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**Overweight and Obesity among Male Primary School
Children aged 9 -11 years in Nablus UNRWA Schools;
Prevalence and Influencing Factors**

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M.Sc. Thesis

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9 -11 years in Nablus UNRWA Schools; Prevalence and Influencing
Factors**

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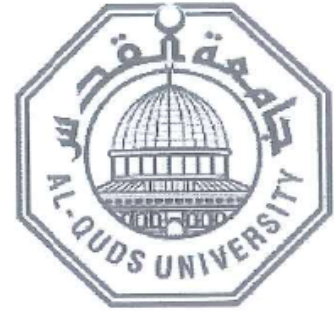
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Thesis Approval

Overweight and obesity among Male primary school Children aged 9-11 years in Nablus UNRWA Schools; Prevalence and Influencing Factors

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Declaration

I certify that this thesis submitted for the degree of Master is the result of my own research, except where otherwise acknowledged and that this thesis (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Student's Name:**Signature:****Date:**

إهداء

بسم الله الرحمن الرحيم

يحتار حرفي.. ولا يدري كيف يسطر لكم كلمات الشكر التي تقي بحقكم.. وتعبر عن مدى امتناني
لوقوفكم معي وبجانبني على مدار السنين.
فعير عبير الورد.. وعطر الزهر.. وخالص الشهد
أسوق إليكم عظيم الشكر على ما بذلتموه معي من جهد
يا من أكن لكم فائق الحب والاحترام والود
وأدعو لكم دوماً بجنات الخلد

إليك أبي الحبيب قدوتي وملهمي ومانحي المصابرة وحب التعلم
الى أمي حاضنة قلبي وعقلي صانعة ماضي وحاضري ومستقبلي

الى زوجتي معطاءة الامل ومشجعتي

الى اخوتي واخواتي عنوان طموحي

الى ابنتي مهجتا قلبي

أهدي نتاج بحثي هذا

الشكر والتقدير

الشكر أولاً وأخيراً لله عز وجل الذي وفقني لإنجاز هذا البحث العلمي الذي اجتهدت فيه كل الجهد، وتحريت فيه كل الدقة والأمانة، ليخرج هذا العمل من بعد طول معاناه إلى النور ويحقق الغاية المبتغاه.

وأخص شكري وتقديري وامتناني إلى معلمتي الفاضلة الأستاذة الدكتورة سميرة الصايح التي كان لها الأثر الكبير والبالغ من خلال متابعتها وتوجيهاتها ونصائحها العلمية والأدبية، والأستاذة لجنة تحكيم الاستبانة والشكر أيضاً إلى وكالة الغوث قسم التعليم التي منحتني الفرصة لجمع البيانات من مدارسها والشكر أيضاً إلى الطلاب الذين شاركوا في هذه الدراسة وكل من ساهم ومن ساعد ونصح وقدم لإنجاز هذه الرسالة.

لهم جميعاً خالص شكري وامتناني وتقديري

والله ولي التوفيق

Abstract

This study to determine the prevalence and influencing factors to overweight and obesity in children. Obesity is a multi-factorial disease that is developed from an interaction between heredity, environment and behavior. It is a major public health problem resulting in a serious social, physical and psychological damage. The prevalence of overweight and obesity among children is rising to alarming levels in developed and developing countries. prevalence of obesity and overweight in the Palestinian reports are few, in addition to lack of studies that show the factors that led to the prevalence of overweight and obesity in children, therefore, this study has been carried out to find out more information's and recommendations about prevalence and influencing factors of overweight and obesity in children .

The study aimed to obtain data about the prevalence of overweight and obesity and associated factors that affect weight of school children aged (9-11) years in Nablus male UNRWA schools. The factors were socioeconomic status, eating habits and physical activity.

A cross-sectional study among male school children aged 9-11 years in Nablus UNRWA schools. The Stratified systematic random sampling was used to represent 7 UNRWA male schools. The sample consisted of 295 students out of 1260. Each one of targeted children in the representative sample was measured weight and height to obtain his BMI, then a questionnaire to fill out.

The BMI scale utilized, BMI calculated by a computer program specially design to this purpose (Sex, age) height (in meters) and weight (in kilograms), then the BMI was automatically calculated (Centers for Disease Control CDC chart among boys 2-20 years, 2009).Data were analyzed using SPSS version 21.

The results indicated the prevalence of overweight and obesity among children aged 9-11 years found in this study was 23% and 12.6% respectively.

Although there was no intention to study underweight prevalence yet a striking result was found when around 1/5 (18.7%) of the children were underweight and 45.7% of the remaining sample were at a normal weight.

Regarding place of students residency, the percentage of overweight and obesity among students living in camps higher than those are living in village or city. There was a significant statistical association between students residency place and overweight/obesity status.

Eating habit such as number of meals per day, Bread, Dairy products, Legumes, Meat, Fruits, Vegetables, cooked Vegetables, fast food and Beverage consumption did not have any significant association with overweight/obesity status. There was a significant statistical association between students who eat Potato chips, salted biscuits, drink Tea, Juice and overweight/obesity status. On the other hands there is no significant association was found between physical activities and overweight/obesity

The relationship between the socio-demographic characteristics and eating habits among targeted children, there is a statistical relationship between father's work, place of residence and students who eat Fruits. In addition to a statistical relationship between fathers education levels and students who drink Cola. Whereas a statistical relationship between mothers education levels and students who drink Milk, drink or eat while watching TV.

On the other hand, there is a statistical relationship between children mother's work and children eat Chicken, fried Potato. there was a statistical relationship between children who eat Mallow, Spinach, Canned Tuna Fish, Lamb Meat, Pizza and their

sibling's number. finally, there is a statistical relationship between children who eat Lettuce, Carrot, Mallow, Spinach Potato Chips, Fruits, salted Biscuits and children families income.

The researcher presented in the light of these findings, a set of recommendations:

1. Additional studies in Palestine to stand on the obesity and underweight problem among school children.
2. The formation of a national committee to combat malnutrition (underweight, overweight and obesity) in Palestinian society to be represented by the relevant authorities.
3. Raise awareness and health promotion regarding the quality and quantity of food intake and physical activity among Palestinian children.
4. Family based interventions should encourage to maintain healthy dietary habits.
5. Further comprehensive research is required to study the lifestyle of the families of obese children and how to prevent obesity.
6. Provide the appropriate environment for practicing sports activities in the Palestinian society, such as increasing green spaces and the creation of enclosed lounges.
7. Additional a system for providing healthy meals (such as cooked food, vegetables, fruit) for students within the school canteens.

نسبة إنتشار زيادة الوزن والسمنة والعوامل المؤثرة التي أدت لهما عند الأطفال

إعداد: صالح محمد فرج ابو لفح

المشرفة: د.سمية صايح

ملخص الدراسة

تناولت هذه الدراسة تحديد نسبة إنتشار زيادة الوزن والسمنة والعوامل المؤثرة التي أدت لهما عند الأطفال، حيث تعد السمنة مرض متعدد العوامل التي تم تطورها من التفاعل بين الوراثة والبيئة والسلوك. إذ انها مشكلة صحية عامة رئيسية وتؤدي إلى أضرار إجتماعية ومادية ونفسية خطيرة، حيث أن إنتشار زيادة الوزن والسمنة بين الأطفال أخذ في الإرتفاع إلى مستويات تنذر بالخطر في البلدان المتقدمة والنامية. فإن الدراسات والمعلومات حول نسبة إنتشار السمنة قليلة، بالإضافة الى قلة الدراسات التي تبين العوامل التي أدت الى إنتشار السمنة عند الأطفال لذلك جاءت هذه الدراسة لتضفي مزيدا من المعلومات والتوصيات حول نسبة إنتشار زيادة الوزن والسمنة والعوامل التي أدت لهما.

تهدف هذه الدراسة للحصول على بيانات حول نسبة إنتشار زيادة الوزن والسمنة والعوامل المؤثرة (الوضع الإجتماعي والديموغرافي، عادات الأكل والنشاط البدني) التي أدت لزيادة الوزن عند أطفال المدارس الذكور الذين تتراوح أعمارهم (9-11) سنة في مدارس الأونروا في مدينة نابلس.

هذه دراسة مستعرضة بين أطفال المدارس الذكور الذين تتراوح أعمارهم 9-11 عاما في مدارس نابلس التابعة للأونروا، حيث استخدمت العينة الطبقية المنتظمة العشوائية لتمثل 7 مدارس ذكور تابعة للأونروا. حيث تكونت عينة الدراسة من 295 طالبا من أصل 1260. كل طالب من الطلبة المستهدفين في عينة تمثيلية عشوائية تم قياس الوزن والطول له للحصول على مؤشر كتلة الجسم، ثم يتم تقديم إستبيان للطالب لتعبيته بمساعدة الأهل وكان ذلك خلال العام الدراسي 2014-2015، حيث استخدم الباحث لأغراض الدراسة استبيان منظمة الصحة العالمية المستخدم في الدراسة العالمية للسلوكيات الصحية لطلاب المدارس (HBSC).

بعد تحليل النتائج بإستخدام برنامج الرزم الإحصائية للعلوم الإجتماعية (SPSS) والإستدلال عليها بعدد التكرارات والنسب المئوية وأيضا إستخدام مقياس مربع كاي وقيم المؤشر «بي» لتوضيح بعض العلاقات التي توصلت اليها الدراسة الى عدد من النتائج أهمها:

نسبة إنتشار زيادة الوزن والبدانة بين الأطفال الذين تتراوح أعمارهم 9-11 سنة في هذه الدراسة (23.%) و(12.6%) على التوالي. وبالرغم من عدم وجود نية لدراسة نسبة إنتشار نقص الوزن حيث كانت نتيجة مذهلة بأن حوالي (18.7%) من الأطفال يعانون من نقص الوزن، بينما كان (45.7%) من العينة المتبقية أوزانهم ضمن الطبيعي.

من ناحية العلاقة بين الوضع الإجتماعي والديموغرافي للأطفال ونسبة إنتشار زيادة الوزن والسمنة، وجد أن هنالك علاقة ذات دلالة إحصائية بين مكان سكن الأطفال (مدينة، قرية، مخيم) مع حالة زيادة الوزن والسمنة.

اما من ناحية العلاقة بين العادات الغذائية عند الأطفال ونسبة إنتشار زيادة الوزن والسمنة عثر على علاقة ذات دلالة إحصائية بين الطلاب الذين يتناولون (الشاي، العصائر الغير طبيعية، شيبس البطاطا والبسكويت المالح) مع حالة زيادة الوزن والسمنة. في حين لا توجد هناك أي علاقة إرتباط ذات دلالة إحصائية بين النشاط البدني لدى الأطفال مع حالة زيادة الوزن والسمنة.

ومن حيث العلاقة بين الخصائص الإجتماعية والديموغرافية وعادات الأكل بين الأطفال المستهدفين، لوحظ وجود علاقة ذات دلالة إحصائية بين (مكان السكن، عمل الآباء) مع الطلاب الذين يتناولون الفواكه. بالإضافة إلى وجود علاقة ذات دلالة إحصائية بين المستوى التعليمي للآباء والطلاب الذين يشربون الكولا. في حين وجد علاقة ذات دلالة إحصائية بين المستوى التعليمي للأمهات والطلاب الذين يمارسون عادات غذائية مثل (شرب الحليب، تناول الاكل والشرب أثناء مشاهدة التلفزيون).

بالإضافة لوجود علاقة ذات دلالة إحصائية بين عمل الأمهات والطلاب الذين يأكلون الدجاج والبطاطس المقلية. كما لوحظ بوجود علاقة ذات دلالة إحصائية بين الطلاب الذين يأكلون (الملوخية، السبانخ، التونة المعلبة، اللحوم الضأن، البييتزا) وعدد أختهم. أما من ناحية دخل الأسره فهناك علاقة ذات دلالة إحصائية بين الطلاب الذين يتناولون (الخس، الجزر، الملوخية، السبانخ، البطاطس، الفواكه، البسكويت المملح) ودخل أسرهم.

قام الباحث في ضوء النتائج سابقة الذكر بمجموعة من التوصيات ؛ كان ابرزها:

1. دراسات إضافية في فلسطين للوقوف على السمنة ومشكلة نقص الوزن بين أطفال المدارس.
2. تشكيل لجنة وطنية لمكافحة سوء التغذية (نقص الوزن، زيادة الوزن والسمنة) في المجتمع الفلسطيني في أن تكون ممثلة من قبل السلطات المختصة.
3. رفع الوعي وتعزيز الصحة فيما يتعلق بنوعية وكمية الطعام المتناولة والنشاط البدني بين الأطفال الفلسطينيين.
4. تشجيع العائلات على الحفاظ على العادات الغذائية السليمة.
5. دراسة شاملة على أسلوب حياة أسر الأطفال الذين يعانون من السمنة وكيفية منعها.
6. توفير البيئة المناسبة لممارسة الأنشطة الرياضية في المجتمع الفلسطيني، مثل زيادة المساحات الخضراء وإنشاء الصالات المغلقة.
7. توفير نظام لتقديم وجبات صحيه مثل (الطعام المطبوخ، خضراوات، فواكة) للطلاب داخل مقاصف المدارس.

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Abbreviations

PCBS	Palestinian central Bureau of Statistics
BMI	Body Mass Index
WHO	World Health Organization
UK	United Kingdom
USA	United States of America
NNSS	National Nutritional Surveillance System
NCD	Noncommunicable Disease
ITFO	International Obesity Task Force
HBSC	Health Behavior in School-aged Children
UNRWA	United Nations Relief and Works Agency
FAO	Food and Agriculture Organization
MOH	Ministry of Health
CDC	Center for Disease Control and Prevention
CVD	Cardio- Vascular Disease
TV	Television
SPSS	Statistical Package for Social Sciences
WOC	Weight Of Children
UW	Underweight
NW	Normal weight
OW	Overweight
Alpha	International for Research, Polling and Informatics

Chapter I

Introduction

1.1. Introduction.

Obesity is forming a dilemma that most people in today's world pay attention to due to its impacts on human life, both from a medical standpoint and a social point of view. As for its effects on human appearance, it couldn't be considered as a big deal, but simply unattractive or not particularly physically pleasing. However, it is, surely, playing a core role in endangering people's lives and especially the lives of children. So, what is obesity and how does it affect children? What scale should we use to recognize obesity in children? And, how is obesity accumulated in children?

