Journal of Education and Learning; Vol. 6, No. 1; 2017
ISSN 1927-5250 E-ISSN 1927-5269
Published by Canadian Center of Science and Education

Health Knowledge, Attitudes, Practices, and Beliefs of Lebanese and Palestinian School Children in Lebanon

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Received: October 16, 2016 Accepted: November 10, 2016 Online Published: December 7, 2016

doi:10.5539/jel.v6n1p227 URL: http://dx.doi.org/10.5539/jel.v6n1p227

Abstract

The indicators for health risk factors among school children in Lebanon associated with increased mortality and morbidity were higher than the global percentage based on WHO (2014) statistics. Knowing that the Ministry of Education in Lebanon has been trying to include health education in the national school curriculum since the last reform in 1997, this qualitative exploratory study analyzed the students' arguments resulting from focus group discussions to identify their level of knowledge, attitudes and perceptions and to provide suggestions for improving the national textbooks and teaching practices. Data were collected through focus group discussions with grade 5 students in 2 schools: Lebanese public school and UNRWA Palestinian School. The content analysis technique was used to perform the analysis and interpretation of data. Data was coded based on criteria from the Rational Model as well as the Health Belief Model. The study found, among other things, that students in both schools acquired the knowledge present in the textbooks about the benefits of balanced nutrition but they gave inaccurate and incomplete justifications with no scientific reasoning. Regarding attitudes, they show negative attitudes toward prefer unhealthy food over healthy ones. Some of their practices were healthy but unhealthy snacks, skipping breakfast, drinking big amounts of soft drinks were prevalent. The arguments of the students in both schools also showed some social related practices as related to the opinions, behavior, advice, and support of the people surrounding students influence their feelings and behavior, and the students have a reciprocal effect on those people.

Keywords: comprehensive school health education, health belief model, knowledge, attitudes, practices, perceptions

1. Introduction

1.1 Problem Statement

Health risk behaviors have been a major concern of many countries around the world including Lebanon, and they often start with teenagers. Recently, the major cause of death and disability shifted from infectious diseases to the chronic and non-communicable diseases (WHO, 2009). In adults, as reported by the last World Health Statistics report issued in 2015, diabetes, hypertension and obesity are health conditions that increase the risk of cardiovascular diseases and several types of cancer and contribute also to non-fatal diseases such as arthritis and loss of vision due to diabetic retinopathy (WHO, 2015). Obesity problem is not restricted to high-income countries; it is on the rise in low- and middle-income countries. However, the prevalence of hypertension is highest in some low-income countries while public health interventions reduced its prevalence in many high-income countries (WHO, 2015).

In Lebanon, in 2014 the indicators for risk factors associated with increased mortality and morbidity such as the prevalence of anemia, raised fasting blood glucose, raised blood pressure, and obesity among adults aged ≥ 18 years, were higher than the global percentage as revealed in the latest world health statistics report (WHO, 2015) briefed in the table below:

Table 1. Indicators for certain risk factors that are associated with increased mortality and morbidity revealed in the world health statistics report (2015)

	Prevalence of anemia among women aged 15-49 years (%) in 2011	Prevalence of raised fasting blood glucose among adults aged ≥ 18 years (%) in 2014		Prevalence of raised blood pressure among adults aged ≥ 18 years (%) in 2014		Adults aged ≥ 18 years who are obese (%) in 2014	
		Male	Female	Male	Female	Male	Female
Lebanon	27	13.7	11.5	25.8	20.6	26.3	37.7
Global	29	9.8	8.6	24.0	20.5	10.7	15.2

In addition, the Global School-Based Student Health Survey (GSHS), which is a collaborative surveillance project designed by the Center for Disease Control (CDC) to help countries around the world to measure and assess the behavioral risk factors and protective factors among young people aged 13 to 15 years, indicated relatively high percentages of health risk behaviors among adolescents in different countries including adolescents in Lebanese Schools (LS) and UNRWA (Note 1) schools in Lebanon. It was conducted for the first time in 2005 (Lebanese MEHE, 2007) and repeated in April 2011 in the Lebanese Schools (LS), and in November 2010 for the first time in UNRWA schools. The results among school children in grades 7-9 revealed that the percent of underweight students in 2011 was 5.3% (4.2% boys and 6.5% girls) in the LS and 4.7% (6.0 boys & 3.5% girls) in UNRWA schools, 24.1% (34.0% boys, 14.1% girls) in the LS are overweight compared to 28.1% (28.6% boys, 27.6% girls) in UNRWA schools, 6.7% (9.1% boys, 4.2% girls) in LS are obese compared to 8.7% (10.7% boys, 6.9% girls) in UNRWA schools, and 60.2% (65.0% boys, 55.9% girls) in the LS compared to 70.9% (74.2% boys, 67.8% girls) drink carbonated soft drinks.

