتاسيوم و الألياف الغذائية و فيتامين C و الفولات .

United States Department of Agriculture (USDA). (2016). MyPlate Guide To School Lunch. Available at <http://www.choosemyplate.gov/>

أفكار وجبات خفيفة للمدرسة



مزيج من المكسرات (الجوز واللوز والفتق والكاجو وغيرها) التي يمكن إضافتها إلى الفواكه



مزيج الفواكه الكاملة ، كمية أكثر من العناصر الغذائية!



الفشار مع التوابل المجففة

Harvard School of Public Health. Packing a healthy lunchbox. Available at: <https://www.hsph.harvard.edu>

أفكار وجبات خفيفة للمدرسة



كعك (زعر ، حليب ، متعدد الحبوب)



تحضير ساندويش الحمص (متيل) مع الخبز العربي او خبز التورتيللا. يمكن إضافة شريحة او شريحتين حبش و جبنة قليلة الدسم و الخضار مثل الخس و البندورة



شرائح الجزرة أو الخضار



الحبوب الكاملة البسكويت أو قضبان الحبوب

Harvard School of Public Health. Packing a healthy lunchbox. Available at: <https://www.hsph.harvard.edu>

تقليل الوجبات الخفيفة الزائدة؟



لا تخلط بين الملل والجوع. قدم لطفلك بعض الماء لأنه يمكن أن يساعد في ملأ مساحة في المعدة ، مما يؤدي إلى الشعور بالامتلاء والحد من الجوع.

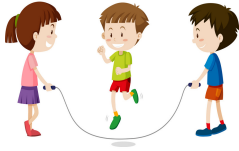


الحركة! حاول إشراك طفلك في نشاط يحبه مثل التلوين ، البناء ، الرقص ، إلخ. هذه الأنشطة يمكنها تجنب الوجبات الخفيفة غير الضرورية.

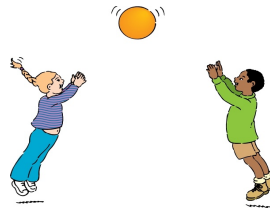


الحد من عدد الوجبات الخفيفة غير الصحية في منزلك. بدلاً من ذلك ، قم بتقديم خيارات صحية للوجبات الخفيفة.

حافظ على نشاط طفلك لمدة 60 دقيقة كل يوم



القفز على الحبل: الذهاب خارج المبنى أو إلى الملعب والقفز على الحبل مع إيقاع!



كرة البالون: توجد طرق لا نهاية للعب بالبالون بالداخل. حاول أن تبقىها بعيدة عن الأرض أو مجرد لعب!



حفلة رقص: شغل الموسيقى واهز جسمك. عندما تتوقف الموسيقى، قم بتجميد جسمك مع الاستمرار حتى تبدأ الموسيقى مرة أخرى.



طريقك الرياضي الخاص! اصنع طريقك الرياضي الخاص مع المخدة والألعاب وتحدي نفسك!

دليل المرح لأطفال أكثر صحة

اتبع الصورة مع الرموز باللغة الإنجليزية!

Eat a **V A R I E T Y** of foods

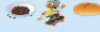


1. Eat more



and whole grains

2. Eat foods lower in solid



3. Get your



rich

4. Be



Code

A =		N =	
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G =		T =	
H =		U =	
I =		V =	
J =		W =	
K =		X =	
L =		Y =	
M =		Z =	

APPENDIX VIII

EXAMPLE QUOTES ABOUT HEALTHY EATING

Themes – Healthy eating	Subthemes	Children Quote Examples	Mother Quotes Examples
Perceptions of healthy eating behavior and its impact on children’s wellbeing	Perceived meaning of healthy eating	For me, healthy meals are like fruits, vegetables, and salads (B, PR, FGD-3)	For my daughter, healthy eating is vegetables and fruits (M-1, PU)
		Eating meats is healthy (G, PU, FGD-2)	Healthy eating for me is that he [my son] eats Lebanese stew made at home and also eating vegetables and fruits, so that’s healthy eating (M-2, PR)
		Healthy food like red beetroot (G, PU, FGD-1)	
		So to me healthy eating just means the way I usually eat, by not counting how much potatoes or stuff like that, so healthy eating means how I normally eat...if that makes sense (G, PR, FGD-1).	I always focus on the issue of sugar, you know children love sugars, so I always tell them to eat homemade and low sugar foods (M-4, PR)
		Healthy eating for me is not only eating vegetables and fruits...so I personally eat healthy food as in like a normal person eats per the day (G, PR, FGD-1)	They [my children] know... I tell them that healthy eating does not contain a lot of sugar and fats in it and that it’s not fried (M-2, PU)
		I used to eat veggies every day but then I got disgusted and bored of eating greens (G, PU, FGD-1)	
		I mean, repetition like eating green makes you upset and makes you feel like you want to eat anything else...you get bored (B, PU, FGD-3)	
Impact of healthy eating on children’s lives		If we don’t eat healthily, we will have tooth decay (G, PU, FGD-2)	They [my children] used to say that healthy eating makes me fit, prevent weight gain later on, and is good for health such as not being obese (M-1, PU)
		I mean, if I eat vegetables, I might lose a bit of weight (G, PU, FGD-2)	
		I keep on rushing myself, I don’t like sitting down, I like to move and when I don’t eat something healthier I just feel	Healthy eating reduces the risk of diabetes because I’ve done for him [my son] a health screening and I

		<p>like I want to lay down or I just don't want to go to someplace...well nobody knows why, but I am always tired...so when I eat fruits and vegetables it makes me more energetic (G, PR, FGD-1)</p> <p>Healthy eating gives us calcium and iron (B, PR, FGD-3)</p> <p>Watching how a lot of my friends don't eat very healthy and I am more fit than them, not speaking about anyone but you can say I am more fit than them because I don't eat a lot of unhealthy foods (G, PR, FGD-1)</p> <p>When we eat healthy, we will become stronger and our muscles will grow (B, PU, FGD-3)</p>	<p>am always following upon them (M-5, PR)</p>
	<p>Disconnection between children's healthy eating knowledge and attitudes</p>	<p>Last year, my friend used to bring chips and apples with him, he used to eat the chips and throw the apple. I told him that he should eat the apple since it gives him energy, but he told me that the apple does not give him anything (B, PU, FGD-3)</p> <p>I don't see that there are positive effects of healthy eating and it does not have an effect on me (G, PU, FGD-2)</p> <p>I don't feel the benefits of healthy eating on my life, I just hear those benefits from my sister (B, PR, FGD-2)</p>	<p>Subtheme not described by mothers</p>
<p>Determinants of healthy eating</p>	<p>Individual determinants Preference and food characteristics matter!</p>	<p>If there is a meal that is made from something healthy like broccoli, we might not like it (G, PU, FGD-1)</p> <p>What makes it hard for me to eat healthy is that, there are many vegetables that I don't like (B, PR, FGD-2)</p>	<p>If he [my son] doesn't like the meal, he wouldn't eat it even if the meal is healthy...if he doesn't like the meal, he wouldn't even try it (M-1, PU)</p> <p>He [my son] doesn't eat fruits, except bananas or maybe if grapes are available, otherwise he wouldn't eat. Also, there is</p>

	<p>I am a picky eater so I eat the fruits and vegetables that I like not the one that I don't (G, PR, FGD-1)</p> <p>There is some healthy foods that are unpleasant because they taste bitter (G, PU, FGD-1)</p> <p>There is a citrus taste inside some healthy foods, which I don't like (G, PU, FGD-2)</p> <p>Sometimes the taste...there are some vegetables, especially those that are beneficial for us, that doesn't taste good (B, PU, FGD-3)</p> <p>Restaurants have so many good foods as compared to those at home because they contain sugars (B, PR, FGD-2)</p> <p>I prefer biscuits and cakes because they contain more sugar (G, PU, FGD-2)</p> <p>While my mom is cooking, the smell of the food is really appealing (G, PU, FGD-1)</p> <p>When it [healthy foods] does not look good or when it looks bad, it's no longer appealing to us to eat (B, PU, FGD-3)</p> <p>For example, some fruits that look soft make us think that they are not tasty (G, PU, FGD-1)</p>	<p>no way he would eat vegetables (M-3, PU)</p> <p>My girl doesn't like healthy foods, even if I make for her a pancake topped with banana, she wouldn't eat it, because for her, healthy is not tasty (M-3, PR)</p> <p>Sometimes there are some healthy foods that they [my children] don't like. I try to convince my children to eat those foods but it doesn't really work, that's because there are some types of vegetables, for example, that they don't like, they simply don't feel like eating them (M-4, PR)</p>
<p>Individual determinants Is it boredom or hunger?</p>	<p>When the COVID-19, I started eating a lot more than I used to, because like I started going back and forth to the kitchen just because I was bored, like eating would make me less bored for some reasons...so I started eating and eating (G, PR, FGD-1)</p> <p>Because I went to the mountains after the explosion, I really didn't feel like hunger</p>	<p>Honestly, sometimes I feel that activities make their [children] day full and reduce overeating. When he [my son] tells me that he wants to eat and I am like...why? You just ate now...he replies that he has nothing to do. It's like they [children] seek foods when their schedule is empty (M-5, PR)</p>