According to International Obesity Task Force, ITFO (2004) Increasing prevalence of overweight and obese children is an interesting public health problem contributing to a significant rise in morbidity and mortality rates.

Obesity is a condition in which excess body fat has accumulated to an extent that health may be negatively affected. While, overweight children have high weight for their height and may be at risk of obesity and its complications (Willows et al., 2005). BMI is Modified Body Mass Index for age used to define obesity in children, BMI >85 % and less than 95 % is considered as overweight, BMI > 95 % is considered as obese, whereas the normal weight range is between 5% - < 85% and underweight is below 5%,this tool is an essential component to identifying the degree of overweight and obesity (CDC., 2005).

The ITFO (2004) reported the children's physical growth rate and development are increasing at a faster pace at the pubertal phase and children have the tendency to

accumulate fat when total energy intake exceeds total energy expenditure. This energy imbalance can result from excessive energy intake and/or reduced energy expenditure for body metabolism, thermoregulation and physical activity. This means, children who regularly consume food rich in high calories, more than their bodies' need, will gain weight and become obese over time making obesity of children one of the most widespread medical problems in these days.

The prevalence of overweight and obesity among children is rising to an alarming level in the developing and the developed countries (Caius & Benefice, 2002). The WHO Fact Sheet (2010) indicated that overweight and obesity during childhood has become a major worldwide problem; more than 40 millions of children under the age of five were overweight in 2011, and 65% of the world's population live in countries where overweight and obesity kill more people than those who are underweight.

Since overweight and obesity are associated with other diseases, and contribute harmfully towards people's overall health, they are serious health problems (Kopelman, 2007). Prior to that Willows et al.,(2005) mentioned of those health problems such as type 2 diabetes, high blood pressure, high levels of fat and insulin in the blood, joint problems, gall stones, and breathing problems when sleeping. To elaborate, non- communicable diseases (NCDs) may result from non-infectious and non-transmissible factors often resulting from modifiable lifestyles. Further to that, WHO (2011) reported that children are frequently victims of air pollution and behavioral risk factors such as: tobacco use, unhealthy diet, and lack of physical activity leading to becoming overweight and having raised blood pressure and cholesterol,it is worth mentioning that 80% of NCDs deaths occur in low and middle income countries

Again, obesity, in general, is a multi-factorial disease that is developed from an interaction between genotype, environment and behavior. It is a major public health problem resulting in serious social, physical and psychological damage (da Mota&Zanescio, 2007). According to Hussieni (2001) the underlying causes of obesity are not definitely known. It is determined by several behavioral factors which interact with environmental ones, these factors affection body energy balance and lead to an excess in energy intake which will lead to being overweight or obese.

The main risk factors for obesity in Arab countries generally includes feeding habits, lack of physical activity, low family income and lack of health education (Al-Saeed, et al, 2007).

The total population in Palestine is 4,420,549 distributed between the West Bank and Gaza Strip, the percentage of the population who come from the age group (0-14 years) in Palestine is 40.1% divided between the West Bank 38.0% and 43.4% Gaza Strip. 58%of West Bank population are refugees, living in camps or surrounding camps. Refugees' children comprise 44.4% of the total children in the occupied Palestinian Territory, 68.8% of total Palestinian students were enrolled in governmental schools, 23.4% were enrolled in UNRWA schools and 7.8% in private schools, UNRWA provides only preparatory education (the 9th Grade) while, secondary students (matriculate) education is provided into national schools. However, Refugee camps suffer from low economic status, overcrowded houses, narrow streets, as well as a lack of many other basic human needs (PCBS, 2012). Accordingly, the UNRWA school children are a good resource for the study procedure to assess prevalence of overweight and obesity.

1.2. Problem statement

Health Behavior in School aged Children (HBSC, 2011) study has been conducted in more than forty countries and found differences in the effect of socio-demographic factors: low-economic countries, low family incomes, two uneducated parents and congested areas of living on school children are suffering from being overweight. Such characteristics are typical to the proposed study population.

According to Doustmohammadian. (2009) study, parents have a great influence on their children's behaviors regarding their diet and sport activities.

Siam study., (2011) in western Gaza city found the rate of obesity between male children in the elementary schools aged 10-12 has reached 4.3% and related the reasons to the habit of eating during TV watching in conjunction with less body activity.

According to PCBS., (2012) 43.5 % of West Bank refugees are living in Nablus area, while the left 65% are distributed in the whole West Bank.

In addition to UNRWA.,(2007) indicated that the Palestinian camps characterized by tight spaces and most of the Palestinian living in the camps suffer from low family income and increase family members. Low-income families, an increase of family members and tight spaces for the exercise of children's physical activities, these factors may be reflected in the social life and health behavior of children, which may lead to weight problems such as overweight or obesity.

Accordingly, this study aims to identify the prevalence of overweight and obesity among male primary school children aged 9 -11 years in Nablus UNRWA schools and

identify the influencing factors that affect on the prevalence of overweight and obesity such as socioeconomic status, eating habits and physical activity.

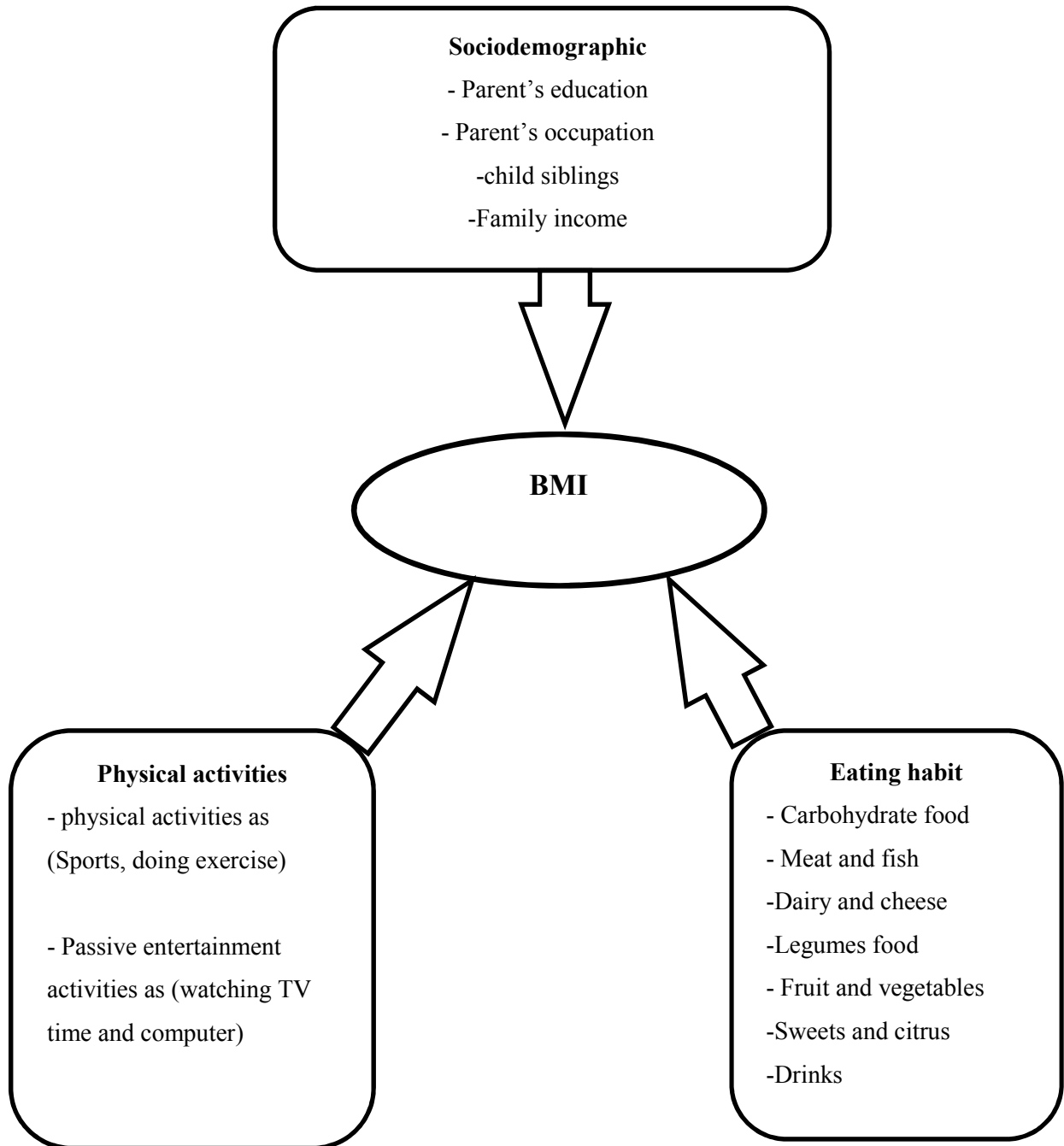
1.3. Significance of the study

Overweight and obesity has been identified as key risk factors of preventable morbidity and mortality of many diseases, such as hypertension, cardiovascular disease and non-insulin-dependent Diabetes Mellitus. As the health, psychological and economic costs of overweight and obesity are very high, effective general prevention of overweight, including, among young people, is essential, where this strategy requires studies identifying such problems which ultimately will lead to reduce financial and social burdens on children and their families.

Palestine lacks studies that estimate the prevalence and influencing factors of overweight and obesity among children. Furthermore, reports on the prevalence of obesity and overweight in Palestine are scarce; the only data found in the Ministry of Health is the report of at Directorate of nutritional department in the National Nutritional Surveillance System (2011),the report found that the overall prevalence of overweight school children from 5-10 years was 15.12% (14.7% in the West Bank and 15.17% in the Gaza strip) the highest prevalence was in Nablus, north Gaza and Bethlehem (20.89%- 18%- 17.59%) respectively and the prevalence of obesity among school children from 5-10 years was 0.67% and again the highest was in Nablus indicating a large difference among overweight and obesity. Therefore this study is going to determine the relations between the prevalence of overweight / obesity and the influencing factors leading to overweight and obesity among school children aged 9-11 years in Nablus UNRWA schools for boys.

Depending on the results of the study, The results could assist health educators to develop and adopt an international strategies and policies to prevent and decrease the children overweight and obesity, which will in the same sense decrease the health financial, and social complications. Therefore, this study was conducted to estimate the prevalence and influencing factors of overweight and obesity among primary male school children aged 9-11 years in Nablus UNRWA schools.

1.4. Conceptual framework



1.5. Operational definitions

Body Mass Index (BMI): is a measure used to determine childhood overweight and obesity. It is calculated using a child's weight and height. BMI does not measure body fat directly, but it is a reasonable indicator of body fatness for most children and teens. A child's weight status is determined using an age- and sex-specific percentile for BMI rather than the BMI categories used for adults because children's body composition varies as they age and varies between boys and girls. It's calculated as the weight in kilograms divided by the square of the height in meters (Kg /m^2) (CDC, 2005).

Overweight: is defined as a BMI at or above the 85th percentile and lower than the 95th percentile for children of the same age and sex (WHO, 2003).

Obesity: is defined as a BMI at or above the 95th percentile for children of the same age and sex. (WHO, 2003).

Weight (human body): is person mass measured in kilogram or pound Science dictionary, 1979).

Height: is the distance between the lowest and highest points of a person standing upright; stature (Science dictionary, 1979).

Prevalence: The proportion of individuals in a population having a disease or characteristic. Prevalence is a statistical concept referring to the number of cases of a disease that are present in a particular population at a given time, whereas incidence refers to the number of new cases that develop in a given period of time. (Medical dictionary,2012).

Socioeconomic:involving both economic and social factors(Medical dictionary,2011).

Physical activity: is any bodily movement produced by skeletal muscles that require energy expenditure (WHO, 2003).

Eating habits: The practices related to food intake, including kinds of foods, how to eat (WHO, 2003).

UNRWA : United Nations Relief and Works Agency for Palestine Refugees (Free dictionary, 1991).

1.6. Study goal and Objectives

The study aimed to obtain data about the prevalence of what and associated factors that influence weight of school children aged (9-11) years in Nablus male UNRWA schools.To achieve this goal, the following measurable objectives were set:

1. To determine the prevalence of overweight and obesity among male school children aged (9-11) years in Nablus UNRWA schools.
2. To investigate the relationship between BMI and socio-demographic characteristics among male school children aged (9-11) years in Nablus UNRWA schools.
3. To investigate the relationship between BMI and eating habits among male school children aged (9-11) years in Nablus UNRWA schools.
4. To investigate the relationship between BMI and physical activity among male school children aged (9-11) years in Nablus UNRWA schools.
5. To investigate the relationship between socio-demographic characteristics and eating habits among male school children aged (9-11) years in Nablus UNRWA schools

1.7. Hypothesis

1. There is no significant relationship between overweight and obesity among school children at a level of ≤ 0.05 attributed to socio-demographic characteristics.
2. There is no significant relationship between overweight and obesity among school children at a level of ≤ 0.05 attributed to eating habits.
3. There is no significant relationship between overweight and obesity among school children at a level of ≤ 0.05 attributed to physical activity.
4. There is no significant relationship between socio-demographic characteristics among school children at a level of ≤ 0.05 attributed to eating habits.

Chapter II

Literature review

Through this chapter, provided global, regional and national studies levels related to this study concepts and variables. Then, the studies are divided into three parts: Prevalence of overweight and obesity among children, definitions and measurements of overweight and obesity complications and factors influencing children weight such as (socio-demographic, physical activity and eating habits).