Subsequently, to limit all the above mentioned dietary health problems, a deep view is needed about what, why, when and with whom school children eat and to assure that the food and nutrition topics are effectively covered at schools starting from low grades. In addition, since school-aged children's health-related behaviours are predominantly influenced by their parents and educators, the active engagement of principals and teachers in obesity prevention and healthy bodyweight promotion in school-aged children is critical (Gupta, 1996; Meizi et al., 2011). Thus teachers need to transmit the cultural heritage of society including the knowledge, skills, customs, and the attitudes acquired over the years. They must try to develop in their students the ability to adjust to a rapidly changing world and of creating a desire to teach (Conant, 1993). This requires a culturally sensitive health education programme that considers the cultural, social, environmental and historical influences on health behavior suitable for the characteristics of target group (Chapman et al., 2010) and teachers to have a higher level of professionalism to help students acquire the necessary knowledge and have positive attitudes to make healthy choices.

1.2 Theoretical Background Based on Review of Literature

In 1995, the WHO's Global School Health Initiative encouraged health promotion and education activities at the local, national, regional, and global levels. It was aimed to improve the health of students, school personnel, families, and other members of the community through schools. It emphasized the Ottawa Charter for Health Promotion (1986); the Jakarta Declaration of the Fourth International Conference on Health Promotion (1997); and the WHO's expert committee recommendation on Comprehensive School Health Education and Promotion (1995). In 1997, the World Health Organization stated that an education which includes health-related knowledge, skills, and attitudes lays the groundwork for pupils' health and well-being throughout the pupils' entire life span (WHO, 1997). The health promotion approach intends to improve health by promoting healthy habits and to develop empowerment for healthy decision-making towards environmental challenges (Carvalho et al., 2008). The term health promotion focuses on the social context of health behavior more than the term health education. However, the two terms are closely linked as their definitions intertwine and share the same historical and philosophical foundations (Glanz et al., 2002).

In Lebanon, after the reform launched in 1997, the Lebanese Ministry of Education planned health education as a cross-curricular theme in seven disciplines. According to Fuddah (2014), Nutrition topic and its subtopics ranked the first among the 10 health topics recommended by CDC and WHO: "personal health, family health, community health, consumer health, environmental health, sexuality education, mental and emotional health, injury prevention and safety, nutrition, prevention and control of disease, and substance use and abuse". It also

ranked the second in the different disciplines of all grades of the first and second cycles (Fuddah, 2014). The Lebanese curricula and national textbooks in all the grades and disciplines of the elementary level (Cycles 1 & 2) include many subtopics related to nutrition as mentioned in Table 2 below (Fuddah, 2014).

Table 2. Nutrition health topics and subtopics in grades 1 to 6 in the Lebanese curriculum and textbooks

Grade/Subject	Health topics and subtopics	
	Curriculum	Textbooks
G1 English	My daily habits My favorite food	Balanced diet and need for rest
G1 Science	Growth and needs of children	Things needed to grow
G2 Science	Food groups: their sources and importance; Examples of traditional food; Lebanese cuisine; Natural food and industrialized food; Clean vegetables and fruits	Food groups; Importance of all Food groups; Eating variety of food daily; are Lebanese foods healthy? How to clean fruits and vegetables? Natural food better than processed food.
G2 English	My country; Food	Agriculture, industry and food; A visit to a juice factory; how to make an orange juice Popsicle
G3 English	Nutrition	Healthy habits and Nutrition
G3 civics	Child responsibilities to eat different healthy food	My right to get balanced diet. Useful and harmful foods
G4 Science	The food pyramid; the balanced diet; malnutrition and some of its consequences	Importance of food; Food Types; proper food for muscles and bones development; role of resting in development of bones and muscles; eating balanced diets; importance of food; food pyramid; symptoms of undernourishment; harmful effects of over eating; misconducts during breakfast; dangerous of poisonous mushrooms.
G4 English	Recipes and habits of eating around the world; Poor eating habits	fresh vegetables and fruits; clean up after picnic; body basic needs; food for energy; plan healthy meal; water in food
G5 Science	Kinds of nutrients; sources of nutrients functions of nutrients; role of water in the human body; food safety, food preservation, role of food technology; system of information on the labels of manufactured food.	Food Groups; food pyramid; nutrients; role of some vitamins and minerals to our body; care of the digestive system; harms of fats on circulatory system; preservation and food safety.
G5 Technology	Chips: origin, types, forms; product label; observation of shape, place of item, content	Reading Food labels
G6 Physical Ed.	Acquire the concept of nutrition	Food portions and meals; amount of calories needed; importance of vitamins

This shows that the government acknowledged the importance of healthy nutrition within the context of everyday school lessons. Several studies were carried out about health education Lebanese curriculum. A study carried out by (Carvalho et al., 2008) revealed that health topics in Lebanese text books follow the health promotion model and the biomedical approach. Two studies done by Itani (2010) and Maatouk (2008) revealed the importance of culturally suitable health education programs in enhancing elementary students' knowledge and lead them to better practices. Itani showed that the delivery of one effective health period over eight weeks improved students' knowledge on ways to modify their lifestyle behavior and eating patterns to become healthier. This was also proved by Maatouk where after two weeks, the students' knowledge, sedentary activity, physical activity, and meat consumption have improved. Maatouk discussed also that knowledge scores improve if the

intervention continues during six months whereas the prevalence of obesity is not affected. This indicated that short and culturally suitable health education programs are necessary to improve students' knowledge but other factors are needed to limit the prevalence of obesity that may be personal and social parameters, as those related to family and community interventions. These results will be used in this research to discuss the students' arguments related to healthy nutrition.