	<p>...I didn't feel like I want to eat (G, PR, FGD-1)</p> <p>When there is nothing to do, I feel that I am hungry and overeat (B, PR, FGD-3)</p> <p>I usually wake up early in the morning, so here in the mountains I can go to the farm and have fun, so I feel like time flies, and I don't feel like I am hungry, like when I have nothing to do (B, PR, FGD-2)</p>	<p>Now, we are back to online courses, so during the school's break, he [my son] gets the chance to play, have fun, or watch TV. Of course, he will get busy with playing and forget about eating (M-6, PR)</p>
<p>Individual determinants Rewards for eating healthy</p>	<p>When we eat healthy for a long period, we reward ourselves by eating a chocolate (G, PU, FGD-2)</p> <p>When we eat healthy, our fathers give us money (G, PU, FGD-1)</p> <p>We ask mom and dad to get us on a trip and do an enjoyable activity after eating healthy for a while (B, PU, FGD-3)</p> <p>If I eat healthy throughout the week, for example, my mom and dad surprise me by dining out and eating burgers (B, PR, FGD-2)</p> <p>When I eat foods that are healthy all week, my family and I would have lunch outside during the weekend and eat desserts afterward...we really enjoy it! (B, PR, FGD-2)</p> <p>Sometimes my parents like to reward me with other stuff like unhealthy food like, on Saturdays, unhealthy lunch let's say, we go to the park or something. Like they don't do this always, they love us and they like the best parent ever, but like when you are going to this place because you did this, you feel like it's a reward. Like they don't do this always, they love us and they like the best parent ever, but like when you are going to</p>	<p>If I see my child eating well and healthy, I prepare for him, from time to time, foods like hamburger or pizza (M-3, PU)</p> <p>We usually tell him [my son] that if he eat all his meal, we will buy for him an ice-cream. This way we encourage him to eat and try new foods. Even in school, when he was disciplined for a long time, I rewarded him with a gift (M-1, PU)</p> <p>We try to avoid rewarding our kids for doing things that should do for themselves and for their own health, you know I mean like she [my daughter] has any reward for doing the right things if that makes sense. So what we are going to teach her is that if you eat healthy you have a strong body, if you eat healthy you don't get sick as much, if you eat healthy these kinds of intrinsic rewards or the things we are trying to build in her mind are going to last longer (M-1, PR)</p> <p>She [my daughter] doesn't reward herself for eating healthy and we don't tell her that if you eat salads for example you get</p>

	<p>this place because you did this, you feel like it's a reward (G, PR, FGD-1)</p>	<p>something in return (M-2, PR)</p> <p>Mostly, he [my son] turns happy when he eats sweets only once per week. He mainly feels proud that he was able to limit his sweet intake (M-7, PR)</p> <p>He [my son] keeps talking about his achievement all day, that he ate something healthy. For example, he once ate a meal and when I told him that this is healthy, he didn't stop talking about this achievement all day (M-8, PR)</p>
<p>Individual determinants Perceived ability to eat healthier</p>	<p>I don't feel like I can always eat healthy because I could not resist unhealthy foods (G, PU, FGD-1)</p> <p>I am not sure how confident I am to eat healthily...the other types of food [unhealthy] are appealing to me! (G, PU, FGD-2)</p> <p>I don't really see myself eating healthy foods (B, PR, FGD-2)</p> <p>I try to reach the goal of eating healthy, if it doesn't work from the first time, I keep on trying (B, PR, FGD-3)</p> <p>I think If I put a goal and I say I will do it, of course, I can do it. So if I put my mindset to it I will do it (G, PR, FGD-1)</p> <p>I think I can reach the goal of healthy eating because when I usually choose a goal in my life, I work for it to achieve it, even if it makes me tired (B, PU, FGD-3)</p> <p>When I got convinced to eat healthier and dined out with my friends and family, I used to order light foods even if</p>	<p>He [my son] can surely eat healthy foods. If he wants to eat healthier he can (M-1, PU)</p> <p>I think she [my daughter] can eat healthier (M-2, PU)</p> <p>When we say we will have healthy food for tomorrow, she [my daughter] wakes up and has corn flex for breakfast. I mean that she prefers to eat milk and corn flex instead of eating a sandwich (M-2, PR)</p> <p>Her [my daughter] personally is a rule follower. So she is 100% able to eat healthy, she buys at school what she knows she should so she doesn't spend it on chocolate or candies or anything like that so I think she is 100% capable to eat healthy (M-1, PR)</p> <p>I think he [my son] is able to eat healthy because he's used to this...we always eat at home healthy, he has no other option (M-7, PR)</p>

	<p>they eat unhealthy foods (B, PR, FGD-3)</p> <p>Sometimes I convince myself that I just don't want to eat healthy...sometimes I am never going to eat healthy.. because most of the healthy food I don't like. So like I only think about the food I don't like. I tell myself things negatively which I have to stop. I have to say to myself that I like this healthy food like I have to eat it, not like oh I don't like this healthy food. Otherwise, I am never going to eat healthy foods (G, PR, FGD-1)</p>	
<p>Social determinants Parental and family influence</p>	<p>My sister, my brother, and I eat fruit salads all together (B, PU, FGD-3)</p> <p>My sister loves meats so much...I tried it once and I loved it! (G, PU, FGD-2)</p> <p>The thing that is here right now is my grandparents encourage me to eat healthy food and they bring healthy food in the house so I can eat it. So when I was in the mountains in the summer, my grandma always gave me a banana, like every two hours, she goes like you have to eat this, you have to eat this, and I started liking it more and I started having a habit of eating a banana and asking for bananas. So well people that encouraged me are my parents and my grandma (G, PR, FGD-1)</p> <p>My mother encourages me to taste new foods, and then I start eating them (G, PU, FGD-1)</p> <p>There are some healthy foods that I don't like, but my parents encourage me to eat these foods and when I do, I start liking them (G, PU, FGD-2)</p>	<p>He [my son] needs support. If he saw his sister eating foods that he doesn't like, he starts to think about it and end up trying these foods (M-1, PU)</p> <p>If he [my son] wants to eat something healthy, I encourage him and he starts eating it regularly (M-3, PU)</p> <p>I should drive them [my children] to eat healthily...when I used to prepare a salad and grilled foods for myself, they used to tell me that they want to eat the same. So the idea is that I should start eating healthy for them to do so (M-8, PR)</p> <p>I always try to eat healthily and focus on everything related to healthy. I am even enrolled in an online course related to nutrition so when they know that and notice that I always bring healthy foods, they start doing the same. One of my girls always tell me that I want to eat healthy like you (M-4, PR)</p>

My sisters always want to order from restaurants, but my mom doesn't accept and encourage her to eat homemade foods (B, PU, FGD-3)

My mom, dad, and bigger sister always encourage me to eat healthily. Last time, my mom followed the same diet that I am following to motivate me (B, PR, FGD-3)

Our mothers always give us fruits like apples, bananas, and strawberries to school (B, PR, FGD-2)

My mother gives me tasty foods to school...foods that are healthy and taste good (B, PU, FGD-3)

I always try to encourage him [my son] to eat healthy because when I was young, I suffered from obesity and start paying attention to my health. So I always tell him this story and that we have to pay attention to our salt intake for example (M-5, PR)

While he [my son] is eating, I ask him a question, if he guesses the right answer, he has to eat more. Otherwise, he loses and I eat the food instead. In this way, I try to encourage him to eat specific foods during mealtime (M-7, PR)

From my personal experience, getting the kids involved is important. So my girl is making all her food now so she knows she has to have a sandwich and then a vegetables and then a fruit and a snack so having options for her and letting her know what the choices are I think can encourage her to enjoy her snack at school more because she chose it (M-1, PR)

To encourage him [my son], I started a diet with him and we started eating the same foods (M-5, PR)

We, at home, encourage healthy eating. We only eat junk food once a week or foods high in carbs (M-2, PR)

We have a schedule at home, for example, fast food is only allowed once a week, even when we go out, we usually choose those restaurants that are healthier than others. So this is a rule that is clear to them (M-2, PR)