2.1. Prevalence of Overweight and Obesity

There are ample reports about the prevalence of obesity among children worldwide which in some studies, have reported that the prevalence is increasing (Vaska&Volkmer, 2004).

In 2005, at least 20 million children under the age of 5 were overweight (WHO, 2010) which means that being overweight or obese is presenting a rapidly growing threat to the health of populations in an increasing number of countries; the fact that by 2015 the number of overweight adults is predicted to reach 2.30 billion and more than 700 obese children demonstrates this.. Moreover, Shannon (2011) the National Health and Nutrition Examination Survey in the United States has been tracking the level of overweight children and obesity rates since the 1960's pointed out that between the years 1963 and 2008, the rate of obesity among children at the ages between 2 and 19 have been inching upwards also, during 1963 to 1970 found that, 4.2 % of 6 to 11 years old children and 4.6 % of 12 to 19 years adults were obese. Wang et al., (2002) examined the trends of overweight among youngsters aged 6 -18 years from the United States, Brazil, China, and Russia using international references. Thus, nationally representative data from Brazil (1975 and 1997), Russia (1992 and 1998), the United States (1971 to 1974 and 1988 to 1994) and nationwide survey data

from China (1991 and 1997) were used. The prevalence of overweight children increased during the study periods in Brazil (from 4.1% to 13.9%), China (from 6.4 %to 7.7%), and the United States (from 15.4% to 25.6%) meanwhile the annual rates of increase in the prevalence of overweight children were 0.5% (Brazil), 0.2% (China), -1.1% (Russia), and 0.6% (United States). In addition, in The United States during the period 1999-2000, 16. 5% of children aged 6 - 19 years were at risk of becoming overweight or actually being overweight and 13. 5% were obese in comparison with the same studies rated at 29. 95% and 15% respectively in 2001-2002 (Hedley et al., 2004).

In addition, Baskin & Frank et al., (2005) indicated that the prevalence of obesity has significantly increased among the US population over the past 30 years; data collected from 1999-2002 estimated that scarcely one in every six children and adolescents are obese or overweight. In the same sense, while Lioret et al., (2007) was assessing the prevalence of childhood overweight and obesity among French children aged 3-14 years and examining how physical activity and sedentary behavior are involved in associating socioeconomic status and overweight, taking into account total energy intake, he found that 15.2% of the children are overweight and/or obese.

International Obesity Task Force ITFO (2005) predicted that by 2010 about 38% of school-age children in the European region would be overweight and more than a quarter of these children would be obese which means that by 2050, the prevalence of obesity is predicted to affect 25% of children.

Al-Haddad et al., (2005) studied obesity among Emiratis school children aged 1-18years, and found that the prevalence of overweight and obesity was as follows: 21.5% of students were at risk of becoming overweight and 12.1% were classified as overweight. Similarly, Al-Nuaim et al., (1996) determined that the prevalence of

overweight and obesity among male school children aged 6-18 years old, in a study population of 9061 male school children in public schools in Saudi Arabia. Anthropometric measurements of weight and height were done for all study samples. Their results showed that, the overall prevalence of overweight was 11.7% and obesity was 15.8%.

Khader et al.,(2009)studiedthe prevalence of overweight among Jordanian children aged 6-12 years was high 8.85% of boys versus 19.9% of girls while the prevalence of obesity was lower, 5.6%of boys were obese versus 5.5%of girls.

Reports on prevalence of obesity and overweight in Palestine are scarce, the only data found was from the Ministry of Health, Directorate nutritional department in the National Nutritional Surveillance system report (2011) which reports that the overall prevalence of overweight and obesity among school children from 5-10 years was 15.12% (14.7% in West Bank and 15.17% in the Gaza Strip) the highest prevalence was in Nablus, north Gaza and Bethlehem (20.89%- 18%- 17.59%) respectively and the prevalence of obesity among this group was 0.67%.

Isbaih., (2009) studied the prevalence of overweight and obesity among school children aged 6-12 years in Nablus city were found 13.3% and 7.9%, respectively among males, while it was13.6% and 4.9% respectively among females.

2.2. Definition and Measurements of overweight and obesity

Overweight and obesity, are defined as a situation by which there is excess body fat leads to health impairment, and so clinically, it's defined for adults as Body Mass Index (BMI) ≥ 30 which was used to define obesity in children, so that BMI > 85 percentiles is considered as overweight, BMI > 95 percentiles is considered as obese, whereas the normal weight range is between 5%-85% and underweight is below 5 % (Summerbell et al., 2005).

Wang (2001) said body mass index (BMI) is a well-recognized, international tool which compares well with the World Health Organization (WHO) standard for measurement of obesity and is frequently used to determine obesity in population based research studies, whereas BMI as an index of childhood obesity provides consistency with measurement practice for adult BMI cut offs which were 25 kg/m² for overweight and 30kg/m² for obesity and which is used for determining adiposity (Reilly, et al., 2000) and simply weight adjusted for height, is a more practical and widely used method to screen for obesity. Calculated as weight (kg) divided by height (m²), BMI corrects for body size and can be quantified readily and reliably in clinical settings (Power et al., 1997).

Finally, it is important to note that BMI in childhood changes substantially with age, at birth the median is as low as 13 kg/ m², it then increases to 15.5 kg/ m² at the age of 6 years, and finally increases to 21 kg/ m² at age of 20 year (Cole et al.,2000).

2.3. Influencing factors that lead to child overweight and obesity

Obesity is a multi-factorial disease that develops from the interaction between genotype and the environment in the way that polymorphisms in various genes control appetite and metabolism predispose to obesity when sufficient food energy is present (Poirier et al., 2006).

Noncommunicable diseases (NCDs), beside heart disease, cancer, and type II diabetes kill people every year more than any other disease. In terms of epidemiology, this study added that there are 4 factors associated with obesity, poor diet, the lack of physical activity and the consumption of tobacco or alcohol. Furthermore, WHO & FAO emphasized resistance to these diseases and reductions of their impact are through controlling the risk factors for these diseases (WHO & FAO., 2004).

In the same sense, Al -Sabbah et al, (2009) wrote that there is a relationship between a healthy diet for most people and social factors and economic geography, therefore dietary habits are, all linked to the cultural identity and social terms that parents have a significant effect on such as dietary behaviors and perceptions about body image and weight among their children. On occasion, it was previously reported by Ajlouni et al., (1998) that the main risk factor for obesity in Arab countries generally includes feeding habits, lack of physical activity, family income and health education. Siervogel et al., (1991) also reported that medications and other rare factors such as hormonal disorders associated with childhood obesity, including the growth hormone deficiency, hypothyroidism and Cushing syndrome.

In brief, healthy lifestyle habits, including healthy eating and physical activity, can lower the risk of becoming obese and develop related diseases (U.S. Department of Health and Human Services, 2010).

2.3.1. Socioeconomic status factor

Klien-Platate et al., (2003) indicated that overweight among young French adolescents was more frequent in low economic zones and in public schools than in private schools proving Castillo et al., (2001)report which considered that high prevalence of obesity and overweight among children was evident in poor rural communities of Mexico. The drawn result of a study conducted in Turkey concluded that overweight and obesity are high for children and adolescents in low socioeconomic status regions (Yoca et al., 2010).

Truong et al., (2005) body mass index (or BMI, an indicator of excess body fat) was escalating annually, during the period between 1986 and 2002, among children in the lowest income and the lowest education groups more than among those in the highest income and education groups, respectively.

In the same course, Singh et al., (2010) revealed that obesity rates increased by 10 percent for all U.S. children aged 10- 17 years old in the period between 2003 and 2007, but by 23 percent during the same time period for low-income children these result were proved right byDrewnowski et al., (2009)report in California, which said higher community poverty rates were strongly associated with higher childhood overweight rates thus supported Alaimo et al., (2001) report that said children in families with low income were significantly more likely to be overweight than children in families with high income.

Initial reports indicated that although obesity is associated with higher socioeconomic status in early childhood, it begins to predominate in poorer females in late childhood and adolescence. In general, excess weight gain in children was reported to be more prevalent among lower income families (Wang et al., 2002).

Karaçam et al., (2011) said that the correlation of the prevalence of overweight and obesity with certain socio-demographic characteristics, and the prevalence of overweight and obesity, among 460 primary school children aged 8-11 years in Aydin-Turkey was found to be 13.7% and 12.8% respectively and this condition was correlated with the increased number of family members.

In the same way, Lamerz et al., (2005) assessed the association between socioeconomic status (SES) and childhood obesity among 2020 German children and which factor in particular stands out in relation to obesity. The indicators of parental education were most strongly associated with children's obesity. On occasion, Children of the lowest social status had more than three-fold risk to be obese than children of the highest social status in the screening population.

Prominently, Abu Baker et al., (2010) studied the prevalence of overweight and obesity among Adolescents aged 12-16 years in Irbid governorate, Jordan, and compared the residential area with socioeconomic status. In a cluster random sample of 1355 school students the prevalence of overweight and obesity (body mass index \geq 85th percentile) was 24.4% (15.7% overweight and 8.7 % obese) which was significantly higher than among students who lived in urban areas and those with working parents.

The Palestinian Central Bureau of Statistics PCBS (2012) described that the grinding poverty indicates a family of 2 adults and 4 kids and their parents living with a revenue of 1000 shekels (250.6 \$) or less per month nearly 5.5 shekels a day (1.38\$) for each individual. It is also important to note that, 2000 Shekels as a monthly revenue is a level which comes under the poverty line as well as 2000-3000 Shekels monthly revenue, which equals to 501.2- \$751.9 is a level above the poverty line.

2.3.2. Eating habits

The dietary habits of children have shifted away from healthy foods such as fruits, vegetables, and whole grains to a much greater reliance on fast food, processed snack foods, and sugary drinks. These foods tend to be high in fat and/or calories and low in many other nutrients especially vitamins, minerals and fibers. Also, some eating patterns have been associated with such as eating with hunger and eating while watching TV or doing homework (Johnson and Birch., 1994). That means avoiding fruit and vegetables, the important components of a healthy diet, which are daily ingested in sufficient quantities that help in protecting against chronic diseases such as heart disease, some cancers and type II diabetes.

As Birit et al., (2007) added, the consumption of high amounts of saturated fat, a low consumption of fruits and vegetables and the consumption of sugar are all factors associated with serious diseases such as obesity, high blood pressure, strokes and others. Bryn Austin et al., (2011) said, eating habits have also been modified, that is formerly, and meals were usually cooked at home with fresh ingredients, although nowadays the consumption of frozen meals, pastries and anything that allows us to spend the least time possible has increased some bad eating habits and consequently lead to the problem of excess weight.

The foods that are high in fat and sugar, such as crisps, sweets, wafers, colas, fizzy drinks, pizza and burgers, are highly processed foods with poor nutritional value which according to the Foods Standards Agency are labeled as junk foods. In fact, the concept of junk foods corresponds to any food that is immediate, delicious and convenient. Also, Junk foods have food additives and colors, making them appetizing in a way that makes them harmful for bodies. Additionally, junk foods include a high level of calories, and even though they lack micro-nutrients such as, vitamins,

minerals, amino acids, and fiber, the high level of energy is not useful, because it includes harmful carbohydrates, fats and cholesterol (India Parenting, 2010).

Eating habits and inclinations to food are acquired in early childhood, representing behavior traits that may change over time according to personal experiences Albalá & Carnell et al., (2002) therefore the broad social influences that clearly have an impact on dietary intake, and it is accepted that family influences (both common environment and genetic inheritance), play a role in determining food intake patterns, eating behavior and childhood obesity Ashcroft & Dubois et al., (2008), so high-fat and sweet foods are usually preferred by children of any countries, whereas vegetables are almost universally unwelcomed Bellisle et al., (1997).

Gregory et al., (2014) reported a statistical relation between potato chips consumption and the increase of body weight in children aged 3-11 year in 9 countries (Argentina, Brasil, France, Georgia, Germany, Great Britain, India, Italy and Mexico).

Finally yet importantly, studies conducted in Palestine showed that the fundamental cause of obesity in adults is the poor quality of food which largely depends on starch food in addition to the lack of information about children's and adolescents' nutrition and anthropometric measurement to determine their health and morbid situations. So to speak, Anthropometric measurement is taken by MOH only for grade one children; where the prevalence of obesity reaches 1.1% among them (MOH, WHO., & UNICEF., 2005).

Al-Assa.,(2012) study nutrition habits and physical activity among school students in governmental schools in Bethlahem city, there was a slightly increase in the ratio of choosing healthy sorts of food among students such as: apples and pizza, most students chose unhealthy snack foods; such as: chips, fries, cola and so on. Moreover, the results of the study show clearly that the availability of healthy foods in school

cafeterias and canteens help students to develop healthy food behaviors because the majority of students depend mainly on buying their main meal from schools canteens during the break.

2.3.3. Physical Activity

As Jebb and Moore., (1999) the negative association between obesity and the lack of exercises was reported as the physical activity was recognized as a major part in the management of obesity. In fact, physical activity emerged as the most important contributory factor to obesity status and to an increased energy expenditure which is the most obvious mechanism for the effects of exercise (Chambliss., 2005).

WHO's (2004) study on the Global Strategy of diet and physical activity, reported that physical activity is one of the major determinants of the exchange energy, and it is therefore a key factor in achieving a balance between spending energy and appropriate weight. The report added that physical activity reduces the risk of heart disease, protects against some types of cancer, improves the ratio of protein, controls the glucose, and improves functional status among the elderly. In addition, Dennison et al., (2002) described the TV/video viewing habits of a multiethnic, low-income child and determined whether TV/video viewing is related to their adiposity. Children with higher weight status spent more time in sedentary activities, e.g. watching TV and playing video games than those with lower weight status. (Vandewater et al., 2004).