Teachers also play a major role in influencing students' health decisions. As part of the EU European project (Résultats libanais du projet BIOHEAD-Citizen-FP6-CIT2-2004-506-015 "Biology, health and environmental education for better citizenship" for Lebanon), one research analyzed the answers to the Biohead-Citizen Questionnaires filled out by 2537 in-service and pre-service teachers in 4 Mediterranean countries: France, Lebanon, Morocco, and Tunisia. The multivariate statistical analysis showed that the conceptions of the teachers concerning health education, socio-cultural variables, religion, home country, and to a lesser extent the level of training, influence their health education choices. Thus, the teachers' conceptions were related to their individual characteristics rather than integrated into comprehensive approaches. Consequently health education implementation would require thorough training of pre-service and in-service teachers and should also explicitly take into account their conceptions and values (Caussidier et al., 2011).

The above discussion revealed that Health education in Lebanon needs to build on the beliefs, attitudes and behaviors that already exist within communities to promote healthier lifestyles and improve quality of life (Resnicow, 1999; Chapman et al., 2010). Hence, qualified teachers, who possess professional and interpersonal skills to help students in their classrooms acquire the health knowledge, attitudes and behaviors (Hayon, 1989) are needed. This research aims to analyze the students' arguments resulting from focus group discussions to identify their level of knowledge, attitudes and perceptions, i.e., the affective and social dimensions of health education in the nutrition health topic, and to provide suggestions for improving the national textbooks and the teaching practices in the Lebanese and UNRWA schools. Knowledge is what one knows and is the total sum of learning-theoretical and practical-that an individual acquires over a period of time. The rational model, also known as the Knowledge, Attitudes, Practices model (KAP), is based on the premise that increasing a person's knowledge will prompt a behaviour change. Knowledge of the subject, environment, general matter, forms the building blocks for the ability to understand, internalize and deliver on the performance objectives. Attitude is the way a person views something or behaves toward it. It describes the outlook and perspective on how a person thinks. It is the ability to put knowledge and skills to use and perform (Auburn, 2013). Practices are the observable actions of an individual in response to a stimulus.

The Health Belief model HBM is one of the earliest behavior change models to explain human health decision-making and subsequent behavior. It is spelled out in terms of four constructs representing the perceived threat and net benefits: perceived susceptibility, perceived severity, perceived benefits, and perceived barriers. These concepts were proposed as accounting for people's "readiness to act".

2. Method

The first author conducted two focus group discussions for students in grade 5. This grade is selected because the topic of healthy food is widely covered in several subjects such as English language and Science for grades 1 to 5 with many subtopics (Table 2) and to a lesser extent in grade six. One focus group discussion was carried out at a Lebanese public school and the other at a neighboring UNRWA school to identify the students' knowledge attitudes, behaviors and beliefs towards healthy food. The focus groups were conducted at the end of the scholastic year so that all the necessary health knowledge and skills related to the topic as set by the Ministry of Education for the students in this cycle were delivered. In each focus group, eight students were randomly selected (4 boys and 4 girls) taking into consideration the different weights: underweight, normal weight and overweight. The focus groups were conducted in Arabic with few words in English language to encourage all the students to participate freely. The open ended question used was: "why, what, when, with whom do we eat?" The discussion was managed with little intervention to see how students respond and express themselves alone. The focus group discussions were recorded using audiotapes and then transcribed. The students' arguments were short and hence were immediately translated into English language and typed in a special grid. The data was rechecked by the second author for reliability (Gibbs, 2010, p. 98). The transcription included the time, students' responses, and the facilitator's intervention. The results were categorized in qualitative tables to display texts from across the whole data set in a way that makes systematic comparisons easier (Gibbs, 2010). Analysis of data from focus group was done by Constant comparison analysis (Leech & Onwuegbuzie, 2007). Three major stages characterize the constant comparison analysis (Strauss & Corbin, 1998). During the first stage (i.e., open coding), the basic coding process in content analysis followed was to organize large quantities of text into much

fewer content categories (Neuendorf, 2002). Categories are patterns or themes that are directly expressed in the text or are derived from them through analysis. The researchers attached a descriptor, or code, to each of the units. Then, during the second stage (i.e., axial coding), these codes are grouped into categories. Finally, in the third and final stage (i.e., selective coding), the researcher develops one or more themes that express the content of each of the groups (Strauss & Corbin, 1998).