	<p>When we are eating healthy food, my sister or my brother starts eating chocolate so they don't let me eat the healthy food that I was eating (G, PU, FGD-1)</p> <p>When I am eating fruits at my aunt's house, my aunts end up bringing other unhealthy snacks to the table (G, PU, FGD-2)</p> <p>My cousins start telling me...why are you eating these things [healthy foods]...when they see me eating healthy (G, PR, FGD-1)</p> <p>Sometimes, my brother brings with him chips. I love apples but when he brings chips, I found myself eating chips (B, PU, FGD-3)</p> <p>When I want to eat fruits, I find that there are other foods like when I am at my cousins' house. They order foods from outside so I take a step back and don't eat the fruits that I have (B, PR, FGD-2)</p> <p>My younger sister and my brother don't encourage me at all. They always tell me to come and eat with them instead of following the diet (B, PR, FGD-3)</p>	<p>My husband for example doesn't love Lebanese stew, so I have to prepare fried foods from time to time. He also loves chocolate...I am not blaming him (M-3, PR)</p> <p>He [my son] finds difficulties eating specific healthy foods that other people are not eating. What affects his eating habits is when he's on a diet and notice some children in our family eating foods that they are not supposed to eat. For example, he saw his cousin eating jelly beans last time and felt like eating these foods (M-8, PR)</p>
<hr/> <p>Social determinants Peer influence</p>	<p>Sometimes one of your friend tells you that she went to this restaurants or she ate this last night or something, so you're like why don't I do this? (G, PR, FGD-1)</p> <p>When I see someone biting into a candy bar or anything like chocolate or these kinds of things, it makes me think like, why I don't get unhealthy food? (G, PR, FGD-1)</p>	<p>They [my children] don't interact with their friends as much as they interact with their family members, so I don't think their eating habits are influenced by their friends (M-1, PU)</p>

My friend brings unhealthy foods that I used to eat. Of course, I still like them, but when he does so, he reminds me of them again and I wouldn't want to continue my diet (B, PU, FGD-3)

When my friend and I wants to go out for example to the mall and decide that I don't want to eat junk food for this week. But then, when I see ordering junk foods, I start to think that eating junk food once is okay and I ordered the same foods (B, PU, FGD-3)

Seeing my friends eating unhealthy foods in front of me, like pizza, makes me wants to eat the same (B, PR, FGD-3)

I wouldn't eat fruits and vegetables if I see my friends eating burgers or anything else. This makes me wants to eat a burger as well (B, PR, FGD-2)

It makes me frustrated when my friends have money and go buy foods from the school canteen. It makes me want to buy the same (G, PU, FGD-3)

My friend buys foods from the school canteen and offers me what she has brought. I refuse to take it as I decided not to buy from the canteen. But then I end up buying chips for example from there (B, PU, FGD-3)

If your friend see you eating at school a homemade sandwich, he or she goes like, why are you eating the sandwich? Come and buy with us anything else from the school canteen...(G, PU, FGD-1)

My friends start laughing on me when they see me eating

	<p>something healthy (G, PU, FGD-2)</p> <p>When our friends see others eating healthy foods that they don't like, they start criticizing them (G, PU, FGD-1)</p>	
Availability and affordability of foods	<p>So it's easy to give up on ice-cream not because I don't love ice-cream, but I think its partially because we don't eat a lot of unhealthy foods in or house, and we don't have unhealthy food every day (G, PR, FGD-1)</p> <p>If fruits were available around us, like in the fridge or at school, healthy eating would have been easier for us (G, PU, FGD-1)</p> <p>I eat healthy if there was healthy foods at home, those made by my mom for example (G, PU, FGD-2)</p> <p>I love apples and bananas. I would have eaten more apples and bananas if they were available at home or school (B, PU, FGD-3)</p> <p>If apples or cucumbers were available at home and everywhere, this would encourage me to eat healthier foods (B, PR, FGD-1)</p>	<p>It is what foods are available...in our home, in her lunchbox, that's what she [my daughter] has...so in general, when we sit down together to eat for dinner or lunch, this is what we have...it is not like I don't like this or I want to have something unhealthy instead...so she doesn't have a choice, this is what is available. When she needs a snack, she is going to come to the kitchen but what she is going to find are fruits and vegetables and crackers, you know, yogurt and these kinds of things. So even in school, she takes her food with her, she doesn't buy foods at school maybe once every few weeks (M-1, PR)</p> <p>Unhealthy foods like chocolate and chips shouldn't be accessed easily. So in general, the food available in our home are healthy (M-3, PU)</p> <p>Children started eating all the time, so I am trying to eliminate unhealthy foods from home and bring only healthy foods (M-7, PR)</p>
	<p>I think the other thing is that chocolate and chips are cheaper than healthy food like you can find a healthy granola bar and an unhealthy granola bar and the unhealthy bar is much cheaper than the healthy</p>	<p>In general, healthy foods I find in Lebanon are more expensive. Yes prices...but that's not on her really that's all on me. But it makes it harder for her to eat healthy because</p>

	<p>one. So my sister and I have basketball like an hour and a half between each other, and we can't go home and come back. So we go out and we do some shopping as my sister wants to snack and play. I then found some chips that are 1,000 LBP and then some cheese sticks that were 3,000 LBP! (G, PR, FGD-1)</p> <p>Fruits are really expensive, it's like you want a gift that is expensive but your dad cannot buy it for you (G, PU, FGD-1)</p>	<p>healthy options are more expensive...like even simple things like white flower versus brown flower...or you know I can buy white sugar or honey? I think honestly the cost is an obstacle (M-1, PR)</p> <p>We cannot deny that healthy foods are expensive and this also affects our choices (M-1, PU)</p>
Food advertisements	<p>The hard obstacle is when I see somebody eating something unhealthy like I feel that I want to do these things...like commercials...when you see commercials on TV, somebody eating unhealthy food...I want to do this (G, PR, FGD-1)</p> <p>The videos that are mostly shared, such as those on YouTube, show us new foods, foods that we usually don't see. This increases our cravings and we start eating foods from outside (G, PU, FGD-2)</p> <p>When my father and I have a healthy dinner at night while watching TV, we always get junk food advertisements and I start thinking about these foods, like burgers or crispy (B, PR, FGD-2)</p> <p>I always get hungry when I see food advertisement on TV (B, PR, FGD-3)</p> <p>When I see food on TV, I start craving it even if I don't like it (B, PU, FGD-3)</p> <p>And when they put on the television foods advertisement or ads, we get hungry and crave for that food (B, PU, FGD-3)</p>	<p>Personally, we do not have a TV, she [my daughter] does not watch TV and she doesn't have access to the internet on her own so she is not really being exposed very much to advertisements or these kinds of things so I think for her these things doesn't matter huge (M-1, PR)</p> <p>Food advertisement does not really affect her [my daughter] eating habits (M-2, PU)</p> <p>We were once having a healthy dinner with a tuna salad, suddenly, Twix and those kinds of things appeared on the TV. They [my children] even watch these foods ads on YouTube and they learn from these videos how to prepare these foods at home...all of them are unhealthy (M-3 PR)</p> <p>They [my children] spend their time on social media so every time they see a new meal or food ad, they need to try it because it's appealing for them. This is being exasperated by the increased use of YouTube and ticktock, especially now (M-8, PR)</p>

			<p>Before anything else, food advertisements on social media is critical! First of all, everything displayed is unhealthy. Secondly, food advertisements cross our eyes all the time during the evening while watching TV, and of course, children are always there. Most of these ads include chips or fried food or ice cream. For example, if they see any food on the TV such as chocolate they come to the kitchen and start searching for this food and if found, they would directly eat it. Or they keep asking me to go out and eat burgers (M-4, PR)</p> <p>They [my children] are spending so many times on YouTube and ticktock so they want to try everything they watch, so of course, when they will watch these food advertisements, they will need to try it (private school)</p>
School environment	School lunch and cafeteria	<p>We do not know what they [school cafeteria staff] are using while preparing foods...the type of oil for example (G, PU, FGD-1)</p> <p>I prefer to bring my school lunch from home because homemade foods are safer and cleaner than those that are ready-made (G, PU, FGD-1)</p> <p>While preparing foods, maybe they [school cafeteria staff] are using ingredients that might kill us...unknown ingredients (G, PU, FGD-1)</p> <p>When my mom is preparing foods at home, I got encouraged to eat foods made by her because I see her wearing gloves (G, PU, FGD-2)</p>	<p>Basically in our small school cafeteria, there are only limited things to buy, so they [children] will surely choose what's available for them (M-7, PR)</p> <p>The school cafeteria encouraged my son to eat unhealthily. The food available there are unhealthy like bakeries and 'manakish' (M-8, PR)</p> <p>They [my children] do not allow me to give them fruits in their lunchbox. My son tells me that the quality of fruits doesn't stay good or that he does not like apples. You know he gives also excuses like he doesn't have the time to eat them in school because</p>

When I need to buy foods from the school cafeteria, my mom always advises me to bring my foods from home instead because we don't know what ingredients they contain (B, PU, FGD-3)

he needs to play with his friends (M-3, PU)

In general, they [children] do not accept to bring homemade sandwiches with them to school. I don't know what's the problem there...I wish I can attend a school recess somebody to discover the reason behind that (M-1 PU)

Foods in the school cafeteria are always non-packaged...they are always exposed to the outside air, which might be polluted (G, PU, FGD-2)