Albu et al., (1997) added that the most available evidence suggests that the lower activity-related energy expenditure is an important contributor to an increasing prevalence of obesity, although a blunted response to food intake and reductions in resting energy expenditure may have an impact on weight gain. That means a low

participation in sports activities, a lack of interest in exercising and a high number of hours spent sitting down at work are statistically significant predictors of obesity (Martinez 1999). Ultimately, there is a belief that Children generally do not spend enough time on physical activity, which enhances their health and development properly but rather they spend more time than they should be on non- physical activities such as watching television and playing video and computer games (US Department of Health Human Services, 1996).

2.4. Complications of the Overweight and Obesity

Obesity and overweight are considered an important health issues because child weight status is directly related to adult health status (Dietz, 1998). That is, Obesity and overweight are associated with significant health problems among adults and children, with an increased risk of morbidity and mortality. It is well documented that obesity raises an individual's susceptibility to many chronic illnesses (Hawaii's Medicaid, 1994).

Accordingly, overweight and obesity represent a rapidly growing threat to the health of populations in an increasing number of countries as they are associated with several risk factors, including coronary heart disease, hypertension, strokes, certain types of cancers, non-insulin dependent diabetes mellitus, gallbladder disease, dyslipidemia, osteoarthritis, gout, and pulmonary disease including sleep apnea. In addition, the obese suffers from social bias, injustice and discrimination. In conclusion; obesity is associated with many health problems as well as higher mortality rates (WHO report, 2010).

Likewise, Reilly and Dietz et al., (1998) added children who are overweight or obese face these health risks such as hyperlipidemia, hypertension, and abnormal glucose tolerance, which occur more frequently in obese youth than normal-weight youth.

Other health conditions associated with childhood obesity include asthma, increased mortality risk, and a doubling of the risk of developing type-1 diabetes, these are all chronic conditions, so if they set in at a younger age, it leaves more time for the individual's health to deteriorate. Discriminatory, overweight may prevent a child from playing normally with his friends, using the clothes that he likes, or having to endure the ridicule of other children (Aznar et al., 2010).

Obesity can cause complications in many organ systems such as orthopedic complication, including slipped capital femoral epiphysis, which may manifest as hip or knee pain, limit hip range of motion, and Blount's disease (tibia vara) Richards, Wilcox and Dietz et al., (1993). Therefore, health care costs have raised along with the increase of obesity related health problems. Research shows that health care utilization and costs increase as body mass increases (Heirhoff et al., 1997).

Moreover, according to a national study of health-related costs attributed to overweight and obesity, it accounted that combined overweight and obesity-related medical expenses to 9.1 % of total U.S. medical expenditures Finkelstein et al., (2003) and recent data indicated that overweight and obesity cost the US health care system over 100 billion dollars annually. (Overweight and obesity for professional: economic consequences, 2009).

Chapter III

Methodology

This chapter covers the steps involved in the research methodology, study setting and sampling technique, data collection and analysis procedures, ethical consideration, and limitation of the study.

3.1. Study design

A cross-sectional study was conducted to describe and identify the overweight and obesity trends among male school children aged 9-11 years in Nablus UNRWA schools. Baring et al., (1987) cross-sectional studies defined as examining the relationship between disease (or other health related state) and other variables of interest as they exist in a defined population at a single point in time or over a short period of time (e.g. Calendar year).

3.2. Study population and sampling technique

The targeted population was 1260 students enrolled in 4, 5 and 6th grades aged (9-11) studying in 7 UNRWA male schools in Nablus city (as indicated in table 1). UNRWA school only recruits refugee children from 1st to 9th grade.

Table (1): Total Number in UNRWA male schools in Nablus city for the age group of 9-11 years.

Name of School	9 years 4 th grade	10 years 5 th grade	11 years 6 th grade	Total students per school
Nablus Preparatory School for Boys.	34	30	44	108
Balata Preparatory School for Boys.	.....	64	146	210
Balata Elementary School for Boys.	140	99	.....	239
Askar Community School for Boys.	72	57	55	184
Askar Elementary School for Boys.	133	.....	.....	133
Askar Preparatory School for Boys.	.....	122	122	244
Number One E. School for Boys.	33	56	53	142
	412	428	420	Total students in UNRWA male schools in Nablus city for the age group of 9-11 years 1260 student.

3.2.1. Stratified systematic random sampling

Using stratified sampling, the population (7 male UNRWA schools in Nablus city, 1260 students) is divided into homogeneous, mutually exclusive groups called strata (schools), and then independent samples are selected from each stratum (4th, 5th, 6th grade from each school). Stratified random sampling technique was used to choose a sample size from each stratum (grade) by this formula;

$$\text{Sample size for each layer} = \frac{\text{Size of whole sample}}{\text{Size of population}} \times \text{size of layer}$$

For example the number of students in Nablus Preparatory School for Boys in 5th grade is 30 students, the researcher calculate sample size for these grade $(295/1260) \times 30 = 7$ students. (as indicated in table 2).

Using a systematic random sampling method to represent all male children in 4th, 5th, 6th grade. A systematic sampling method sometimes called interval sampling, and that means there is a gap, or interval, between each selected unit in the sample, this sampling method is as good as the random sampling method. (Surveys and sampling, 2009).the researcher followed these steps:

1. Determine the sampling interval (**K**) by dividing the number of students in the population by the desired sample size. Select a sample of 295 from a population of 1260, the sampling interval of $1260 \div 295 =$ approximately 4. Therefore, **K** = 4, then select one student out of every four students to end up with a total of 295 students in the sample.
2. Select a number between one and **K** at random. This number is called the random start and would be the first number included in the sample, and then select a number between 1 and 4 from a table of random numbers. The researcher choose 4, the fourth student on the list of students name from each grade would be the first unit included in the sample.
3. For example the number of students in Nablus Preparatory School for Boys in 5th grade is 30 students, Lists of names of students and their numbers were given to the researcher by the school, whereas the researcher has nothing to do in the process of arranging the students in the lists,the researcher calculate sample size for these grade $30 \times (295/1260) = 7$, then select every **K**th (in this study, every fourth) student after that first number

consist the following students to make up a sample of 7; 4 (the random start), 8, 12, 16, 20, 24, 28.

Table (2): representing population from which the sample was randomly selected.

Name of School	9 years 4th grade	10 years 5th grade	11 years 6th grade	Total representative students per school
Nablus Preparatory School for Boys.	8	7	11	26
Balata Preparatory School for Boys.	.....	15	34	49
Balata Elementary School for Boys.	33	23	.....	56
Askar Community School for Boys.	17	13	13	43
Askar Elementary School for Boys.	31	.....	.....	31
Askar Preparatory School for Boys.	.....	28	29	57
Number One E. School for Boys.	8	13	12	33
	97	99	99	Total representative sample students in UNRWA male schools in Nablus for the age group of 9-11 years 295 students.

3.3. The Study Instruments

The research instruments consisted of BMI measurement and closed ended questionnaire.

3.3.1. The BMI Calculation

CDC, (2005) reported that BMI is used for children and teens, but it is specified according to age and sex. It is often referred to as BMI for age. After calculating BMI for children and teens, according to their height and weight, the number of BMI is plotted on the growth charts for girls or boys based on their ages to acquire a percentile ranking. Percentile ranking is an indicator for evaluating the size and growth patterns of children. In this study, the researcher was utilized (CDC, 2009) growth chart to describe BMI to define obesity status in children, the normal weight range was between 5% - >85%. BMI >85 percentiles were considered as overweight, BMI > 95 percentiles was considered as obese, whereas underweight below 5%.

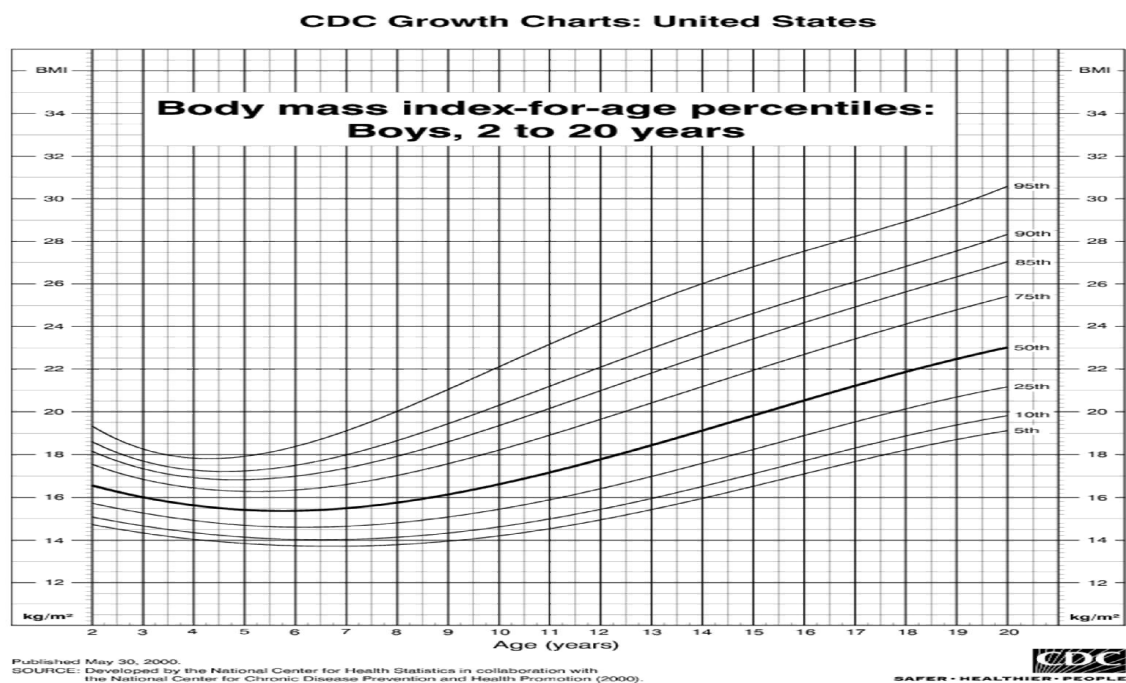


Figure 1: Growth chart among boys 2-20 years old (centers for disease control and Prevention, 2009)

3.3.1.1. Weight measurement

The targeted students were weighed on platform scales on uncarpeted floor. Equipment was checked regularly to make sure they are accurate measurements. Scale calibrated on a routine basis. Calibration involves putting known weight on the scale to check accuracy.

The procedure is to ask the students to remove shoes and bulky clothing. Placing the sliding beam weights in the zero position before the student steps on the scale. Then ask the students to stand still with both feet in the center of the platform, record the measurement in kilograms, and return the sliding beam to zero position... electronic scale (Tefal sense, France).

3.3.1.2. Height measurement

A standing height board on Stadio-meter will be used as the device for measuring the height that typically consists of a vertical ruler with a sliding horizontal rod or paddle which is adjusted to rest on the top of the head, put a scale on uncarpeted floors.

The procedure is to ask the student to remove shoes, hat, and bulky clothes. Direct the student to stand erect with shoulders level, hands at sides, heels together and weight distributed on both feet, students' feet are flat on the floor or on foot pieces, with heels comfortably together and touching the base of the ventricle board. There are four contact points between the body and Stadio meter: head, upper back, buttocks, and heels, ask the student to look straight ahead, ask the student to breathe in his position, record the height to the nearest 1 centimeter, height was measured using a portable measuring device (Seca GMTH&Co, 22089 Hamburg, Germany).

3.4. The Questionnaire

After reviewing literature related to the subject matter, the researcher chose a questionnaire (HBSC) as an international tool for Comparison of overweight and obesity prevalence in school-aged youth and their relationships with physical activity and dietary patterns.

The questionnaire is translated into Arabic by (Alpha) an international organization for research and informatics. Some items were deleted and others were modified, particularly for items related to the families' social and economic situations and after obtaining its validity and reliability to meet the study objectives, the tool for the study came to surface, including the following sections:

The first section: personal information, including numbers of independent variables which consist of school, place of residence, father's educational level, mother's educational level, father's job, mother's job, student's class in school, family income and content of family members.

The second section: dietary habits that included items on types of food, frequency and eat or drink method.

The third section: physical activities Sports and exercise at inside of school and at outside of school, Physical activities in leisure time – Watching TV time, internet, computer games (View the appendix A for the questionnaire).

3.4.1. Questionnaire validity

Aiming to benefit from their experiences and suggestions about the accommodation of the study with the study goals and the validity of the tool, the researcher presented the questionnaire to a group of 4 arbitrators (appendix B) who are experts and specialists in nursing and research in many Palestinian universities. Depending on their insights

and views the researcher added some variables deleted, and reformulated some others until he came up with the approved final draft of the questionnaire.

3.4.2. To measure reliability

The researcher used an experimental sample which included 10 students from each target class (4,5,6) were randomly selected, making 30 questionnaires as a pilot to measure the instrument reliability.

Participants were asked if they had any difficulty with understanding and answering the questionnaires, and if they had any recommendations regarding how the questionnaire could be improved.

So to say, two weeks later the researcher applied the tool on the study sample for the second time then calculated Pearson correlation coefficient, which was 86% uses as a suitable value for the research purposes.

3.4.3. Ethical Considerations

Approval of nursing higher studies committee and AL-Quds university higher studies deanship was obtained (Appendix C) prior to approaching UNRWA education department, the UNRWA education department granted the permission to the researcher to conduct the study in Nablus UNRWA schools, also following the acceptance of the school's principals beside that the targeted children were given an informed consent to be signed by their families, luckily all families have agreed to that. A consent form (Appendix D) explained study rationale, and the information's only used for scientific purposes without pointing to any participants' names.

3.4.4. Data collection procedure

Permission was obtained from the UNRWA education department. Then the researcher visited the targeted schools to inform them about the survey and permission was obtained from the principals of schools. All the classes from the fourth to the sixth grade in each selected school were included in the study. Systematic randomization was used, the sample selected students from lists of students' names, selected students from each list and give them informed consent.