With a directed content analysis, the researchers used existing theories to develop the initial coding scheme prior to beginning to analyze the data (Kyngas & Vanhanen, 1999). The researchers used components from the Health Belief Model (HBM) and from the rational mode (KAP) to determine codes. They have been used to explain both the change and maintenance of health–related behaviors, and as a guide framework for health behavior interventions. The underlying concept of these models is determined by personal beliefs for perceptions about a disease and the strategies to decrease its occurrence. For the HBM model, the perception of susceptibility, seriousness, benefits, and barriers constructs is affected by modifying variables, cues to action, and self efficacy (Glanz et al., 2002). The KPA model assumes that the only obstacle to acting "responsibly" and rationally is ignorance, and that information alone can influence behaviour by "correcting" this lack of knowledge:

change in knowledge→change in attitudes/beliefs→change in behavior

The analysis of the students' arguments during the focus group discussions helped in critically analyzing the effectiveness of the teaching sessions of nutrition topics, and in eliciting some possible differences among the Lebanese public school and UNRWA school. This helped us to answer the following research questions: What arguments based on knowledge, attitudes and practices are used by students of the two schools when discussing nutrition topic? What possible differences can be observed, from some examples, between a Lebanese public school and an UNRWA school? What are the students' perceptions regarding food benefits?

3. Results

3.1 Findings Related to Students' Knowledge, Practices and Attitudes

The main statements, or phrases for each question were selected from the arguments and recorded in different tables including the answers given by LPS students and the UNRWA students. The phrases related to knowledge are recorded in Table 3, where the ones common to both schools are presented in one row, and the different ones in the second row. Similarly, the phrased related to attitudes are recorded in Table 4, and the phrases related to practices are recorded in Table 5.

3.1.1 Knowledge Related Phrases

Table 3. Knowledge related phrases said by students in LPS and UNRWA school when discussing nutrition topic

	LPS	UNRWA
Common between two schools	Food helps nourish body organs; prevent diseases; give energy and power; build muscles; grow tall; think; better memory; to live; have strong brain; to succeed; to strengthen bones; prevent feeling weak or anemic; 3 meals: breakfast, lunch and dinner; snack between meals as fruits, vegetables;	Food help us grow; not to have anemia; to have strong bones; to get energy; to move; prevent diseases; to think; and eat thyme to be intelligent, active and have strong muscles; grow; be strong and clever; to live; eat three meals: breakfast, lunch and dinner. Between meals eat snacks fruits, sweets;
Different between two schools	eat variety of food to get all types of things our body need; Calcium in milk let bones be strong; Vitamins prevent feeling weak and getting fever; playing sports daily prevents growing fat and getting diseases as diabetes; nutrients; Don't miss meals; eat enough food portions; water is good for the kidneys; drinking Pepsi while eating is harmful.	eat food to be healthy; beneficial to be strong; not to feel tired; fruits contain vitamins; quench thirsty; eat before taking drugs; cooked food Vegetables and meat are beneficial for health.

The students in both schools acquired some of the knowledge mentioned in the textbooks as: "eat to live", "get energy", "grow tall", "build muscles", "improve brain functioning", "eat snack between meals as fruits, vegetables", "strong bones", "prevent diseases", "prevent anemia", "get power", "think", "succeed", "eat 3

meals: breakfast lunch and dinner and snacks between meals". Some differences in knowledge acquisition among LPS and UNRWA students appeared. For example, the students at the Lebanese Public school gave clear, specific and scientific answers to the issues they consider for choosing and the food they eat: "eat variety of food to get all types of things our body need", "calcium in milk let bones be strong", "Vitamins prevent feeling weak and getting fever", "Playing sports daily prevents growing fat and getting diseases as diabetes", "nutrients", "Don't miss meals", "eat enough food portions", "Water is good for the kidneys". While UNRWA students' debate showed less scientific reasoning. For example, they eat "to be healthy", "because it is beneficial", "to be strong", "not to feel tired", "fruits contain vitamins", "quench thirsty", "eat before taking drugs", "cooked food as vegetables and meat are beneficial for health".

In general, we can say that the students in both schools reflect both the health promotion and biomedical approaches that agrees with Carvalho et al. (2008) findings regarding textbooks. Students tried to give some justifications but they were neither complete nor data based, for example students failed to give complete statements as: "some food like milk and yogurt contain calcium and vitamin D that let bones be strong", or "proteins help to build muscles and let us be strong", "Fruits contain vitamins that help us feel to be active and not get sick". Textbooks and teaching practices need to help students acquire scientific reasoning and improve their communication skills.

3.1.2 Attitudes Related Phrases

Table 4. Attitudes related phrases said by students in LPS and UNRWA school students when discussing nutrition topic

	LPS	UNRWA
Common between two schools	eat for amusement; when nervous or feel angry to feel relaxed; like all fried food except Cauliflower or egg plants; like hamburger, and escallop, and fried food; don't like the food at restaurants where meat is poisoned and food is not clean; mom cooked food is healthier; like all types of food, if they are well cooked; like yakhni, rice, and cooked vegetables; should eat food rich in vitamins.	eat for amusement when bored; when nervous or sad to release stress, get relaxed; like fried food because it is delicious; Like all types of food; Mahshi (vegetables filled with rice and meat); all kinds of meats; shawerma and Taouk; fast food; oozy (rice and meat); spaghetti with béchamel; cooked vegetable with meat and rice; like well cooked food because it has good taste and it is beneficial; home cooked food is more tasty than food from outside.
Different between two schools	eat not to feel hungry; should eat and make sports, in order not to grow fat and get diseases; water is tasty; should not drink Pepsi when we eat; Pepsi cola helps to swallow and digest food; One should not make diets or delete meals; One should also not strive from hungry; we should not also eat more than our body needs	eat because it is beneficial; it is important to us; I like it; it is useful; The smell of food attracts me; don't eat dinner to stay thin; sandwiches or manousha prepared at restaurants are tastier than home cooked food; it has good flavor; choose the food that is good to me regardless of its taste; The smell of food attracts me; like to eat the food when they offer gifts as toys, sweets or draw on faces.