I always buy a croissant from the school cafeteria because these kinds of foods are always packaged and wrapped well (G, PU, FGD-1)

There are no cheese-made sandwiches in our school canteen or at least those healthy foods that I love (G, PU, FGD-1)

The school cafeteria sells 'manakish' , like cheese or zaatar [dough bread with thyme or cheese], but only in the morning, and in the afternoon they only sell salted pretzels, chocolate, and juice. And the only time you can get healthy foods is in the first recess then you will have to bring your own foods" (G, PR, FGD-1)

The school cafeteria always brings 'manakish', which I find unhealthy, so I bring with me my own lunch from home (B, PR, FGD-2)

In our school, there is a small shop which we can buy from. Here, there are a lot of unhealthy foods always placed in fronts of us such as croissants and chocolate. It makes me want to eat these kinds of foods, of course when I have money in my pocket (B, PR, FGD-2)

Teachers as role models	<p>We get encouraged to eat healthier when our schoolteacher advises us to eat healthy foods to grow up (G, PU, FGD-2)</p> <p>I love it when our teacher discusses healthy eating during a school course (G, PU, FGD-1)</p> <p>I think teachers in our school play a key role because they guide us on how we can eat healthier (B, PU, FGD-3)</p> <p>My teacher used to remind me that I should not eat junk foods to stay healthy, but he always orders junk foods. So sometimes, I feel like I want to remind him that he's teaching us what we have to eat, but he's doing the opposite (B, PR, FGD-3)</p>	<p>The school is trying to do programs and talk about healthy foods but when you look at what the teacher is saying and versus what they are able to buy at school it is just a total mismatch. So in school, they have like a small shop, full of chocolate and chips and candy bars and junk foods really! So if the teacher in the school is explaining that they should eat healthily and that they shouldn't eat chocolate or chips in their lunch, but then you go downstairs to the shop, that's all that you can buy. Mixed messages are being sent to them, so our kids are smart and they are knowing what you are saying but your acting completely different, they are going to watch how you are acting not the words coming out of your mouth so I think something would be attractive to kids of their age is consistent; messages that are consistent. We say that you shouldn't have chocolate and you have bars or snickers but consistent messages I think they really pick up on that. They understand if someone is being critical or when someone is saying just something they have to say, and I think kids of this age are really impressed by someone who says this and they do this and they like that. I think it is really powerful for them (M-1, PR)</p> <p>The teacher of the nutrition class advises children to choose healthy options. But when they pass by the</p>
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			cafeteria, they don't have any option (M-2, PR)
Suggestions to encourage healthy eating among children	Individual- and family-based strategies	<p>I wish there was something that makes a sound like an alarm, for example, which notifies me every time I want to eat junk food that no, you shouldn't eat junk food, you should eat vegetables instead (B, PR, FGD-2)</p> <p>I wish there was something that convinces me why healthy eating is beneficial to me and what would I get if I eat healthy foods and avoid unhealthy ones (B, PR, FGD-2)</p> <p>A robot is a good idea...having an application/robot that always advises us to eat healthier, brings and encourage us to healthy foods, and closes the door of the kitchen (B, PR, FGD-3)</p> <p>What would encourage me is to have a schedule for us printed on paper; let's say Monday you have to it an apple, or Tuesday you have to eat like broccoli or something healthy. And, every time you check something off, honestly not lying, you would get points. And, when you get to this number of points, you would get a bigger reward like, let's say, a day free of school, a day off or something. If you get this amount of points with your classmates or with your class or with your grade even (G, PR, FGD-1)</p> <p>Maybe like if I eat a kind of fruit every day for like a week, and then I would change this food to another thing. I can have a habit of eating fruits and vegetables, it doesn't have to be fruits and vegetables, it can be milk or</p>	Subtheme not described by mothers

water to stay hydrated (G, PR, FGD-1)

I think that I am willing to eat healthy if I can replace the healthy foods that I don't like...so I mix them with something else and I then I can eat (G, PR, FGD-1)

It feels like there is a wider variety of ways to make healthy foods still tasty and that you're not always eating the same like chocolate for example. I mean like fruits and vegetables, they can be made like a fruit salad that is healthy and tasty in a way you'd like...it's a dessert (G, PR, FGD-1)

Let's say I am drinking milk, so I pretty much eat Oreo with it sometimes, so you're enjoying it while still eating healthy, it's like picking a balance you know (G, PR, FGD-1)

I prefer to eat in a balanced way; not a lot of healthy foods nor a lot of unhealthy (B, PU, FGD-3)

One way for us to eat healthier is by replacing regular chips with a healthier version of chips, which is free form sugar, for example (B, PR, FGD-2)

We would eat healthier if our parents encourage us to do so (B, PU, FGD-3)

I wish that there is someone at home that would always encourage me to eat healthier...to tell me to eat at home when I want to eat in a restaurant, for example (B, PU, FGD-3)

School-based strategies and approaches

I wish if there were more healthy foods in our school cafeteria (G, PU, FGD-2)

I think within the school, having healthy foods available. I think you can talk that you should eat

<p>I would have eaten more healthy foods if there were healthy foods instead of unhealthy foods (G, PU, FGD-1)</p>	<p>more fruits but then we are making it a heaven opportunity to buy something but what can they buy? Can they buy fruits? Do they have fruits available at school? I think it is systemic, it's more than just a program...this is what is going to change eating habits (M-1, PR)</p>
<p>Bananas, apples, healthy and light sandwiches should be available in the school cafeteria. So we would buy from the school cafeteria a healthy lunch if these were present (B, PU, FGD-3)</p>	<p>I think in the school cafeteria, there shouldn't be snacks like chocolate. Instead, fruits and vegetables can be available (M-2, PR)</p>
<p>Every time I think of buying fruits, I don't find any of them in the school cafeteria; there are only limited options like carrots dipped in lemon. (B, PU, FGD-3)</p>	<p>What's important is that the school eliminate chocolate snacks because if they were asked to choose between a healthy and unhealthy item, they would surely choose chocolate for example. I personally think that chocolate should be banned in school. Chocolates shouldn't be an option. Because when children get hungry, they eat what's available for them (M-3, PR)</p>
<p>The presence of dairy-like foods or sandwiches in the school cafeteria is not enough...the available chocolate snacks should also be reduced (B, PU, FGD-3)</p>	<p>Healthier options should be available in the school kiosk, things like fruit salads, homemade cakes, or anything healthier than chocolate. Children start seeing each other choosing healthier options and get encourage to eat the same (M-4, PR)</p>
<p>When chocolate and these kinds of sweets are present in the school cafeteria, children would get encouraged to buy them (B, PU, FGD-3)</p>	<p>When I ask my girl what's available in the school's kiosk, she tells me that there are not healthy options. Last time, she was watching a report from Japan and she told me that in this country, there are vending machines in school in which healthy options are available such</p>
<p>Placing sweets snacks like chocolate on the back shelf and exposing healthy foods on the front such as carrots and cucumbers, would help us choose healthier options (B, PR, FGD-2)</p>	
<p>I also wish that fresh juices are available at the school cafeteria instead of manufactured ones (B, PR, FGD-3)</p>	
<p>Another thing that stands in the way is that when I go to school, let's say I am eating a salad...okay so you need to sit down and eat it like you cannot walk and eat a salad at the same time. So in our school, in our community in school, there are spaces to sit, but sometimes people sit here</p>	

<p>to talk with each other. I don't mind it, but there are benches and I can't eat while sitting on a bench cause...there are limited ones where tables on top of them are available, and everybody like sitting there because they can play cards or something with it (G, PR, FGD-1)</p>	<p>as bananas and that she wishes that such things would be available in her school as well. So yes, the school could provide healthier options like fruit salads instead of chips and chocolate (M-4, PR)</p>
<p>We used to bring vegetables from a grocery shop that has affordable prices (B, PU, FGD-3)</p>	<p>It would be nice if there were healthy food choices like carrots dipped in lemon wrapped in an easy and appealing package, where they can pull it off and eat it easily. And, maybe when they choose these foods and open them, they get some cool prizes (M-7, PR)</p>
<p>I would have buy apples if they were for 500 Lebanese lira (B, PU, FGD-3)</p>	<p>There could be healthy meals or boxes in school that contain several healthy options. These meals or boxes could be wrapped in an appealing package so when children are exposed to them, they would directly choose them. And, children's demands for these healthy boxes increase when they see their friends buy them or when they hear from their friends that these meals are tasty (M-8, PR)</p>
<p>I personally wish in our school, to have a cafeteria where there are places to sit and eat. Cause in our school we have only a playground and people can't sit there, it's not like a cafeteria, it's like a place we can buy stuff, play and eats, and there are just too many noises first of all. Second of all, if you're waking and eating somebody would be running or maybe your sandwich will fall or carriage will fall or something on the ground and then you can't eat it because your know the ground is dirty (G, PR, FGD-1)</p>	<p>Every time I order a coffee from the coffee shop, I get a sticker. So these kinds of things can be done in school, for example, when children eat 10 salads, they would get something for free. They [children] love getting things for free like rewards or gadgets so I think this might help them eat healthier (M-3, PR)</p>
<p>They should ask us, like what do we like to eat so there is more chance for us to eat more healthy foods (G, PR, FGD-1)</p>	<p>I suggest that the school would listen to children's opinion to know what they like to eat because children don't like to eat everything (M-1, PU)</p>