After having got the informed consent, the researcher measured the height, and weight for each targeted student in the examination room (counselor room) of the school. The study investigator with the assistant (school counselor) did all measurements and registration process was implemented in the students' during art or sport classes, and then the students were filled asked to take the questionnaire to their homes to be by one of their parents or guardians and to bring it back the next day. All filled questionnaires were collected on the next day. Finally, the researcher revised all the questionnaires, then calculates the BMI and percentile for each one of them according to CDC (2009) growth chart. The measurements were done on a calculation criteria available at (http://www.blubberbuster.com/height_weight.html).

3.4.5. Data analysis procedure

The total questionnaire distributed and returned back to the researcher are 295, 17 questionnaires were excluded because they are not completely filled. Coded data were computerized, and analyzed using SPSS (version 21). Descriptive statistics were presented in frequency, means, standard deviation for sociodemographic data Inferential statistics using chi square test used to compare observed data with data would expect to obtain according to a specific hypothesis and p-value (Significance level of 0.05) is used in statistical hypothesis testing (null hypothesis significance testing).

3.5. Limitations of study

1. This study included only male children enrolled in UNRWA schools in Nablus city and can be generalized only for this population.
2. This study is based on a questionnaire filled out by students with the help of their parents or guardian.

Chapter IV

Data analysis and findings

Introduction

This chapter will present the findings of the data in the form of tables; the results are presented in these levels:

1. socio-demographic information and its association with prevalence of overweight and obesity.
2. Prevalence of overweight and obesity among targeted children.
3. Eating habits and its association with prevalence of overweight and obesity.
4. Physical activity and its association with prevalence of overweight and obesity
5. The relationship between socio-demographic and eating habits among targeted children.

There were 295 students aged 9-11 years, grades 4-6 were included in this study. Student's anthropometry were measured (BMI) and questionnaires were distributed on September 2014 in UNRWA male schools in Nablus city, Students answered on the questionnaire with by assistant their parents or guardians.

Descriptive and inferential statistics were used to analyze the data; descriptive statistics (frequency, percentage, mean, median, and standard deviation) were used to describe the distribution of variables such as: socio-demographic factors, foods concerned with eating habit, characteristic of daily meals, physical activities.

In addition, inferential statistics were used for describing socio-demographic factors, quantity and quality variables were also used. Variables such as; age, parent's education, parent's occupation, family income, siblings' number. The chi – square test and Significance level of 0.05 were used to determine the association between influencing factors (socio-demographic, eating habits, physical activity) and overweight /obesity.

4.1 Analysis of socio-demographic data

4.1.1. The socio-demographic characteristics of targeted children

Table (1.1); there were 278 students with an age ranged between 9-11 years participated in the study; 18.3 % were the 9 years old, 37.1 % were 10 years and 44.6% were 11years old.

The schools participating number of children indicated Asker elementary school was involved by 23.7%; the largest proportion of the study targeted children followed by Balata preparatory school 17.3%.

Table (1.1) frequency and percent for Demographic characteristics among targeted children (N=278).

Variable	Variables	Frequency	Percent
Child age	9yrs	51	18.3%
	10yrs	103	37.1%
	11yrs	124	44.6%
School	Nablus preparatory school	40	14.4%
	Asker elementary school	66	23.7%
	Balata elementary school	41	14.7%
	Asker community school	33	11.9%
	Balata preparatory school	48	17.3%
	Asker preparatory school	18	6.5%
	Elementary school no.1	32	11.5%

4.1.2. Demographic characteristics of children's family (N=278)

Table (1.2) for children families' residency indicates that, the largest proportion of students 84.9% were residing in Nablus camps and the rest was living in a village or the city of Nablus.

Father's education, 48.6 % of the students' fathers have studied secondary level, 12.2% have studied university level and the rest of the students' fathers have studied primary or elementary level.

Mother's education, 48.6% of the students' mothers have studied secondary level, 17.6% have studied university level, and the rest of the students' mothers have studied primary or elementary level.

Table (1. 2) Frequency and percent for socioeconomic characteristics among targeted children (N=278).

Variable	Variables	Frequency	Percent
Residency	Village	6	2.2%
	City	36	12.9%
	Camp	236	84.9%
Father's Education	Primary	39	14.0%
	Elementary	70	25.2%
	Secondary	135	48.6%
	University	34	12.2%
Mother's Education	Primary	30	10.8%
	Elementary	64	23.0%
	Secondary	135	48.6%
	University	49	17.6%

4.1.3. Demographic characteristics of children's family (N=278)

Table (1.3) indicates that, the majority of targeted children's fathers, 54.3%, were in full-time work, and 15.9% did not work, and 29.9% were in part time work. Regarding mother's work; (87.4%) of the mothers was not working, 8.6% were in full-time work, and 4.0% were in part time work.

For a number of children, siblings; nearly two-thirds of the students have 4-7 siblings followed by 18% have less than 3 siblings. For family income; 31.3% of the students' family monthly income was less than 1000 shekels, 20.5% have more than or equal to 2000 shekels and the rest were having an income that ranged between 1000 - 1999 shekels.

Table (1.3) Frequency and percent for socioeconomic characteristics among targeted children (N=278).

Variable	Variables	Frequency	Percent
Father's work	Full-time	151	54.3%
	Part time	83	29.9%
	None	44	15.9%
Mother's work	Full-time	24	8.6%
	Part time	11	4.0%
	None	243	87.4%
Siblings	3or less	50	18%
	4-7	185	66.5%
	>7	43	15.5%
Income	<1000	87	31.3%
	1000-1499	66	23.7%
	1500-1999	68	24.5%
	2000 or more	57	20.5%

4.1.4. Prevalence of overweight and obesity among participants according to their age.

According to the growth chart for boys 2-20 years old (CDC and Prevention, 2009) the normal BMI range for boys aged 9-11 years(14 - 18.6 kg/m²)was between 5th - below 85th percentiles, BMI >85th percentiles were considered as overweight, BMI > 95th percentiles was considered as obese, whereas underweight below the 5th percentile.

Table (1.4) Shows that the prevalence of overweight and obesity differ by age groups, there appeared to be a trend for the proportion of overweight and obesity among students to increase with escalating age.

Table (1.4) Prevalence of overweight and obesity among respondents by age (N=278).

	UW Number (%)	NW Number (%)	OW Number (%)	OBESE Number (%)	Total Number (%)
9 years	16 (30.8%)	22 (17.3%)	10 (15.6%)	3 (8.6%)	51 (18.3%)
10 years	15 (28.8%)	54 (42.5%)	22 (34.4%)	12 (34.3%)	103 (37.1%)
11 years	21 (40.4%)	51(40.2%)	32 (50.0%)	20 (57.1%)	124 (44.6%)
Total	52(100%)	127(100%)	64(100%)	35(100%)	278(100%)

*UW: underweight * NW: normal weight* OW: overweight

4.1.5. Prevalence of overweight and obesity among participants according to residency

Table (1.5) shows that the largest percentages of participating students in this study were from camps, this explains why greater percentage of overweight and obesity were residents in the camps.

Table (1.5) Prevalence of overweight and obesity among respondents by place of residency.

	UW Number (%)	NW Number (%)	OW Number (%)	OBESE Number (%)	Total
Village	0 (0.0%)	4 (3.1%)	0 (0.0%)	2 (5.7%)	6(2.2%)
City	13 (25.0%)	13 (10.2%)	7 (10.9%)	3 (8.6%)	36 (12.9%)
Camp	39 (75.0%)	110 (86.6%)	57 (89.1%)	30 (85.7%)	236 (84.9%)
Total	52(100%)	127(100%)	64(100%)	35(100%)	278(100%)

UW: underweight * NW: normal weight* OW: overweight

4.1.6. Prevalence of overweight and obesity among participants according to their father’s educational level.

Table (1.6) indicates that, students' fathers with secondary level education have the highest prevalence of overweight and obesity among targeted children and at the same time have the highest prevalence of underweight. Also students’ fathers with elementary level education have the lowest prevalence of overweight and obesity, students’ fathers with a preparatory level has the lowest prevalence of overweight.

Table (1. 6) Prevalence of overweight and obesity among respondents by father’s educational level.

	UW Number (%)	NW Number (%)	OW Number (%)	OBESE Number (%)	Total
Elementary	6 (11.5%)	17 (13.4%)	7 (10.9%)	9 (25.7%)	39(14.0%)
Preparatory	14 (26.9%)	32 (25.2%)	19 (29.7%)	5 (14.3%)	70 (25.2%)
Secondary	27 (51.9%)	60 (47.2%)	32 (50.0%)	16 (45.7%)	135 (48.6%)
University	5 (9.6%)	18 (14.2%)	6 (9.4%)	5 (14.3%)	34 (12.2%)
Total	52(100%)	127(100%)	64(100%)	35(100%)	278(100%)

*UW: underweight * NW: normal weight* OW: overweight

4.1.7. Prevalence of overweight and obesity among participants according to their mother’s educational level.

Table (1.7) indicates that, students who studied their mothers' secondary level are the highest prevalence of overweight and obesity, in the same time the highest prevalence of underweight among students who studied their mothers 'secondary level also. Students who studied their mothers' University level are the lowest prevalence of obesity, while students who studied their mothers' elementary level are the lowest prevalence of overweight.

Table (1.7) Prevalence of overweight and obesity among respondents by mother's educational level (N=278).

	UW Number (%)	NW Number (%)	OW Number (%)	OBESE Number (%)	Total
Elementary	8 (15.4%)	15 (11.8%)	2 (3.1%)	5 (14.3%)	30(10.8%)
Preparatory	7 (13.5%)	28 (22.0%)	24 (37.5%)	5 (14.3%)	64(23.0%)
Secondary	26 (50.0%)	62 (48.8%)	27 (42.2%)	20 (57.1%)	135 (48.6%)
University	11 (21.2%)	22 (17.3%)	11 (17.2%)	5 (14.3%)	49 (17.6%)
Total	52(100%)	127(100%)	64(100%)	35(100%)	278(100%)

*UW: underweight * NW: normal weight* OW: overweight

4.1.8. Prevalence of overweight and obesity among participants according to their father work

Table (1.8) shows that, students' fathers who work as a full time have the highest prevalence of overweight and obesity among targeted children; While the students whose fathers do not work have the lowest prevalence of overweight and obesity among targeted children.

Table (1.8) Prevalence of overweight and obesity among respondents by father's work (N=278).

	UW Number (%)	NW Number (%)	OW Number (%)	OBESE Number (%)	Total
fulltime	27 (51.9%)	76 (59.8%)	36 (56.3%)	12 (34.3%)	151(54.3%)
part time	14 (26.9%)	37 (29.1%)	17 (26.6%)	16 (45.7%)	84(30.2%)
none	11 (21.2%)	14 (11.0%)	11 (14.2%)	7 (20.0%)	43(15.5%)
Total	52(100%)	127(100%)	64(100%)	35(100%)	278(100%)

*Underweight * NW: normal weight* OW: overweight

4.1.9. Prevalence of overweight and obesity among participants according to their mother's work

Table (1.9) shows that, the highest proportion of students whose mothers' do not work have the highest prevalence of overweight and obesity among targeted children; While the students whose mothers' work as a full time have the lowest prevalence of overweight and obesity among targeted children.

Table (1. 9) Prevalence of overweight and obesity among respondents by mother's work (N=278).

	UW Number (%)	NW Number (%)	OW Number (%)	OBESE Number (%)	Total
fulltime	7 (13.5%)	11 (8.7%)	4 (6.3%)	2 (5.7%)	24(8.6%)
part time	3 (5.8%)	4 (3.1%)	1 (1.6%)	3 (8.6%)	11(4.0%)
none	42 (80.8%)	112 (88.2%)	59 (92.2%)	30 (85.7%)	243(87.4%)
Total	52(100%)	127(100%)	64(100%)	35(100%)	278(100%)

Underweight * NW: normal weight* OW: overweight

4.1.9. Prevalence of overweight and obesity among participants according to their siblings

Table (1.10) shows that, the highest proportion of students who have 4-7 siblings have the highest prevalence of overweight and obesity among targeted children

Table (1.10) Prevalence of overweight and obesity among respondents by sibling's (N=278).

	UW Number (%)	NW Number (%)	OW Number (%)	OBESE Number (%)	Total
3 or less	9 (17.3%)	23(18.1%)	13 (20.3%)	5 (14.3%)	24(8.6%)
4-7	33 (63.5%)	87 (68.5%)	41 (64.1%)	24 (68.6%)	185(66.5%)
More than 7	10 (19.2%)	17 (13.4%)	10 (15.6%)	6 (17.1%)	43(15.5%)
Total	52(100%)	127(100%)	64(100%)	35(100%)	278(100%)

Underweight * NW: normal weight* OW: overweight

4.1.10. Prevalence of overweight and obesity among participants according to their family's income

Table (1.10) shows that, the highest proportion of students whose family income was less than 1000 NIS have the highest prevalence of overweight and obesity, while the students whose family's income was equal or more than 2000 NIS have the lowest prevalence of overweight and obesity.

Table (1. 10) Prevalence of overweight and obesity among respondents by family's income (N=278).

	UW Number (%)	NW Number (%)	OW Number (%)	OBESE Number (%)	Total
Less than 1000 NIS	17 (32.7%)	41 (32.3%)	18(28.1%)	12 (34.3%)	88(31.7%)
1000-1499 NIS	13 (25.0%)	28 (22.0%)	17 (26.6%)	8 (22.9%)	66(23.7%)
1500-1999 NIS	13 (25.0%)	30 (23.6%)	16 (25.0%)	9 (25.7%)	68 (24.5%)
2000 or more NIS	9 (17.3%)	28 (22.0%)	13 (20.3%)	6 (17.1%)	56 (20.1%)
Total	52(100%)	127(100%)	64(100%)	35(100%)	278(100%)

Underweight * NW: normal weight* OW: overweight

4.2. Anthropometric measurements

4.2.1 Mean and standard deviation of anthropometric measurements among targeted children

Table (2.1) explains that, the means and standard deviation of measurements for targeted children were as follows: weight: 36.1 ± 12.2 kg; height: 139.4 ± 10.4 cm BMI: 18.6 ± 5.6 kg/m and Percentile 55.2 ± 37 .