Students in both schools (LPS & UNRWA) eat food: "for amusement", "when nervous or angry to release stress and help to get relaxed". This reflects their negative attitudes towards eating. Hence, textbooks and teaching need to consider social and mental health about what they hear in their daily lives. In addition, "they like all fried food except Cauliflower or egg plants", "like all kinds of meat as hamburger, and escallop, shawerma, Tawook". This means that the students in both schools prefer to eat fried food, as fast food. Few prefer to eat vegetables. This means that they prefer to eat unhealthy food over healthy one. Establishing and maintaining healthy behaviors during adolescence is needed as it is easier and more effective than trying to change unhealthy behaviors during adulthood (Hendrie et al., 2012). The nutrition health lessons in textbooks and the teaching practices need to emphasize on the personal perception of risk and harmfulness of engaging in specific health-risk behavior. This is important to consider because as adolescents grow, they start making their own food choices and take personal decisions regarding what they eat.

The students in both schools (LPS & UNRWA) prefer to "eat food cooked by mom at home because it is healthier more than food prepared at restaurants where meat is poisoned or it is not clean", "like all types of food, if they are well cooked (cooked vegetables & rice)", "like to eat food rich in vitamins". This reflects their positive attitudes toward eating and health promotion.

Some Differences in attitudes between LPS and UNRWA students appeared. LPS students' debate showed more scientific reasoning and information not mentioned in textbooks. For example, they see that "we should eat and make sports, so that we don't grow fat and get diseases", "water is tasty", "should not drink Pepsi when we eat", "one should not make diets or delete meals", "one should also not strive from hungry", "we should not also eat more than our body needs". UNRWA students mentioned that "we eat because it is beneficial", "it is important to us", "it is useful", all these answers are scientific and indicate positive attitudes to make sound choices according to what they have learned about food groups, nutrients and consumer's health. On the other hand, some debates showed the students' negative attitudes. For example LPS mentioned that "drinking Pepsi cola helps us to swallow and digest food", while UNRWA students choose food according to their feelings as: "like eating", "the smell of food attracts me", "don't eat dinner to stay thin", "at restaurants sandwiches or manousha are tastier than home cooked food", "choose the food that is good to me regardless of its taste", "like to eat the food when they offer gifts as toys or draw on faces, free sweets as Mack Donalds". This shows that the textbook and teaching need not to focus on knowledge only, but also to consider attitudes and decision making skills related to healthy food to help students have positive attitudes towards health food and take proper decisions.

3.1.3 Practices Related Phrases

Table 5. Practices related phrases said by students in LPS and UNRWA school when discussing nutrition topic

	LPS	UNRWA
Common between two schools	eat three meals: breakfast, lunch and dinner; and snacks between meals as potato chips, fruits, vegetables chocolate or biscuit; eat fruits afternoon; afternoon I eat sandwich and then fruits; I eat manousha at recess; eat mom cooked food from at lunch; eat fruits afternoon; eat sandwich at dinner; drink lots of water; drink Pepsi cola whenever I eat food; drink every day a big bottle of Pepsi; eat breakfast alone and sometimes with family, eat Lunch and dinner with parents on the table; usually eat home cooked food, once per week at relatives homes(aunt or grandmother), and eat fast food, like hamburger or sandwiches, once per month at restaurants.	eat two meals per day and sometimes three; eat five times: in the morning I eat manousha, then a fruit for snack, then mom cooked food for lunch (cooked grapes leaves, spaghetti.), then eat snacks as fruits while we are watching TV; meals breakfast, lunch and dinner rich in fruits and vegetables; eat three meals: breakfast, lunch and dinner. Between meals I eat fruits or sweets; drink mostly water; drink Pepsi, or Miranda every day, and many times; Usually eat at home with parent, sisters, brother; sometimes eat alone; eat outside with family Manousha or sandwish once per month or if there is a trip or journey, sometimes at relatives home as grandma in EID;
Different between two schools	eat variety of foods; eat and make sports; drink a cup of milk in the morning or evening; eat cookies at night; drink juice; eat lunch daily at my grandpa house.	Sometimes I don't eat breakfast or don't eat dinner; eat well- cooked food; eat the food that is good for us, regardless of its taste' I drink beer "Laziza" without alcohol; When I feel thirsty, I drink Pepsi; eat food at restaurants with offers like gifts even if it is not tasty.