<p>We would like if the school posts facts about healthy eating (G, PU, FGD-1)</p>	<p>Awareness sessions for children are very important. These sessions do not have to include only what they should eat and should not eat, rather they should include why they should eat healthily while providing them with credible information (M-5, PR)</p>
<p>Seeing posters, leaflets, and advertisement about healthy eating on the school's walls would help us choose these foods (B, PU, FGD-3)</p>	<p>I hope the school gives children regular awareness sessions on healthy eating, within the school curriculum (M-6, PR)</p>
	<p>The school should give fixed nutrition sessions for children, let's a 30-minute session during science or a separate session once a week. An example of a session could be how to prepare fast food like crispy at home instead of buying it from outside. Children learn from each other and like to copy each other so after these sessions, they would feel responsible that they can prepare their own lunchbox (M-8, PR)</p>
	<p>Informing children about this topic is very important. I remember once my girl came home and told me that she has been taught in the school that soft drinks are unhealthy so she stopped drinking soft drinks for a month or so. So the school plays a key role in teaching them about healthy living (M-3, PR)</p>
	<p>I suggest that the school integrates a course about healthy living, like any other math or science course. This course should be given to every student</p>

	<p>to incorporate a common mentality among children, so when they want to choose their own foods, they would all choose the same healthy options (M-4, PR)</p> <p>Of course, the school should educate children on healthy eating but they should also give sessions for parents. Because each home has its own food rules, for example, in our home children aren't allowed to eat sweets but when my children spend the day at their cousins' house, they do eat sweets. So sessions should target parents as well to keep all families on the same page (M-3, PR)</p>
<p>Learning healthy eating through theaters is a good idea (G, PU, FGD-2)</p> <p>Children get encouraged if they watch a movie tutorial (G, PU, FGD-1)</p> <p>We [children] have to start playing to get motivated to eat healthy (G, PU, FGD-1)</p> <p>The program can do maybe a game out of it, cause nowadays people don't like to eat healthy foods, so a game or something would encourage us to eat those foods, like a game in which you will have to eat lettuce or cucumber or if there's a competition where you have to eat cucumber in less than a minute let's say (G, PR, FGD-1)</p> <p>I would eat more fruits if they were cut into start-like shapes (G, PU, FGD-1)</p> <p>Fruits look more attractive to us if they were placed on a stick (G, PU, FGD-1)</p>	<p>I think anything for their age, anything creative and fun not like you are teaching nutrition and just giving them lists. You know fun activities like tasting brownie but do you ever guess a good brownie has no sugar in it...just like this, get a feel that healthy is good and we can still enjoy the treats but in a healthy way. So anything that gets them engaged would be attractive to them (M-1, PR)</p> <p>Do it yourself kinds of activities can be included, she [her child] would eat her own salad if she prepares it by herself (M-2, PR)</p> <p>They love working with their own hands like when they prepare their own salad they get happy. When they prepare their own foods at school, they would come to the home and get excited about</p>

Some children don't like apples. I think they would start loving and eating them if they would chop them into different beautiful shapes (G, PU, FGD-1)

Like when we have food distributions at school, you come and buy the food, and then the money will go to some good organization let's say. In this case, you go and buy a piece of healthy food every time (G, PR, FGD-1)

The money of food distribution events would go to something like most kids would like, such as a slide or something out to put in the playground. Maybe that would make them feel more excited to eat because they are getting something in return, it's like a reward that's not bad for them (G, PR, FGD-1)

Food sale event in school encourages us to buy food from the school, whether there were healthy food or not (B, PR, FGD-2)

I love if the school's bake sale events happen every time. It happens once a year for each class, but I wish if we can always do it like once every week or once every three days (B, PR, FGD-2)

The school can encourage us to eat healthy foods by doing a small party where we are asked to bring vegetables and fruits (B, PR, FGD-3)

Last year when we were in grade 5, some of the grade 6's students did an apple day and they started to sing one apple a day keep the doctor away and distributed apples for free (B, PR, FGD-2)

preparing the same food at home (M-2, PU)

They can organize a competition, during class time, let's say in science course, during sports or during any activity, where a nutritionist talks about healthy foods and teaches them how they prepare small healthy meals by themselves. Breakfast oats for example. Then, a competition can be done to see who is better at preparing these meals. Children love competitive games especially when they get rewards in return (M-5, PR)

Children would get excited to participate in these sessions if competitions are included. I know that at this age, they love being competitive (M-4, PR)

The school usually organizes bake sales but they don't occur frequently. So these events can happen routinely, they can be done on a weekly basis (M-7, PR)

If the school asks my son or his class to bring fruits with him, he would insist to bring his fruits and gets excited (M-1, PU)

The school could make like a nursery out of it and have kids memorize and learn why healthy food is good, and then you can have them teach it to younger kids without actually realizing it (G, PR, FGD-1)

Something that I wish to be there is to help other people getting excited, like if they could see a cucumber or a carrot and say oh my gosh I want that right now, in the same way as they get excited about treats or chocolate. That could be helpful when more people are around you eating these foods. In our school, most people like to copy each other, so if the majority of people are eating unhealthy they will be eating unhealthy and vice versa (G, PR, FGD-1)

I hope we can see someone eating healthy such as fruits and vegetables and observing how he or she is growing up and getting the nutrients (B, PU, FGD-3)

We can make some shapes using healthy foods, similar to what we watch on YouTube (G, PU, FGD-2)

There is something called cobbler, in which you can make a lot of different fruits. So like, for example, it has fruit in it and then you can go like apples and peanut butter or something else that already people like. I love peanut butter and that makes me so excited about apples. I tried apples and peanut butter and I think this is really good...like it would help us have a transition to get used to healthy foods. It's like in kindergarten, you go to kindergarten, you start simple and then the older you get the more stuff you learn. So you start with a chocolate bar then

I think the school plays an important role so they might ask children to bring to school healthy ingredients, sit all together, and start preparing their own healthy plate. So if this idea occurs frequently like once every week, students would get motivated to eat healthier especially when they see their friends eating in this way because they will know that healthy eating is for everyone unconditionally; whether they were overweight or underweight (M-8, PR)

Social media could help them in a good way sometimes. She [my daughter] is currently influenced by ticktock, I mean that she wants to try everything she watches on ticktock. I noticed that recently (M-2, PR)

to peanut butter and apples.
You would do something that
a person likes in a healthy
way or end up with small
unhealthy (G, PR, FGD-1)

We can learn from YouTube
you know...my sister always
watch YouTube and these
videos get us excited to do the
same or prepare the same
foods (B, PU, FGD-3)

APPENDIX IX

EXAMPLE QUOTES ABOUT PHYSICAL ACTIVITY

Themes – Physical activity	Subthemes	Children Quote Examples	Mother Quotes Examples
Perceptions of physical activity and its impact of children’s wellbeing	Perceived meaning of physical activity	The first thing that comes to my mind when talking about sports is dancing (G, PU, FGD-1)	She [my daughter] does basketball and gymnastics, so she is getting an hour and a half to 2 hours every day and maybe one day or two off (M-1, PR)
		I like exercising, I play basketball, I used to play football, and I play a bit of tennis and volleyball (G, PR, FGD-1)	He [my son] is doing gymnastics in a gym near our home, and he used to do karate once a week (M-7, PR)
		I love football (B, PR, FGD-2)	She [my daughter] loves swimming because they [my children] were enrolled in a swimming academy (M-3, PU)
		I think about Kong foo because I was enrolled in Kong foo classes (B, PR, FGD-3)	My child loves football (M-1, PU)
		I love biking with my friends, in this way we can have fun (G, PU, FGD-2)	
		Sports is having fun because I do have fun when I am playing basketball, it’s not that I want to be professional, it’s just that I want to have fun (G, PR, FGD-1)	
		Sport is exciting to go, and it’s fun! (G, PR, FGD-1)	
		I play ping pong with my friends, I have fun and enjoy it (B, PR, FGD-2)	
		I go and play football to have fun (B, PR, FGD-3)	
		I play Domo, an activity in school, and I also have this game at home. I also love	If she [my daughter] is reading a book, she doesn’t want to stop and