According to the growth chart for boys 2-20 years old (CDC and Prevention, 2009) the normal BMI range for boys aged 9-11 years ($14 - 18.6 \text{ kg/m}^2$) was between 5th - 85th percentiles, BMI $>85^{\text{th}}$ and below 95th percentiles were considered as overweight, BMI $> 95^{\text{th}}$ percentiles was considered as obese, whereas underweight below the 5th percentile.

Table (2.1) Mean and standard deviation of anthropometric measurements among the respondents (n=278)

	Mean	SD
Wt	36.1	12.2
Ht	139.4	10.4
BMI	18.6	5.6
Percentile	55.2	37

*Wt: weight * Ht: height * BMI: body mass index

4.2.2. Prevalence of overweight and obesity among children

Table (2.2) shows that, according to the growth chart among boys 2-20 years old (centers for disease control and Prevention, 2009) the prevalence of obesity in this study were 12.6% (35) students among 278 surveyed students). On the other hand the prevalence of overweight 23% (64 students among 278 surveyed students) whereas underweight students were 18.7% and the rest of the sample was at a normal weight (neither underweight nor overweight).

Table (2.2) Prevalence of overweight and obesity among the respondents (n=278)

Variables	Frequency	Percent
UW	52	18.7
NW	127	45.7
OW	64	23.0
OBESE	35	12.6
Total	278	100.0

*UW: underweight * NW: normal weight* OW: overweight

4.3. Eating habits

Main meal

4.3.1. Results related to the question No. 11 which provides for (Define meals that you usually eat?)

Table (3.1) reveals that, 2.5% only of students have breakfast, 20.7% have lunch, and 4.0% who eat dinner, and when comparing these results it was noticed that the highest percentage belongs to the students who eat Lunch mainly, while more than a third (36.4%) of the students eat three main meals (Breakfast, Lunch and Dinner).

Table (3.1) Frequency and percentage of children who eat meal usually

	Frequency	Percent
Breakfast	7	2.5%
Lunch	57	20.7%
Dinner	11	4.0%
Breakfast +Lunch	33	12.0%
Breakfast + Dinner	13	4.7%
Lunch+ Dinner	54	19.6%
Breakfast +Lunch+ Dinner	100	36.4%
Total	275	100.0%

4.3.2. Results related to the question No. 13 which provides for (Do you eat your main meals (Breakfast, Lunch, Dinner) with your family members around one table?)

Table (3.2) shows that, more than half of the students eat main meal everyday with their families, in contrast, to 38.1% of students who sometimes eat a main meal with their families and 2.5% of students never ate main meals with their families.

Table (3.2) Frequency and percentage of children who eat their main meal with their families.

	Frequency	Percent
Every day	165	59.4%
Sometimes	106	38.1%
Never	7	2.5%
Total	278	100.0%

Bread

4.3.3. Results related to the question No. 14 which provides for (How many times do you eat bread?)

Table (3.3) shows that, 39.4% of students eat bread twice daily, 32.5 % of students who eat bread three times daily, 5.1 % of students who eat bread once a day, 9.7 % eat bread four times, 2.5% eat bread five times and 4.4% eat bread six times per day.

Table (3.3) Frequency and percentage of children who eat Bread

	Bread							Total
	1 time/day	2/day	3/day	4/day	5/day	6/day	other	
UW	1 (1.9%)	22 (42.3%)	17 (32.7%)	5(9.6%)	2 (3.8%)	4 (7.7%)	1 (1.9%)	52 100.0%
NW	5(4.0%)	54 (42.9%)	38(30.2%)	12 (9.5%)	3 (2.4%)	4 (3.2%)	10 (7.9%)	126 100.0%
OW	5 (7.8%)	21 (32.8%)	24 (37.5%)	5 (7.8%)	2 (3.1%)	3 (4.7%)	4 (6.3%)	64 100.0%
OBESE	3 (8.6%)	12 (34.3%)	11 (31.4%)	5 (14.3%)	0 (0.0%)	1 (2.9%)	3 (8.6%)	35 100.0%
Total	14 (5.1%)	109 (39.4%)	90 (32.5%)	27 (9.7%)	7 (2.5%)	12 (4.4%)	18 (6.5%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

Dairy products

4.3.4. Results related to the question No. 15 which provides for (How many times do you eat dairy products?)

Table (3.4) reveals that, the highest prevalence of students eat dairy products once to twice daily, 37.1% from obese students eat dairy products one to three times weekly and 34.3 % from overweight students eat dairy products one to three times weekly also.

Table (3.4) Frequency and percentage of children who eat Dairy products

	Dairy						Total
	3->4/day	1-2/day	4-6/week	1-3/week	1-3/month	rare	
UW	3 (5.7%)	15 (28.8%)	5(9.6%)	15 (28.8%)	12 (23.1%)	2 (3.8%)	52 100.0%
NW	6(4.8%)	36(28.6%)	9 (7.1%)	44 (34.9%)	18 (14.3%)	13 (10.3%)	126 100.0%
OW	5 (7.8%)	14 (21.9%)	7 (10.9%)	22 (34.4%)	9 (14.1%)	7 (11%)	64 100.0%
OBESE	1 (2.9%)	12 (34.3%)	3 (8.6%)	13 (37.1%)	1 (2.9%)	5 (14.3%)	35 100.0%
Total	15 (5.4%)	77 (27.8%)	24(8.7%)	94 (33.9%)	40 (14.4%)	27(9.8%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

Legumes

4.3.5. Results related to the question No. 16 which provides for (How many times do you eat the following legumes?)

1. Lentils

Table (3.5) shows that, the highest prevalence of students eat lentils once to three times monthly, and 45.7% from obese students who eat lentils once to three times monthly.

Table (3.5) frequency and percentage of children who eat Lentils

	Lentils							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	2 (3.8%)	6 (11.5%)	4(7.7%)	5 (9.6%)	11 (21.2%)	22 (42.3%)	2 (3.8%)	52 100.0%
NW	5(4.0%)	9(7.1%)	2(1.6%)	21 (16.7%)	41 (32.5%)	33 (26.2%)	15 (11.9%)	126 100.0%
OW	3 (4.7%)	1 (1.6%)	2(3.1%)	15 (23.4%)	11 (17.2%)	24 (37.5%)	8 (12.5%)	64 100.0%
OBESE	1 (2.9%)	1 (2.9%)	2 (5.7%)	6 (17.1%)	5 (14.3%)	16 (45.7%)	4 (11.4%)	35 100.0%
Total	11 (3.9%)	17 (6.1%)	10(3.6%)	47 (17.0%)	68(24.5%)	95(34.3%)	29(10.5%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

2. Chickpeas

Table (3.6) shows that, 29.2 % of students who eat chickpeas two to three times weekly, and 10.5% of students who eat chickpeas three to more than four times daily, while 1.4% of students do not eat chickpeas.

Table (3.6) frequency and percentage of children who eat Chickpeas

	Chickpeas							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	5 (9.6%)	9 (17.3%)	3(5.8%)	9 (17.3%)	16 (30.8%)	10(19.2%)	0 (0.0%)	52 100.0%
NW	14(11.2%)	25(19.8%)	5(4.0%)	36 (28.6%)	26 (20.6%)	18 (14.3%)	2 (1.6%)	126 100.0%
OW	6 (9.4%)	10(15.6%)	4(6.3%)	23 (35.9%)	11 (17.2%)	8 (12.5%)	2(3.1%)	64 100.0%
OBESE	4 (11.4%)	5 (14.3%)	3 (8.6%)	13 (37.1%)	7 (20.0%)	3 (8.6%)	0 (0.0%)	35 100.0%
Total	29 (10.5%)	49 (17.7%)	15(5.4%)	81 (29.2%)	60(21.7%)	39(14.1%)	4(1.4%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

3. Beans

Table (3.7) shows that, the highest proportion of students who eat beans once to three times weekly, and 7.2% of students who eat beans three to more than four times daily, while 7.2% of students do not eat Beans.

Table (3.7) frequency and percentage of children who eat Beans

	Beans							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	4 (7.6%)	7 (13.5%)	5(9.6%)	7 (13.5%)	18 (34.6%)	10(19.2%)	1 (1.9%)	52 100.0%
NW	8(6.4%)	22(17.5%)	3(2.4%)	34 (27.0%)	26 (20.6%)	19 (15.1%)	14 (11.1%)	126 100.0%
OW	5 (7.8%)	8(12.5%)	3(4.7%)	16 (25.0%)	16 (25.0%)	12 (18.8%)	4(6.3%)	64 100.0%
OBESE	3 (8.6%)	4 (11.4%)	2 (5.7%)	11 (31.4%)	9 (25.7%)	5 (14.3%)	1 (2.9%)	35 100.0%
Total	20 (7.2%)	41(14.8%)	13(4.7%)	68 (24.5%)	69(24.9%)	46(16.6%)	20(7.2%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

4. Peas

Table (3.8) shows that, the highest proportion of students who eat peas once to three times monthly, and 19.5% of students who eat peas once a week, while 18.4% of students do not eat peas.

Table (3.8) frequency and percentage of children who eat Peas

	Peas							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	4 (7.7%)	4 (7.7%)	3 (5.8%)	2(3.8%)	11 (21.2%)	21(40.4%)	7 (13.5%)	52 100.0%
NW	3(2.4%)	7(5.6%)	3(2.4%)	14 (11.1%)	26 (20.6%)	49 (38.9%)	24 (19.0%)	126 100.0%
OW	2 (3.2%)	2(3.1%)	1(1.6%)	15 (23.4%)	9 (14.1%)	22 (34.4%)	13(20.3%)	64 100.0%
OBESE	0 (0.0%)	2 (5.7%)	0 (0.0%)	5 (14.3%)	8 (22.9%)	13 (37.1%)	7 (20.0%)	35 100.0%
Total	9 (3.3%)	15(5.4%)	7(2.5%)	36 (13.0%)	54(19.5%)	105(37.9%)	51(18.4%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

Meat and fish

4.3.9. Results related to the question No. 17 which provides for (How many times do you eat of the following meat and fish?)

1. Chicken

Table (3.9) shows that, the highest prevalence of students eat chicken once weekly, 34.6% from underweight students eat chicken once a week, while 34.3% from obese students eat chicken two to three times weekly and 34.3% from overweight students eat chicken two to three times weekly.

Table (3.9) frequency and percentage of children who eat Chicken

	Chicken							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	3 (5.7%)	3 (5.8%)	2 (3.8%)	11(21.2%)	18 (34.6%)	15(28.8%)	0 (0.0%)	52 100.0%
NW	0 (0.0%)	7(5.6%)	4(3.2%)	32 (25.4%)	46(36.5%)	28 (22.2%)	9 (7.1%)	126 100.0%
OW	4 (6.3%)	4(6.3%)	1(1.6%)	22 (34.4%)	18 (28.1%)	11 (17.2%)	4(6.3%)	64 100.0%
OBESE	1 (2.9%)	3 (8.6%)	1 (2.9%)	12 (34.3%)	11 (31.4%)	6 (17.1%)	1 (2.9%)	35 100.0%
Total	8 (2.9%)	17(6.1%)	8(2.9%)	77 (27.8%)	93(33.6%)	60(21.7%)	14(5.1%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

2. Turkey meat

Table (3.10) shows that, the highest prevalence of students eat turkey meat once to three times weekly, 40% from obese students eat turkey meat once to three times weekly, while 37.5% from overweight students do not eat turkey meat.

Table (3.10) frequency and percentage of children who eat Turkey meat

	Turkey meat							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	2 (3.8%)	6 (11.5%)	1 (1.9%)	5(9.6%)	11(21.2%)	15(28.8%)	12 (23.1%)	52 100.0%
NW	0 (0.0%)	4(3.2%)	1(0.8%)	17 (13.5%)	29(23.0%)	40 (31.7%)	35 (27.8%)	126 100.0%
OW	0 (0.0%)	3(4.7%)	2(3.1%)	5(7.8%)	14 (21.9%)	16 (25.0%)	24(37.5%)	64 100.0%
OBESE	0 (0.0%)	2 (5.7%)	1 (2.9%)	5(14.3%)	5 (14.3%)	14(40.0%)	8 (22.9%)	35 100.0%
Total	2(0.8%)	15(5.4%)	5(1.8%)	32 (11.6%)	59(21.3%)	85(30.7%)	79(28.5%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

3. Shawarma

Table (3.11) shows that, the highest prevalence of students eat shawarma once to three times monthly, 40% from obese students and 37.5% from overweight students eat shawarma once to three times monthly, while 38.5% from underweight students eat shawarma once to three times monthly.

Table (3.11) frequency and percentage of children who eat Shawarma

	Shawarma							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	2 (3.8%)	3	1 (1.9%)	3(5.8%)	6(11.5%)	20(38.5%)	17 (32.7%)	52 100.0%
NW	3 (2.4%)	(11.5%)	2(1.6%)	6 (12.7%)	24(19.0%)	38 (30.2%)	43 (34.1%)	126 100.0%
OW	1 (1.6%)	0 (0.0%)	1 (1.6%)	5(7.8%)	8 (12.5%)	24 (37.5%)	24(37.5%)	64 100.0%
OBESE	0 (0.0%)	1 (1.6%)	2 (5.7%)	3(8.6%)	3 (8.6%)	14(40.0%)	12 (34.3%)	35 100.0%
Total	6(2.1%)	1(2.9%) 5(1.8%)	6(2.2%)	27 (9.7%)	41(14.8%)	96(34.7%)	96(34.7%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

4. Hamburgers

Table (3.12) shows that, the highest prevalence of students do not eat hamburgers, 60.9% from overweight students and 54.3% from obese students are do not eat hamburgers.