Students in both schools eat 3 meals (breakfast, lunch, and dinner) and snacks between meals. They eat potato chips, chocolate, biscuits, or fruits and vegetables for snack; eat mom-cooked food for lunch; eat manousha at morning recess; drink Pepsi cola with meals; usually eat at home with parent, sisters, brother; sometimes eat alone; eat once per week at relatives homes (aunt or grandmother); eat once per month at restaurants (fast food like hamburger, sandwiches). This shows that in general, the students practice good eating habits for the number of meals but still need to make proper decisions related to the healthy snacks and the importance of breakfast. These topics are not covered in the textbooks though they are very important (Table 2). Healthy eating patterns in childhood and adolescence are important factors to achieve better childhood health, growth, and intellectual development (Ranil et al., 2012).

LPS students' debates showed that they have additional healthy eating practices such as: "eat variety of foods", "make sports", "drink a cup of milk in the morning or evening", "eat cookies at night", "drink juice", "eat lunch daily at grandpa house". While not UNRWA students eat "well-cooked food", "eat the food that is beneficial regardless of its taste".

In the mean time, UNRWA students' debates showed more unhealthy eating practices as "miss breakfast or dinner", "drink beer Laziza without alcohol", "drink Pepsi if feel hungry", "eat food at restaurants that offer gifts even if it is not tasty".

The above phrases indicate that in general, the students at both schools have good family relations. No problems were revealed about the availability of food cooked at home by mothers. The answers given by students showed that their mothers cook various types of food that look healthy and tasty. In addition, they have some meals from time to time at relatives' house like aunts, uncle, grandma and grandpa. They also accompany parents to restaurant on weekends.

The students' answers at both schools revealed that they have low economical status. For example, one of the students at the Lebanese public school mentioned that "it is cheaper to eat at home" and accepted that. Even when they go to restaurants they eat fast food as: "We go to restaurants once per month, where we eat fast food like hamburger, sandwiches" (in Lebanese public school), "Sometimes on Sundays, dad takes us to Barbar in Hamra street, we either eat sandwiches or manousha" (in UNRWA school).

The textbooks and teaching in both schools should focus on the importance of drinking water not only because they are replacing drinking water with the drinking of soft and energy drinks but also because these drinks have been revealed to be a health risk among G7 to 9 students in the Global School Health Survey discussed earlier.

3.2 Findings Related to Students' Perceptions

Health beliefs include an individual's perception of Susceptibility to, and Severity of, diseases or disorders as well as the perception of Benefits of, and Barriers to, taking action to prevent diseases or disorders. The perceptions of Susceptibility and Seriousness combine to form a perceived threat of a disease or disorder. If the perceived Benefits of taking preventive action to avoid a disease are viewed as greater than the perceived threat of the disease, the individual is likely to modify or engage in health behavior. If the perceived Barriers to taking preventive action are viewed more negatively than the harm from the resulting disease or condition, the individual is unlikely to modify or engage in healthy behavior. The perceived benefits of healthy behaviors minus the perceived Barriers to the healthy behavior determine the likelihood of an individual taking preventative action. Using the Health Belief Model, this study attempts to address the determinants of eating behavior. The findings were grouped in different categories: Body organs, general health, well being, type and content of meals, personal preferences, living awareness and social life. Table 6 below shows the different students perceptions at LPS and UNRWA students grouped in the two major categories of the HBM: Benefits and Threats.

Table 6. Students' perceptions

Perceptions regarding the Benefits at the level of organs	
LPS	**UNRWA**
• Nourish body organs • build muscles • have strong brain • to strengthen bones • Calcium in milk let bones be strong; • Water is good for the kidneys.	• have strong muscles
Perceptions regarding the threats at the level of organs	
None	**None**
Perceptions regarding the Benefits at the level of general health	
LPS	**UNRWA**
• give energy and power • prevent diseases • grow tall • to live	• help to grow • to have strong bones • to get energy to move • to live
Perceptions regarding the threats at the level of general health	