	<p>playing billiard and baby foot (B, PR, FGD-2)</p> <p>I love going to our farm because I have a lot of fun there! When I take care of and feed the animals, I move a lot and burn a lot of calories (B, PR, FGD-2)</p> <p>I love playing chess (B, PR, FGD-2)</p>	<p>do anything else. If she would choose anything, she would choose to sit and read a book (M-1, PR)</p> <p>If you ask him [my son] this question, he would tell you that he loved gardening and feeding animals, that's of course if he answers sincerely. But, if he wants to flatter you, he would tell you that he loves football (M-5, PR)</p>
Impact of physical activity on children's lives	<p>Your body will be much more better, and it's so good for your body (G, PR, FGD-1)</p> <p>What encourages me to do sports is that I know I am doing something good for my body (G, PR, FGD-1)</p> <p>I feel like if I am shooting a basket or shooting a ball, I feel like it helps me get rid of any bad energy I have. It feels like I am doing something positive and I can get of my negative energy if I have any (G, PR, FGD-1)</p> <p>Sport makes me active and is good for our body (B, PU, FGD-3)</p> <p>Sports get us stronger and make us excited (B, PU, FGD-3)</p> <p>I feel happy when I am playing sports. I feel like when I have my friends and having fun with them, I can talk to them I can do this with them (G, PR, FGD-1)</p> <p>It [physical activity], first of all, gives me a routine especially right now most kids need routine just to make them feel comfortable. And second, because I am filling my time I know that I am doing something positive and</p>	<p>I feel like when she [my daughter] is doing sport, she is more happy and energetic (M-2, PR)</p> <p>He [my son] seems so energetic after finishing sports (M-1, PU)</p> <p>The first idea that comes to my daughter's mind when talking about physical activity is being strong, being active, and energetic (M-2, PU)</p> <p>It [physical activity] makes her strong, and it makes her not get fat I think (M-1, PR)</p> <p>Sports has so many benefits, it increases my son's concentration (M-7, PR)</p> <p>She [my daughter] learned disciplined when doing sports; she knows how to respect the time and she packs her own clothes before going to her class (M-2, PR)</p> <p>Sports help children learn how to set a goal, especially when it comes to competition (M-3, PR)</p>

something that wouldn't make me go down (G, PR, FGD-1)

I would be so happy if the COVID-19 would end and we just go back to our normal schedule and routine and I can just have more fun and I can fill my time because now I have a lot of free times...I cannot watch TV all day (G, PR, FGD-1)

I feel like it [physical activity] helps me study more because I've been doing sports for a long time and, I've been one of the best students in my class for a long time ever since I started to do some sport. But anyway I feel like it helps me study and work more (G, PR, FGD-1)

When we exercise, sometimes our muscle gets sore, especially when we exercise only once a week (G, PU, FGD-1)

When I exercise on the treadmill, I feel pain in my lower body. Then I woke up in the morning with sore muscles (G, PU, FGD-2)

It's like when you are so tired you can't accomplish anything anymore. I can go play with my friends there, you know you change your mind, but sometimes when you're tired, you're back from school let's say, not like nowadays but it happened to me, so you're tired from school, you just can't be more tired (G, PR, FGD-1)

I prefer farming [gardening and feeding animals] over football or basketball because I have some respiratory problems so I get tired easily (B, PR, FGD-2)

There are also things while doing a sport that makes me worried, especially those activities or movements that children do for the first time. Last time, my son slipped while doing sport and felt pain in his arm for two days (M-1, PU)

Sometimes when they [my children] don't practice for a long time and then start again any type of sports, their muscle get stiff and they will no longer be able to move the way they want (M-3, PU)

	<p>The last time when I was in school, my legs were hurting and I wasn't able to even walk (B, PR, FGD-3)</p> <p>When I used to do boxing in the gym, we used to hurt each other, which really annoyed me cause we keep on hurting each other and this is why I stopped (B, PR, FGD-3)</p> <p>Sometimes we are afraid to hurt ourselves when we are doing some exercises like jumping (G, PR, FGD-1)</p>	
<p>Individual determinants Rewards for physical activity</p>	<p>I would reward myself if I finish exercising by eating something totally unhealthy cause I just burned a lot of stuff and I would be very hungry, like maybe chocolate (G, PR, FGD-1)</p> <p>When I do sport I reward and encourage myself, sometimes I love getting small rewards like chocolate (B, PR, FGD-2)</p> <p>Our mothers tell us to do sports so they can give us in return anything we like (G, PU, FGD-2)</p> <p>If I do sports, my parents would give me money (G, PU, FGD-2)</p> <p>I reward myself when I do physical activity by doing something fun or just laying down (G, PR, FGD-1)</p> <p>I just relax after doing any sport (B, PR, FGD-2)</p> <p>I don't ask for something in return (B, PR, FGD-3)</p> <p>I don't reward myself for doing sports (B, PU, FGD-3)</p> <p>No, I don't do that or reward myself (B, PR, FGD-3)</p>	<p>Sometimes she [my daughter] tells me that she did well sport and ate healthily so she asks me to take her somewhere or get her a reward like a game (M-4, PR)</p> <p>My daughter asks me to buy her a dress or t-shirt if she does well in sport and then I do that once she finishes (M-2, PU)</p> <p>My son would like me to get him anything related to sports when he practices to show others that he started exercising in a good way, like a sports watch, dumbbells, or running shoes (M-8, PR)</p> <p>The goal of sport is to win championships and obtain rewards and medals. So to act like a star in the court, to score, and to win medals, are what she [my daughter] would love to get in return (M-2, PR)</p> <p>They [my children] don't reward themselves but if</p>

	<p>I just get happy because I know that I am going to win medals (G, PU, FGD-1)</p> <p>When I see myself doing well in sports, I become so happy so I reward myself by appreciating that I did a good job in sport (B, PR, FGD-2)</p> <p>I don't know how to express that, but when I practice I feel happy deep inside, I stay happy all day (B, PR, FGD-2)</p> <p>When I do well in karate, I get excited that I will be better in that kind of sport (B, PU, FGD-3)</p>	<p>they are participating in a certain game, getting medals and winning is what is important for them (M-3, PR)</p> <p>He [my son] doesn't reward himself, he doesn't have that mentality, he doesn't even ask me to bring or do anything for him in return (M-5, PR)</p>
<p>Individual determinants Perceived ability to participate and succeed in physical activity</p>	<p>I stopped football cause it made me feel like I have to shoot the ball using my leg...I feel like there's a movement with my legs that I am not able to perform (B, PR, FGD-2)</p> <p>I am not sure I will be able to win (G, PU, FGD-2)</p> <p>I think I can reach the goal if the goal was doing sport (G, PU, FGD-1)</p> <p>I think I can do sports, but not so much (B, PU, FGD-3)</p> <p>My ability to do sports is not so high (B, PU, FGD-3)</p> <p>When I start winning games, I tell myself that I should keep practicing to become a professional in this sport (B, PR, FGD-2)</p> <p>I think that I can reach this goal but sometimes I appreciate what God gave me and get motivated to keep practicing to participate in future competitions (B, PR, FGD-2)</p>	<p>I think that if he [my son] sets doing sport as one of his goals, he would succeed (M-1, PU)</p> <p>She [my daughter] is always excited about sports, so based on that I think she is 90% capable to succeed (M-3, PU)</p> <p>I think part of it is that she is naturally a bit athletic so exercising comes easy to her. She is kind of lucky with that, you know, to have an athletic build. So having her run or play isn't hard for her to do, she is capable to do that pretty easily (M-1, PR)</p> <p>I can see that he would always be the number one in sports since he does every exercise and activity very well (M-1, PU)</p> <p>My son has a high ability plus his personality helps him to succeed in sports (M-5, PR)</p>

	<p>My ability to succeed in sports depends on the program and the required exercises (G, PU, FGD-1)</p> <p>If I like the program then I think I can do it, like let's say we're doing art crafts I like it but I don't like it a lot so I wouldn't put a lot of hard work into it but I will put only some hard work (G, PR, FGD-1)</p> <p>If something I really like and I am committed to, I will put my heart into it and I will just keep doing it, keep on practicing to reach the top or something (G, PR, FGD-1)</p> <p>If I like this schedule or sports I would definitely stick to it, but if the schedule isn't perfect for me or this sports I don't like, maybe I wouldn't stick to this schedule or maybe I won't stick to this program (G, PR, FGD-1)</p> <p>My ability to succeed in sports depends on the type of activity (B, PU, FGD-3)</p> <p>If the activity is nice and I like it, then I think I would be able to succeed in the program, then I keep fighting for this (B, PR, FGD-3)</p>	<p>If she [my daughter] would like the activity, then, of course, she would have the ability to participate in the program. I notice when she is watching a show that she really likes, she would get excited to participate otherwise you just see her sitting on the side (M-2, PR)</p> <p>Of course, if he [my son] would like the activity. If he does then he would go for it (M-5, PR)</p> <p>He [my son] doesn't have a problem to participate in any physical activity program as long as the activities are interesting for him (M-7, PR)</p>
<p>Social determinants Parents and family influence</p>	<p>My mom does sport frequently, and I love doing sport as she does and I told her that I want to go with her to the gym during summer (G, PU, FGD-2)</p> <p>My parents always encourage me to do more physical activity and to be more active (G, PR, FGD-1)</p> <p>My father encourages me to go and play outside (B, PU, FGD-3)</p> <p>Last time, I wasn't feeling like doing sport but then my father</p>	<p>Her dad keeps running and exercising every day so the kids see that and enjoy that and get along with him (M-1, PR)</p> <p>Everyone in our family encourage her [my daughter] and when she has any event related to sports you suddenly see everyone in our family going with her to support her (M-2, PR)</p> <p>If there are people that encourage her during the day, she [my daughter]</p>