Table (3.12) frequency and percentage of children who eat Hamburgers

	Hamburgers							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	1 (1.9%)	2 (3.8%)	1 (1.9%)	3(5.8%)	7(13.5%)	16(30.8%)	22 (42.3%)	52 100.0%
NW	1 (0.8%)	1 (0.8%)	1 (0.8%)	12 (9.5%)	20(15.9%)	26 (20.6%)	65 (51.6%)	126 100.0%
OW	0 (0.0%)	1 (1.6%)	1 (1.6%)	6(9.4%)	5 (7.8%)	12 (18.8%)	39(60.9%)	64 100.0%
OBESE	0 (0.0%)	1(2.9%)	0 (0.0%)	3(8.6%)	4 (11.4%)	8(22.9%)	19 (54.3%)	35 100.0%
Total	2(0.8%)	5(1.8%)	3(1.1%)	24 (8.7%)	36(13.0%)	62(22.4%)	145(52.4%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

5. Fresh Fish

Table (3.13) shows that, the highest prevalence of students eat fresh fish once to three times monthly, 42.9% from obese students and 37.5% from overweight students eat fresh fish once to three times monthly.

Table (3.13) frequency and percentage of children who eat Fresh Fish

	Fresh Fish							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	3(5.7%)	3 (5.8%)	1 (1.9%)	3(5.8%)	12(23.1%)	26(50.0%)	4 (7.7%)	52 100.0%
NW	0 (0.0%)	5 (4.0%)	2 (1.6%)	12 (9.5%)	29(23.0%)	37 (29.4%)	41 (32.5%)	126 100.0%
OW	0 (0.0%)	1 (1.6%)	1 (1.6%)	5(7.8%)	12 (18.8%)	24 (37.5%)	21(32.8%)	64 100.0%
OBESE	0 (0.0%)	1(2.9%)	0 (0.0%)	4(11.4%)	10 (28.6%)	15(42.9%)	5 (14.3%)	35 100.0%
Total	3(1.2%)	10(3.6%)	4(1.4%)	24 (8.7%)	63(22.7%)	102(36.8%)	71(25.6%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

6. Canned Fish

Table (3.14) shows that, the highest prevalence of students eat canned fish once to three times monthly, 42.9% from obese students and 37.5% from overweight students eat canned fish once to three times monthly.

Table (3.14) frequency and percentage of children who eat Canned Fish

	Canned Fish							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	3(5.7%)	2 (3.8%)	2 (3.8%)	4(7.7%)	8(15.4%)	24(46.2%)	9 (17.3%)	52 100.0%
NW	1 (0.8%)	1 (0.8%)	2 (1.6%)	13 (10.3%)	26(20.6%)	43 (34.1%)	40 (31.7%)	126 100.0%
OW	0 (0.0%)	1 (1.6%)	1 (1.6%)	5(7.8%)	7 (10.9%)	24 (37.5%)	26(40.6%)	64 100.0%
OBESE	0 (0.0%)	1(2.9%)	1 (2.9%)	4(11.4%)	5 (14.3%)	15(42.9%)	9 (25.7%)	35 100.0%
Total	4(1.5%)	5(1.8%)	6(2.2%)	26 (9.4%)	46(16.6%)	106(38.3%)	84(30.3%)	277 100.0%

7. Veal Lamb

Table (3.15) shows that, the highest prevalence of students eat veal lamb once a week, 31.4% from obese students and 32.8% from overweight students eat veal lamb once to three times monthly.

Table (3.15) frequency and percentage of children who eat Veal Lamb

	Veal Lamb							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	3(5.7%)	4 (7.7%)	1 (1.9%)	6 (5.8%)	12(23.1%)	20 (38.5%)	6 (11.5%)	52 100.0%
NW	1 (0.8%)	6 (4.8%)	6 (4.8%)	24 (9.5%)	33 (26.2%)	32 (25.4%)	24(19.0%)	126 100.0%
OW	0 (0.0%)	3 (4.7%)	2 (3.1%)	13(7.8%)	16 (25.0%)	21(32.8%)	9(14.1%)	64 100.0%
OBESE	0 (0.0%)	3(8.6%)	1 (2.9%)	10(11.4%)	4(11.4%)	11 (31.4%)	6(17.1%)	35 100.0%
Total	4(1.5%)	16(5.8%)	10(3.6%)	53 (19.1%)	65(32.5%)	84(30.3%)	45(16.2%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

Fruits

4.3.16. Results related to the question No. 18 which provides for (How many times do you eat Fruits?)

Table (3.16) shows that, the highest prevalence of students eat fruits once to two times per day, 31.4% from obese students eat fruits once to tow times per day,while 32.8% from overweight students eat fruits two to three times weekly.

Table (3.16) frequency and percentage of children who eat Fruits

	Fruits							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	6(11.5%)	9 (17.3%)	1 (1.9%)	9 (17.3%)	9 (17.3%)	18 (34.6%)	0 (0.0%)	52 100.0%
NW	13 (10.3%)	31 (24.6%)	9 (7.1%)	24 (19.0%)	19 (15.1%)	21 (16.7%)	9(7.1%)	126 100.0%
OW	5 (7.9%)	14 (21.9%)	4 (6.3%)	21(32.8%)	8 (12.5%)	9(14.1%)	3(4.7%)	64 100.0%
OBESE	4 (11.4%)	11(31.4%)	3 (8.6%)	5(14.3%)	6(17.1%)	2 (5.7%)	4(11.4%)	35 100.0%
Total	28(10.1%)	65(23.5%)	17(6.1%)	59 (21.3%)	42(15.2%)	50(18.1%)	16(5.8%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

Vegetables

4.3.8. Results related to question No. 19 which provides for (How many times do you eat the following vegetables?)

1. Tomato fresh or in salad

Table (3.17) shows that, the highest prevalence of students eat tomato once to two times per day, 37.1% from obese students and 46.9% from overweight students eat tomato once to two times per day.

Table (3.17) frequency and percentage of children who eat Tomato

	Tomato							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	4(7.7%)	19 (36.5%)	7(13.5%)	11 (21.2%)	6 (11.5%)	5 (9.6%)	0 (0.0%)	52 100.0%
NW	15 (11.9%)	52 (41.3%)	12(9.5%)	24 (19.0%)	12 (9.5%)	7 (5.6%)	4(3.2%)	126 100.0%
OW	12 (18.7%)	30 (46.9%)	3 (4.7%)	11(17.2%)	3 (4.7%)	1(1.6%)	4(6.3%)	64 100.0%
OBESE	4 (11.4%)	13(37.1%)	3 (8.6%)	6(17.1%)	5(14.3%)	2(5.7%)	2(5.7%)	35 100.0%
Total	35(12.6%)	114(41.2%)	25(9.0%)	52 (18.8%)	26(9.4%)	15(5.4%)	10(3.6%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

2. Cucumber fresh or in salad

Table (3.18) shows that, the highest prevalence of students eat cucumber once to two times per day, 28.6% from obese students and 40.6% from overweight students eat cucumber once to two times per day.

Table (3.18) frequency and percentage of children who eat Cucumber

	Cucumber							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	8(15.4%)	17 (32.7%)	6(11.5%)	10 (19.2%)	5 (9.6%)	6 (11.5%)	0 (0.0%)	52 100.0%
NW	14 (11.1%)	49 (38.9%)	14(11.1%)	27 (21.4%)	15(11.9%)	6 (4.8%)	1(0.8%)	126 100.0%
OW	15 (23.5%)	26 (40.6%)	3 (4.7%)	14(21.9%)	2 (3.1%)	1(1.6%)	3(4.7%)	64 100.0%
OBESE	5 (14.3%)	10(28.6%)	3 (8.6%)	8(22.9%)	5(14.3%)	2(5.7%)	2(5.7%)	35 100.0%
Total	42(15.2%)	102(36.8%)	26(9.4%)	59 (21.3%)	27(9.7%)	15(5.4%)	6(2.2%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

3. Other fresh vegetables Lettuce, carrot, bell peppers... fresh or in salad

Table (3.19) shows that, the highest prevalence of students eat fresh Vegetables Lettuce, Carrot, Bell peppers... two to three times weekly, 25.7% from obese students eat fresh Vegetables Lettuce, Carrot, Bell peppers... two to three times weekly and 20.3% from overweight students eat fresh Vegetables Lettuce, Carrot, Bell peppers... once a week.

Table (3.19) frequency and percentage of children who eat fresh Vegetables Lettuce, Carrot, Bell peppers...

	Fresh Vegetables Lettuce, Carrot, Bell peppers...							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	0 (0.0%)	12 (23.1%)	4(7.7%)	9(17.3%)	12(23.1%)	14(26.9%)	1 (1.9%)	52 100.0%
NW	6 (4.8%)	20(15.9%)	11(8.7%)	36(28.6%)	23(18.3%)	18 (14.3%)	12 (9.5%)	126 100.0%
OW	8 (12.6%)	12(18.8%)	1(1.6%)	12(18.8%)	13 (20.3%)	9 (14.1%)	9(14.1%)	64 100.0%
OBESE	3 (8.6%)	2 (5.7%)	3 (8.6%)	9(25.7%)	7 (20.0%)	3(8.6%)	8 (22.9%)	35 100.0%
Total	17(6.2%)	46(16.6%)	19(6.9%)	66 (23.8%)	55(19.9%)	44(15.9%)	30(10.8%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

Cooked vegetables

4.3.10. Results related to the question No. 20 which provides for (How many times do you eat cooked vegetables?)

1. **stew, Mahashi, Maqluba, Ozzy, Vegetables in the tray, vegetable fried except potatoes**

Table (3.20) shows that, the highest prevalence of students eat cooked Vegetables (such as Stew, Mahashi, Maqluba, Ozzy, Vegetables in the tray, Vegetable fried except Potatoes two to three times weekly, 20.0% from obese students and 31.3% from overweight students eat cooked Vegetables (such as Stew, Mahashi, Maqluba, Ozzy, Vegetables in the tray, vegetable fried except Potatoes two to three times weekly.

Table (3.20) frequency and percentage of children who eat cooked Vegetables (such as Stew, Mahashi.....

	Stew, Mahashi, Maqluba, Ozzy, Vegetables in the tray, Vegetable fried except Potatoes							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	4 (7.6%)	5 (9.6%)	2(3.8%)	15(28.8%)	15(28.8%)	11(26.9%)	0 (0.0%)	52 100.0%
NW	6 (6.4%)	16(12.7%)	11(8.7%)	28(22.2%)	36(28.6%)	18 (14.3%)	9 (7.1%)	126 100.0%
OW	8 (7.8%)	12(18.8%)	1(1.6%)	20(31.3%)	14 (21.9%)	9 (14.1%)	3(4.7%)	64 100.0%
OBESE	3 (5.8%)	3 (8.6%)	3 (8.6%)	7(20.0%)	13 (37.1%)	5(14.3%)	2 (5.7%)	35 100.0%
Total	21(6.8%)	36(13.0%)	17(6.1%)	70 (25.3%)	78(28.2%)	43(15.5%)	14(5.1%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

2. Mallow, spinach

Table (3.21) shows that, the highest prevalence of students eat cooked Vegetables (such as Mallow, Spinach one to three times monthly, 40.0% from obese students eat cooked Vegetables (such as Mallow, Spinach once a week and 40.6% from overweight students eat Mallow, spinach once to three times monthly.

Table (3.21) frequency and percentage of children who eat cooked Vegetables (such as Mallow, Spinach

	Mallow, spinach							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	3 (5.7%)	2 (3.8%)	1(1.9%)	8(15.4%)	12(23.1%)	21(40.4%)	5 (9.6%)	52 100.0%
NW	2 (1.6%)	4(3.2%)	1(0.8%)	21(16.7%)	39(31.0%)	48 (38.1%)	11 (8.7%)	126 100.0%
OW	2 (3.1%)	2(3.1%)	0(0.0%)	12(18.8%)	16 (25.0%)	26 (40.6%)	6(9.4%)	64 100.0%
OBESE	0 (0.0%)	1 (2.9%)	3 (8.6%)	4(11.4%)	14 (40.0%)	11(31.4%)	2 (5.7%)	35 100.0%
Total	7(2.5%)	9(3.2%)	5(1.8%)	45 (16.2%)	81(29.2%)	106(38.3%)	24(8.7%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

3. Hibiscus, dandelion, watercress

Table (3.22) shows that, the highest prevalence of students do not eat Hibiscus, Dandelion, Watercress, 48.6% from obese students and 45.3% from overweight students do not eat Hibiscus, Dandelion, Watercress.

Table (3.22) frequency and percentage of children who eat cooked Vegetables (such as Hibiscus, Dandelion, Watercress).

	Hibiscus, Dandelion, Watercress							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	2 (3.8%)	2 (3.8%)	1(1.9%)	6(11.5%)	7(13.5%)	17(32.7%)	17 (32.7%)	52 100.0%
NW	3 (2.4%)	4(3.2%)	1(0.8%)	12(9.5%)	17(13.5%)	41 (32.5%)	48 (38.1%)	126 100.0%
OW	2 (3.1%)	2(3.1%)	0(0.0%)	7(10.9%)	4 (6.3%)	20 (31.3%)	29(45.3%)	64 100.0%
OBESE	0 (0.0%)	1 (2.9%)	3 (8.6%)	0(0.0%)	9 (25.7%)	5(14.3%)	17 (48.6%)	35 100.0%
Total	7(2.5%)	9(3.2%)	5(1.8%)	25 (9.0%)	37(13.4%)	83(30.0%)	111(40.1%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

Other foods

4.3.23. Results related to the question No. 21 which provides for (How many times do you eat the following other foods?)

1. Macaroni

Table (3.23) shows that, the highest prevalence of students eat Macaroni once to three times monthly, 48.6% from obese students and 56.3% from overweight students eat Macaroni once to three times monthly.