LPS	UNRWA
• prevent feeling weak or anemic; • playing sports daily prevents growing fat and get diseases as diabetes; • don't not miss meals; eat enough food portions; • drinking Pepsi while eating is harmful; • Vitamins prevent feeling weak and getting fever;	• not to have anaemia; • prevent diseases; • not to feel tired; • quench thirst; • eat before taking drugs;
Perceptions regarding the Benefits at the level of well being	
LPS	**UNRWA**
• think; • better memory; • to succeed; • for amusement; • to feel relaxed; • should eat and make sports, so that we don't grow fat and get diseases;	• to think; • be intelligent; • active; • grow; • be strong and clever; • be healthy; • Beneficial; • not to feel tired;
Perceptions regarding the threats at the level of well being	
• don't grow fat and get diseases; • should not drink Pepsi when we eat; • should not make diets or delete meals; • not strive from hunger; • not eat more than our body needs;	• when nervous or sad to release stress, get relaxed; • well cooked food because it has good taste and it is beneficial for my health;
Perceptions regarding the Benefits w.r.t. type and content of meals	
LPS	**UNRWA**
• eat 3 meals: breakfast, lunch and dinner; • eat snack between meals as fruits, vegetables; • eat variety of food to get all types of things our body need; • Don't miss meals; • eat enough food portions; • like all fried food except Cauliflower or egg plants; • like hamburger, escallop, and fried food; • like all types of food, if they are well cooked; • like yakhni, rice, and cooked vegetables; • should eat food rich in vitamins; • eat variety of foods; • drink a cup of milk in the morning or evening; eat cookies at night; drink juice;	• eat three meals: breakfast, lunch and dinner; • eat snacks between meals as fruits, sweets; • quench thirsty; • eat before taking drugs; • cooked food Vegetables and meat are beneficial for health; • fruits contain vitamins; • I like fried food because it is delicious; • Like all types of food; Mahshi (vegetables filled with rice and meat); • Like all kinds of meats; shawerrma and Taouk; fast food; • Like oozy (rice and meat);,spaghetti with béchamel; • cooked vegetable with meat and rice;
Perceptions regarding the threats w.r.t. type and content of meals	
• I don't like the food at restaurants where meat is poisoned and food is not cleanthat	• don't eat dinner to stay thin
Perceptions regarding the Benefits w.r.t living awareness	
LPS	**UNRWA**
• water is tasty;	• I like well cooked food because it has good taste and it

• snacks between meals as potato chips, fruits, vegetables chocolate or biscuit;	is beneficial for my health; • home cooked food is more tasty than food from outside; • Eat because it is beneficial; • it is important to us;
Perceptions regarding the threats w.r.t living awareness	
• drink a cup of milk in the morning or evening; • should not drink Pepsi when we eat; pepsi cola helps to swallow and digest food; • One should not make diets or delete meals; • we should not eat more than our body needs; • I don't like the food at restaurants where meat is poisoned and food is not clean; mom cooked food is healthier;	• eat food at restaurants with offers like gifts even if it is not tasty • I drink beer "Laziza" without alcohol;
Perceptions regarding Benefits w.r.t. personal preferences	
LPS	**UNRWA**
• get snacks between meals as potato chips, fruits, vegetables chocolate or biscuit; • eat fruits afternoon; • afternoon I eat sandwich and then fruits; • drink lots of water;	• Food at restaurants sandwiches or manousha are tastier than home cooked food; • The smell of food attracts me; • like to eat the food when they offer gifts as toys or draw on faces, free sweets as MacDonalds, • Between meals I eat fruits, sweets; • drink mostly water drink Pepsi, water, Miranda; • Pepsi every day, and many times;
Perceptions regarding threats w.r.t. personal preferences	
• drink Pepsi cola whenever I eat food;	• choose the food that is good to me regardless of its taste;
Perceptions regarding Benefits w.r.t social life	
• eat Lunch and dinner with parents on the table; • eat breakfast alone; • usually eat at home cooked food; • once per week at relatives homes(aunt or grandmother).	• eat Manousha or sandwish once per month outside with family, or if there is a trip or journey; • sometimes eat at relatives home as grandma in EID; • Usually eat at home with parent, sisters, brother.
Perception regarding threats w.r.t social life	
• eat sometimes alone and sometimes with family; • eat fast food like hamburger or sandwiches at restaurants once per month.	• sometimes eat alone; • eat snacks as fruits while we are watching TV.

Nutrition lessons and textbooks need to focus on these perceptions to improve students' believes towards healthy nutrition which will lead them to better behavior. It is clear based on the above table that students in both schools are not aware of threats of bad nutrition on their general health as well as its impact on their general well being and social life.

The above table also shows that students in Lebanese schools are more aware regarding the benefits of good nutrition on the functioning of their body organs. Unrwa school students have more preferences to fast foods.

4. Discussion

Dietary patterns developed during childhood and adolescence form the basis for adult eating habits. The GSHS targeted grades (7 to 9) students in Lebanon revealed high percent of overweight and obesity students among Lebanese public school students and UNRWA students. Regarding knowledge, the students' answers at both schools showed that they have acquired the knowledge related to the benefits of food, i.e., need of food for growth, to get energy, build muscles, in addition to the food types and groups and the need to have 3 balanced meals in addition to snacks. However, some students failed to give accurate and scientific reasons for "why they eat"; this shows they are not aware of the threats of bad nutrition on health. Thus didactic transposition needs to be revised including pedagogy, lesson content and the teaching strategies used in class.

The students at both schools have some negative attitudes for "why they eat?" and "why they choose their food or drink?" They eat to "release stress", "release nervousness", "for good taste", "for amusement". Teenagers view eating fast foods as a means of expressing a youthful self and lifestyle image, while choosing healthy food is regarded as contrary to the normal image of being young (Ioannou, 2009). In the Lebanese curricula, around 97% of the specific behavioral objectives about nutrition are at the level of knowledge, 3% related to attitudes and 1% to practices. Whereas, 93% target physical health, 3% target social health and 0% target mental and emotional health (Fuddah, 2014). Teaching documents and practices need to focus on physical health in addition to mental, social and emotional health factors related to healthy eating in addition to improve the attitudes and practices. Consequently, focusing on coping and self management skills is essential. Students should observe and practice ways to: recognize links between eating disorders and psychological and emotional factors; identify personal preferences among nutritious foods and snacks; develop a healthy body image (WHO, 2001).