<p>came and encouraged me to get active (B, PU, FGD-3)</p>	<p>would stay active and play, otherwise they [children] would watch television all the time. If her cousins came over, for example, they would turn the music on and dance or even play. I mean that if there is such an environment, they would forget about screen time and get active otherwise they would sit all day long (M-3, PU)</p>
<p>My father brought us the treadmill machine to practice at home (G, PU, FGD-1)</p>	<p>I used to organize their schedule to help incorporate sport during their day like on Sunday she [my daughter] would complete all her homework due for Monday and Tuesday cause when she would come back from school, she doesn't have time to study, she would just eat, dress, and get ready for sports, then when she comes back she would take a shower and have her dinner (M-3, PR)</p>
<p>When coronavirus started, I really wanted to play basketball, but I could not, so my father brought me a small basket and a ball so we can play at home. Also, during winter, we moved the ping pong table to an indoor room in our home and started playing (B, PR, FGD-2)</p>	<p>The child knows his schedule when he has let's say an hour and a half of activity per week, he would know that he has to incorporate sport in his schedule, he would adapt very easily, I don't think it will be difficult for him, because he knows that sport is like any mandatory study class he has to take. He would know that this is part of his activities but you have to establish this routine from the beginning (M-4, PR)</p>
<p>There are parents that don't encourage children like they would leave them by themselves and do whatever they want to do, even if they don't want to get active (G, PU, FGD-1)</p>	<p>One obstacle is that we come late from school, tired, and their physical activity session is in the evening. So the timing of sports activities is not compatible with the timing</p>

	<p>At my home, half of my family don't like sports (G, PU, FGD-2)</p> <p>No one of my family members guides me and encourages me to do anything (B, PU, FGD-3)</p> <p>But sometimes, they [my parents] don't like to do sports and they don't support me to do it, no one actually encourages me to do so (B, PU, FGD-3)</p>	<p>of the school nor with our life priorities (M-3, PR)</p> <p>As a working mom, I usually have a full work schedule that is very busy and then I come home and have to worry about school homework. So even now, we don't have time, too many studies and work so we don't have that time to feel relaxed and enroll them in a certain sports program. First, there is no time for that, second, we in our community sport is not an essential part of our daily routine so we think that if we still have a bit of time in our life then we can sacrifice it for sports, which is not possible every day (M-4, PR)</p>
<p>Social determinants Peer Influence</p>	<p>When we feel like we don't want to play in a specific activity, some of my friends go like come with us we will have fun together, so they change my mind and encourage me to participate (G, PU, FGD-1)</p> <p>My friends told me last time why you don't play with us, we will have fun and then they were able to encourage me to join them (B, PU, FGD-3)</p> <p>My brother loves to play football especially when one of his friends calls him to go and play football together (B, PU, FGD-3)</p> <p>Like, let's say one of the students is really bad in certain sports like most of the boys would bully anyone, boys or girls, they would bully this person and they're like you're a loser, you can't do this" (G, PR, FGD-1).</p> <p>During sports classes in school, my friends used to</p>	<p>Subtheme not described by mothers</p>

	<p>bully those that are not as strong as they are and tell them that they are losers and starts nagging (B, PR, FGD-2)</p> <p>In basketball or any other sport, there is always this win-and-lose situation, for example in football, they fight to get the ball, so when I go take care of the chicken, I don't feel that there is someone that loses or making someone feel that he doesn't know how to play (B, PR, FGD-2)</p> <p>When our competitor win, they start laughing at us, especially when two teams are competing against each other (B, PU, FGD-3)</p> <p>In our school, there is a lot of bullying when it comes to sport (B, PU, FGD-3)</p>	
Availability and affordability of spaces	<p>Sometimes when I go to the mountains, my friends and I create a Parcours. In the mountains, there is a place with some rocks where we can jump over them. We cannot do this in Beirut, there are no places (B, PR, FGD-3)</p> <p>Ever since we went to the mountains during coronavirus, I got more active as I am spending most of my time in the farm (B, PR, FGD-2)</p> <p>After coronavirus and Beirut's explosion, we went to the mountains. My family was bored up in the house but I used to go down and bike with my friends. When the school resumed online classes, we went back to Beirut and I kept on playing PS4 (B, PR, FGD-2)</p> <p>When I go to the mountains, I go out with my friends, walk, bike, and play football, we play and we have fun. Here in</p>	<p>There are no spaces near us for children to play like there was a public park next to us but it's now closed due to the current situation, you know (M-2, PU)</p> <p>Let's say we're talking about biking, there are no places to bike expect in Beirut-by-bike and we can only go there once per month. You know, here in Beirut, there are no sidewalks or biking trails...the thing is that she [my daughter] really likes doing sports but we have limitations (M-2, PR)</p> <p>The thing is that here in our city, Beirut, there are no opportunities to do physical activity. Whereas in the mountains, we have some open spaces where we can walk, do some activities, here in Beirut</p>

<p>Beirut, we can't do anything like that, they don't allow us to walk on the roads and play (B, PR, FGD-3)</p>	<p>we can't even move (M-4, PR)</p>
<p>I got encouraged to do sports if I go to the gym but when I am home I just want to relax and sleep all day (G, PU, FGD-1)</p>	<p>I think the environment especially in lockdown is difficult since there is no enough space to get the kind of exercise I think children need. You know they can run up down the stairs, in the building, or around the courtyard a bit but they just don't have the space they need (M-1, PR)</p>
<p>If I go to the gym, I might be encouraged to get active...when I am home, I stay lazy, sit maybe, or pack my stuff (G, PU, FGD-2)</p>	<p>Our home is small, they can't play if you don't have a like a small space so I prefer to take them [my children] to somewhere far away from here so they can play a little bit (M-3, PU)</p>
<p>We are motivated to do sports in school because there are places, places where we can play (B, PU, FGD-3)</p>	<p>During quarantine, children are not having the opportunity to do activities or sports but when we went to the mountains during weekends, they can ride their bicycle or do skateboard and rollers so they can get a little bit more active there (M-4, PR)</p>
	<p>Well, before all this quarantine and lockdown she [my daughter] does gymnastics so she is getting an hour and a half to 2 hours every day and maybe one day or two off. But now, during this lockdown, it is probably a similar amount but not as strengthless, so she is like riding her bike or her scooter that kind of things and almost or I say maybe four afternoons a week, not every day and it is certainly not as strengthless (M-1, PR)</p>
	<p>We are thinking to enroll them [my children] in a certain physical activity,</p>

maybe when the coronavirus' period passes (M-3, PR)

I encouraged my daughter to exercise at home by watching a YouTube tutorial. So my girls and I were doing the workout together and suddenly I see her taking breaks and doing other things. It didn't work at all. Whereas in the gym, with her friends, there's discipline, it's different (M-2, PR)

The good thing that now there's a gym near our home where they can go and exercise but when we were living in previously, my children wanted to go to a gym but we couldn't make it, the gym was far from home (M-5, PR)

He [my son] always insists that he wants to go to the gym, but you know the problem is related to money... honestly, I can't sign him up in a sport team (M-1, PU)

I think that every child would love to do sport if activities were available but the most important thing is to be able to sign him [my son] up and afford transportation (M-2, PU)

Our financial potential, the money you know. I mean that sometimes that's what makes physical activity harder. They [my children] would have done sport if affordable gyms or classes were available cause sport at home doesn't work (M-3, PU)

Sport environment

Timing of physical activity

We don't feel like being active when the sport session is in the morning, we would

I think PE sessions should take place in the morning cause during the first

	<p>still be sleepy, you know (G, PU, FGD-1)</p> <p>We prefer to wake up late to do physical activity and not early in the morning (G, PU, FGD-1)</p> <p>When it's the end of the day and we're tired and our sports class is our last school session, we get excited and energized (G, PU, FGD-1)</p> <p>We wish that we have additional sports classes in school, it would give us more energy (G, PU, FGD-2)</p> <p>It takes us a lot of time to get ready for the sport class in school because we have to leave the class and go downstairs, so around 25 minutes remained for activities. I wish we have more physical activity classes in school, like two sessions per week instead of one (B, PR, FGD-2)</p>	<p>school session, children are more attentive, and sports boost their energy for the day, so I think they should start the day with sports (M-2, PR)</p>
<p>Influence of physical education's teachers and coaches</p>	<p>Our physical education teacher motivates us when we're tired and show us how to do the exercises before we do them (G, PU, FGD-2)</p> <p>If there is someone who doesn't know how to do a specific exercise, the teacher explains and shows us how to perform it so this encourages me and makes me feel that I can do it (G, PU, FGD-2)</p> <p>When there is someone who can teach and train me then I can easily exercise (B, PU, FGD-3)</p> <p>I prefer going to the gym to do sport because there is a coach there who always encourages me (B, PU, FGD-3)</p>	<p>There are some exercises that he [my son] keeps on doing at home. So he always tells me that the teacher taught them these exercises. He even does them in front of his sister. So I think he loves the sport that much because his teacher inspires him and he has a way of teaching children. If the teacher was dull with him then he wouldn't act the same (M-1, PU)</p> <p>I hear from my daughter and her friends that they love the school's physical education sessions so much because of the teacher; they can't wait to see him because he makes them play in a group altogether (M-3, PU)</p>

			Not every coach who teaches sport has a way of talking with children. Last time, my son's gymnastic coach pushed him to perform a certain exercise, and when he came back home he told me that he wanted to stop gymnastics (M-8, PR)
Suggestions to encourage physical activity among children	Space, facilities, and equipment	<p>I wish there are a bigger space where we can play (G, PU, FGD-1)</p> <p>Maybe if play courts like a place to play football were available, we would have the opportunity to move more (B, PU, FGD-3)</p> <p>Like parks where we can do sports at the same time and not only play (B, public school)</p> <p>We can also do sports on grass surfaces because we're scared to fall (B, private school)</p> <p>I wish if opportunities are available in our community, for example, Khaldeh's municipality has once provided bikes for people (G, PR, FGD-2)</p> <p>I hope the physical activity program in school can bring more equipment, if they can't afford to buy some materials, they can do them by themselves, like ropes for example (G, PU, FGD-1)</p> <p>Or if a variety of sports-related equipment were available in the gym (G, PU, FGD-1)</p> <p>Instead of going to the gym and pay money, we can have some sports equipment available at home (G, PU, FGD-2)</p>	<p>I searched for a gym appropriate for my children's age and I didn't find any. I think that a gym appropriate for their age would encourage them to do more sports. I contacted several gyms and asked them if children under 12 years of age are allowed but unfortunately, I didn't find any gym that welcomes children less than 12 (M-5, PR)</p> <p>I hope that the school work on having some playgrounds or clubs available so children can choose the activity that they want. I think this would facilitate children's physical activity habits because you know we as parents work and we can't pick them from school then drop them off for their extracurricular activities. So when such facilities and opportunities are available within the school, we get reassured that our children are having the opportunity to get active even if those activities took place after classes, eventually they can stay at school (M-7, PR)</p>

Physical education-based strategies and approaches

I hope that when we are playing with or against each other, we appreciate and congrats each other even if there is a team that won and another one that lost (G, PU, FGD-1)

I wish that we play with each other and not against each other like hide-and-seek, for example (B, PU, FGD-1)

I wish that in the program they focus on like on...I don't want to say really bad people in sports that's not true, but focus on people so we all are on the same level, so we can't say this person is not good or that person is stronger. In a way that most of us aren't getting bullied and sometimes play with someone low like levels, you feel like you just don't want to play anymore, no offense to anyone. But when I play in my basketball training, I know there are more levels and I feel much happier when I play in the school, I know there are all different levels (G, PR, FGD-1)

Another thing that would encourage all of us is that we can do like they can get other people from other schools to like make a match (G, PR, FGD-1)

I suggest having competitions like we used to play a game where we should run to catch the flag first and the first who catches the flag wins. So I wish we can do these competitions again and those who win get gifts or medals, things like that (B, PR, FGD-2)

I think competitions should take place after each semester, like having semi-finals and then finals, we get more excited (B, PR, FGD-2)

Some children love sports while others don't and all of them play together in the same place. So the PE program should keep together those who love sports through a certain assessment. Let's say my daughter is 10 years old and loves basket, she should join the varsity to stay part of the basketball system. I was in school and I know that there are lots of girls who usually sit and do nothing during classes and the coach spend the session calling these children.. while there are other girls who want to benefit from the session (M-2, PR)

The program can organize some competitions because some children, especially girls, start giving excuses not to play or because some coaches focus on specific good students and forget about others (M-3, PR)

We would pick the teams that we want, like let's say they are all on the same level but one is stronger, they put them in the stronger team so that nobody would like to get pressure from each other (G, PR, FGD-1)

I also want to add that levels should be separated like beginners should play together and those who know how to play should stay together...maybe there is someone who doesn't know how to do a specific exercise (B, PR, FGD-2)

Everyone has to know themselves, know that it's annoying this bullying, they have to know themselves (G, PR, FGD-1)

Maybe they would know each one's level and put them with the same person's level, we were 5 classes, they would like divide us all into groups to our schedule and put like these person's levels here, or like in this playground, and, this people with a stronger level in here, so they won't interact like the stronger levels won't interact with the lower ones, and they won't get bullied (G, PR, FGD-1)

The program should punish the person who bullied like I think he should just play alone like the coaches just put him in a totally different court all along, that's where he thinks he's the best playing alone (G, PR, FGD-1)

The program should implement some rules against bullying or don't allow these children to join these classes anymore (B, PR, FGD-3)

Anyone who bullies others should get a warning or the

<p>responsible should call their mothers and accuse them (B, PU, FGD-3)</p>	
<p>These children, those who threaten and disturb the class should get a warning or maybe they should be asked to raise their hand before talking (B, PU, FGD-3)</p>	
<p>I wish there are more kinds of activities (G, PR, FGD-1)</p>	<p>Stretching can be included as well, there should be a variety of activities instead of doing the same games over and over again (M-3, PR)</p>
<p>I love if we get active every day in school by having a variety of activities like basketball and Parcours (B, PR, FGD-3)</p>	<p>I suggest incorporating fitness classes, like pure fitness (M-2, PR)</p>
<p>Last year the school organized a marathon, it was really nice and we joined the event (G, PU, FGD-1)</p>	<p>Maybe incorporating more physical activity instead of just focusing on like just two sports in the sports, it is not that they do not enjoy it, but you can easily play basketball and not actually move if you are in a group of 5 girls, you can just hang out on the sideline and never actually move your body. So just incorporating more kinds of physical activities maybe. So yeah I think just broader, like anything broader than just basketball and football and there are so many ways people can be physically active (M-1, PR)</p>
<p>We would like to have games in each sport session (G, PU, FGD-1)</p>	<p>School PE program should conduct more self-defense exercises to learn several effective self-defense techniques in case they were confronted with a stranger for example (M-3, PU)</p>
<p>Games like having chairs all around, turning on the music, and running until the music stops (G, PU, FGD-2)</p>	<p>As a boy, I think activities should include football or</p>
<p>We love when sports sessions are delivered in a fun and interactive way (B, PU, FGD-3)</p>	
<p>We love games, last year, for example, we use to play a game in which the coach shows us a 5 with his fingers, that meant in 10 seconds, 5 people should come together and if a group ends up with less than 5 people, the group loses (B, PU, FGD-3)</p>	
<p>What I don't like about last year is that they put the girls to do gymnastics, not all girls</p>	

like gymnastics, and they put the boys to play basketball and football and all these stuff. I just think that it's unfair to put the girls in ballet and the boys in football or basketball. I personally wish they put the girls with the boys together and that everybody would do the sport that they would like (G, PR, FGD-1)

climbing on the wall but as a girl, activities should be like Zumba or these kinds of stuff (M-2, PU)

I think it would be helpful for a lot of kids if included in the PE program things broader than learning how to move their bodies well. I think maybe broader like what the view of sport is (M-1, PR)

The PE program or the school can teach sport not in a traditional way, the way that we're used to where a teacher or a coach comes and teach the exercises. They can improve the approach and include more teaching videos and maybe more discussions with children (M-4, PR)

The sessions should explain to children that the purpose of sport is not only to get us tired it's also fun where we can go, play, and get rid of stress (M-2, PR)

People similar to children's age like maybe teenagers or bloggers on social media should be called to the sports sessions because children are really influenced by these people. These influencers can come to those sessions, exercise with children, and open discussions together. They are influenced by those people more than their teachers because they

already know them and got used to them (M-4, PR)

We love if we watch videos on YouTube within the physical education classes or program, these videos would encourage us to do sports (G, PU, FGD-2)

Social media platforms through which children can learn sports is a good idea because children are greatly influenced by such platforms especially when they see anything related to health, there's a high possibility for them to do the same (M-7, PR)

We love watching videos, in those videos, they talk to us in a very gentle way and open some discussions (B, PU, FGD-3)

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