Lifestyle choices are important at early age, not only on the future health of the individuals, but also on the health of their future children (Crozier et al., 2009; Inskip et al., 2006, 2009; Robinson et al., 2007; Grace et al., 2012). The students' answers revealed that they prefer and eat unhealthy food. In addition, the arguments revealed that students buy unhealthy food as potato ships and biscuits from the school canteen, and buy manousha or unhealthy snacks from nearby. The textbooks and the teaching need to address different skills as decision making and critical thinking skills that help the students make correct choices.

Many students mentioned that they prefer to eat the food cooked at home and considered it healthy. So schools may communicate with parents as they are the "gatekeepers" of the family home. They are role models who control the availability of food and provide opportunities for children to be active. Interventions that target parents and the family home can be effective. The effectiveness of these interventions is influenced by the degree to which parents are involved in the intervention as well as the behavior change strategies employed (Hendrie et al., 2012). Activities to ensure that food is cooked in a healthy way with low fats and salts for example are needed. They may also focus on the breakfast as many students in both schools eat manousha or buy potato ships. At school, some activities that help students to observe and practice ways to persuade parents and friends to make healthy food and menu choices are also needed.

In addition to what is mentioned above, it is recommended that the curricula, text books, teaching practices and schools improve the work on nutrition topic by the following:

a) Include advocacy skills activities where students for example observe and practice ways to: gain support of influential adults such as headmasters, teachers and local physicians to provide healthy foods in the school environment; present messages of healthy nutrition to others through posters, ads, performances, and presentations (WHO, 2001).

b) Focus on decision making and critical thinking skills. Students need for example to observe and practice ways to: choose nutritious foods and snacks over those less nutritious; convincingly demonstrate an understanding of the consequences of unbalanced nutrition (deficiency diseases); counter social pressures to adopt unhealthy eating practices; evaluate nutrition claims from advertisements and nutrition- related news stories (WHO, 2001).

c) Focus on participatory teaching strategies to help students be in the center of learning to grasp more knowledge in addition to open ended questions as discussed earlier in this chapter when discussed the lesson about tobacco.

d) Consider the four constructs of the Health Belief Model (HBM) to improve the students' personal perceptions and intentions to let them acquire better attitudes towards healthy diets and thus help in activating the individual's readiness to undertake the proper healthy actions. In 2012, Hendrie et al. showed that such interventions lead to reduction in consumption of fast food, soft drinks and items as potato ships and candy despite their availability, signifying the willingness of students to modify their dietary behavior based on

knowledge of the health hazards of such foods. Therefore, this is an indication of "ability" to apply acquired knowledge despite possible peer pressure and the fact that fast foods are perceived current vogue in dietary practices. Demonstrations or experiments followed by discussions can better convince the students about their harms. For example: 1) pouring soft drink on a piece of meat and observe its effect, 2) or dip rusted iron nails in a glass of soft drink and then shows the changes that occur to the nail.

e) Continue the work on implementing the existing school health strategies for the Lebanese public schools and UNRWA schools which focus on the presence of healthy food in the canteens and that has already started. This is because policies provide the top-down support and reinforcement to encourage behavior change (Ardzejewska et al., 2012). Public policy also promotes behavior change through federal and state laws, school board resolutions, curricula and program guidelines. Examples include offering nutritious food choices in school vending and choosing alternative fundraisers to candy and cookie sales (Evans et al., 2008). Compulsory availability and of healthy foods in educational institutions is necessary to make sure that only healthy food is available.

5. Conclusion

Even if our work is only qualitative, and limited to the analysis of eight students' debates, during two focus groups where it was possibly difficult for them to express all they had to say, our results are interesting. The students were selected to be significant spokespersons of what, why, when, and with whom do students of grade five (age = 11 years) eat? All of these eight students freely spoke and expressed their opinion, knowledge, attitudes and practices related to the nutrition topic. There were few significant differences among the Lebanese and the Palestinian schools.

The analysis of students' arguments in the focus groups related to food and nutrition topic showed that eight the students in both schools acquired the knowledge present in the textbooks, have some positive attitudes toward healthy food, and they practice some healthy eating practices. However, they gave inaccurate and incomplete justifications with no scientific reasoning, showed some negative attitudes toward eating, and unhealthy eating practices. This suggested a list of endorsements regarding textbooks and teaching sequences. To work in the existing school health policies and in monitoring their proper implementation and improvement is essential, as for example the school canteen policy. The use of interactive teaching strategies that focus on the development of life skills is crucial to modify students' behaviors and attitudes towards healthy practices. In addition, the involvement of parents and the community in different curricular and extracurricular is fundamental. The present research on students' arguments and conceptions can also be enlarged by the analysis of the conceptions of all the actors implied in the didactic transposition (Clément, 2006): researchers, authors of syllabi and of school textbooks, teachers and authors of diverse scientific resources (TV, radio, internet, other media).

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