Table (3.23) frequency and percentage of children who eat Macaroni

	Macaroni							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	2(3.8%)	8 (15.4%)	2(3.8%)	3 (5.8%)	11(21.2%)	20 (38.5%)	6 (11.5%)	52 100.0%
NW	4 (3.2%)	10 (7.9%)	5(4.0%)	12 (9.5%)	28(22.2%)	47 (37.3%)	20(15.9%)	126 100.0%
OW	2 (3.2%)	1 (1.6%)	1 (1.6%)	1(1.6%)	17 (26.6%)	36(56.3%)	6(9.4%)	64 100.0%
OBESE	1 (2.9%)	3(8.6%)	0 (0.0%)	2(5.7%)	9(25.7%)	17(48.6%)	3(8.6%)	35 100.0%
Total	9(3.2%)	22(7.9%)	8(2.9%)	18 (6.5%)	65(23.5%)	120(43.3%)	35(12.6%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

2. Pizza

Table (3.24) shows that, the highest prevalence of students eat Pizza once to three times monthly, 45.7% from obese students and 37.5% from overweight students eat Pizza once to three times monthly.

Table (3.24) frequency and percentage of children who eat Pizza

	Pizza							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	1 (1.9%)	1 (1.9%)	3(5.8%)	0 (0.0%)	5(9.6%)	19 (36.5%)	23 (44.2%)	52 100.0%
NW	3 (2.4%)	5 (4.0%)	2(1.6%)	8 (6.3%)	10(7.9%)	45 (35.7%)	53(42.1%)	126 100.0%
OW	2 (3.2%)	1 (1.6%)	1 (1.6%)	2(3.1%)	3 (4.7%)	24(37.5%)	31(48.4%)	64 100.0%
OBESE	0 (0.0%)	1(2.9%)	0 (0.0%)	1(2.9%)	4(11.4%)	16(45.7%)	13(37.1%)	35 100.0%
Total	6(2.2%)	8(2.9%)	6(2.2%)	11 (4.0%)	22(7.9%)	104(37.5%)	120(43.3%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

3. Fried Potatoes

Table (3.25) shows that, the highest prevalence of students eat fried Potatoes two to three times weekly, 25.7% from obese students and 31.3% from overweight students eat fried Potatoes two to three times weekly.

Table (3.25) frequency and percentage of children who eat fried Potatoes

	Fried Potatoes							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	3(5.7%)	10 (19.2%)	5 (9.6%)	12(23.1%)	7 (13.5%)	13(25.0%)	2 (3.8%)	52 100.0%
NW	12 (9.6%)	27(21.4%)	4(3.2%)	34(27.0%)	22 (17.5%)	15(11.9%)	12(9.5%)	126 100.0%
OW	5(7.9%)	11 (17.2%)	3 (4.7%)	20 (31.3%)	8(12.5%)	14 (21.9%)	3(4.7%)	64 100.0%
OBESE	2 (5.8%)	6(17.1%)	2(5.7%)	9(25.7%)	6(17.1%)	8(22.9%)	2(5.7%)	35 100.0%
Total	22(8.0%)	54(19.5%)	14(5.1%)	75(27.1%)	43 (15.5%)	50(18.1%)	19(6.9%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

Sweets /salted (citrus)

4.3.26. Results related to the question No. 22 which provides for (How many times do you eat of sweets and citrus?)

1. Kunafa, Chocolate, Toffee.

Table (3.26) shows that, the highest prevalence of students eat Kunafa, Chocolate, Toffee, once to two times per day, 48.6% from obese students and 35.9% from overweight students eat Kunafa, Chocolate, Toffee once to two times per day.

Table (3.26) frequency and percentage of children who eat Kunafa, Chocolate, Toffee,

	Kunafa, Chocolate, Toffee							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	7 (13.5%)	16 (30.8%)	4(7.7%)	6(11.5%)	7(13.5%)	6(11.5%)	6 (11.5%)	52 100.0%
NW	18 (14.2%)	44(34.9%)	7(5.6%)	17(13.5%)	18(14.3%)	11 (8.7%)	11 (8.7%)	126 100.0%
OW	11 (17.2%)	23(35.9%)	3(4.7%)	9(14.1%)	6 (9.4%)	8 (12.5%)	4(6.3%)	64 100.0%
OBESE	3 (8.6%)	17 (48.6%)	0 (0.0%)	2(5.7%)	3 (8.6%)	6(17.1%)	4 (11.4%)	35 100.0%
Total	39(14.1%)	100(36.1%)	14(5.1%)	34 (12.3%)	34(12.3%)	31(11.2%)	25(9.0%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

2. Potato Chips, Salted Biscuits.

Table (3.27) shows that, the highest prevalence of students eat Potato Chips, Salted Biscuits, once to two times per day, 42.9% from obese students and 51.6% from overweight students eat Potato Chips, Salted Biscuits, once to two times per day.

Table (3.27) frequency and percentage of children who eat Potato Chips, Salted Biscuits...

	Potato Chips, Salted Biscuits..							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	9 (17.3%)	17 (32.7%)	5(9.6%)	7(13.5%)	5(9.6%)	6(11.5%)	3 (5.8%)	52 100.0%
NW	29 (23.0%)	39(31.0%)	9(7.1%)	17(13.5%)	15(11.9%)	7 (5.6%)	10 (7.9%)	126 100.0%
OW	17 (26.6%)	33(51.6%)	3(4.7%)	7(10.9%)	3 (4.7%)	1 (1.6%)	0(0.0%)	64 100.0%
OBESE	10 (28.6%)	15 (42.9%)	0 (0.0%)	1(2.9%)	3 (8.6%)	2(5.7%)	4 (11.4%)	35 100.0%
Total	65(23.5%)	104(37.5%)	17(6.1%)	32 (11.6%)	26(9.4%)	16(5.8%)	17(6.1%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

Drinks

4.3.28. Results related to the question No. 23 which provides for (How many times do you drink the following drinks?)

1. Milk

Table (3.28) shows that, the highest prevalence of students drink Milk once to two times per day, 31.4% from obese students drink Milk once to two times per day and 34.4% from overweight students do not drink Milk.

Table (3.28) frequency and percentage of children who drink Milk

	Milk							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	4(7.6%)	12 (23.1%)	3 (5.8%)	9 (17.3%)	11(21.2%)	4(7.7%)	9 (17.3%)	52 100.0%
NW	10 (7.9%)	29(23.0%)	8(6.3%)	17(13.5%)	24 (19.0%)	12(9.5%)	26(20.6%)	126 100.0%
OW	4(6.3%)	9 (14.1%)	0 (0.0%)	7 (10.9%)	11(17.2%)	11(17.2%)	22(34.4%)	64 100.0%
OBESE	0 (0.0%)	11(31.4%)	2(5.7%)	1(2.9%)	6(17.1%)	6(17.1%)	9(25.7%)	35 100.0%
Total	18(6.5%)	61(22.0%)	13(4.7%)	34(12.3%)	52 (18.8%)	33(11.9%)	66(23.8%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

2. Juice

Table (3.29) shows that, the highest prevalence of students drink Juice once to two times per day, 31.4% from obese students and 25.0% from overweight students drink Juice once to two times per day.

Table (3.29) frequency and percentage of children who drink Juice.

	Juice							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	4 (7.7%)	8(15.4%)	1(1.9%)	9(17.3%)	14(26.9%)	9(17.3%)	7 (13.5%)	52 100.0%
NW	10 (7.9%)	31(24.6%)	4(3.2%)	18(14.3%)	36(28.6%)	12 (9.5%)	15 (11.9%)	126 100.0%
OW	6 (9.4%)	16(25.0%)	2(3.1%)	12(18.8%)	11 (17.2%)	10 (15.6%)	7(10.9%)	64 100.0%
OBESE	0 (0.0%)	11 (31.4%)	2 (5.7%)	7(20.0%)	4 (11.4%)	6(17.1%)	5 (14.3%)	35 100.0%
Total	20(7.2%)	66(23.8%)	9(3.2%)	46 (16.6%)	65(23.5%)	37(13.4%)	34(12.3%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

3. Fresh Juice(homemade)

Table (3.30) shows that, the highest prevalence of students do not drink fresh Juice (homemade), 28.6% from obese students and 29.7% from overweight students drink fresh Juice (homemade) rarely.

Table (3.30) frequency and percentage of children who drink fresh Juice (homemade).

	Fresh Juice (homemade)							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	7 (13.5%)	7 (13.5%)	1(1.9%)	8(15.4%)	4(7.7%)	14(26.9%)	11 (21.2%)	52 100.0%
NW	10 (7.9%)	19(15.1%)	3(2.4%)	9(15.1%)	33(26.2%)	14 (11.1%)	28(22.2%)	126 100.0%
OW	5 (7.8%)	4(6.3%)	1(1.6%)	11(17.2%)	11 (17.2%)	13 (20.3%)	19(29.7%)	64 100.0%
OBESE	0 (0.0%)	7 (20.0%)	2 (5.7%)	4(11.4%)	2 (5.7%)	10(28.6%)	10 (28.6%)	35 100.0%
Total	22(8.0%)	37(13.4%)	7(2.5%)	42(15.2%)	50(18.1%)	51(18.4%)	68(24.5%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

4. Cola

Table (3.31) shows that, the highest prevalence of students drink Cola once a week, 25.7% from obese students and 29.7% from overweight students drink Cola.

Table (3.31) frequency and percentage of children who drink Cola.

	Cola							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	6 (11.5%)	5 (9.6%)	1(1.9%)	10(19.2%)	9(17.3%)	11(21.2%)	10 (19.2%)	52 100.0%
NW	8 (6.4%)	28(22.2%)	4(3.2%)	25(19.8%)	29(23.0%)	14 (11.1%)	17(13.5%)	126 100.0%
OW	8 (12.5%)	12(18.8%)	3(4.7%)	14(21.9%)	17 (26.6%)	3 (4.7%)	6(9.4%)	64 100.0%
OBESE	0 (0.0%)	7 (20.0%)	2 (5.7%)	9(25.7%)	9 (25.7%)	3(8.6%)	5 (14.3%)	35 100.0%
Total	22(8.0%)	52(18.8%)	10(3.6%)	58(20.9%)	64(23.1%)	31(11.2%)	38(13.7%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

5. Power drink (XL)

Table (3.32) shows that, the highest prevalence of students do not drink Power drink (XL), 74.3% from obese students and 87.5% from overweight students do not drink Power drink (XL).

Table (3.32) frequency and percentage of children who drink Power drink (XL).

	Power drink (XL)							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	1 (1.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4(7.7%)	47 (90.4%)	52 100.0%
NW	8 (6.4%)	3(2.4%)	1(0.8%)	0 (0.0%)	(4.0%)	4(3.2%)	105(83.3%)	126 100.0%
OW	3(4.7%)	0 (0.0%)	1 (1.6%)	0 (0.0%)	1(1.6%)	11(4.7%)	56(87.5%)	64 100.0%
OBESE	0 (0.0%)	1(2.9%)	0 (0.0%)	1(2.9%)	1(2.9%)	6(17.1%)	26(74.3%)	35 100.0%
Total	12(4.3%)	4(1.4%)	2(0.7%)	1(0.4%)	7 (2.5%)	17(6.1%)	234(84.5%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

6. Water

Table (3.33) shows that, the highest prevalence of students drink Water three times or above, 80% from obese students and 84.4% from overweight students drink Water, whereas 0.7% of students do not drink Water.

Table (3.33) frequency and percentage of children who drink Water

	Water							Total
	3->4/day	1-2/day	4-6/week	2-3/week	1/week	1-3/month	rare	
UW	42 (80.8%)	5 (9.6%)	1(1.9%)	0(0.0%)	0(0.0%)	4(7.7%)	0 (0.0%)	52 100.0%
NW	98 (77.7%)	15(11.9%)	4(3.2%)	3(2.4%)	3(2.4%)	1(0.8%)	2(1.6%)	126 100.0%
OW	54 (84.4%)	4(6.3%)	3(4.7%)	2(3.1%)	0 (0.0%)	1 (1.6%)	0(0.0%)	64 100.0%
OBESE	28 (80.0%)	5 (14.3%)	1 (2.9%)	0(0.0%)	0 (0.0%)	1(2.9%)	0 (0.0%)	35 100.0%
Total	222(80.2%)	29(10.5%)	9(3.2%)	5(1.8%)	3(1.1%)	7(2.5%)	2(0.7%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

4.3.34. Results related to the question No. 24 which provides for (Do you usually drink or eat while you are watching TV?)

Table (3.34) shows that, the highest prevalence of students who do not drink or eat while watching TV, while 24.5% of students who drink or eat while watching TV.

Table (3.34) frequency and percentage of children who drink or eat while watching TV

	Do you usually drink or eat while you are watching TV		Total
	yes	No	
UW	15(28.8%)	37(71.2%)	52 100.0%
NW	32(25.4%)	94(74.6%)	126 100.0%
OW	15 (23.4%)	74.6 (76.6%)	64 100.0%
OBESE	6 (17.2%)	76.6 (82.9%)	35 100.0%
Total	67(24.5%)	209(75.5%)	277 100.0%

*UW: underweight * NW: normal weight* OW: overweight

Physical Activity

4.4.1. Results related to the question No. 26 which provides for (How do you go to school?)

Table (4.1) shows that, 87.7% of students walk on foot when they go to their schools, 85.7% from obese students and 90.6% from overweight students go to their schools by foot.

Table (4.1) Frequency and percentage of the method which the children used to go to their schools

	How do you go to the school?			Total
	on foot	by public transport	private car	
UW number (%)	40 (78.4%)	5 (9.8%)	6 (11.8%)	51 (100.0%)
NW number (%)	114 (90.5%)	7 (5.6%)	5 (4.0%)	126 (100.0%)
OW number (%)	58 (90.6%)	3 (4.7%)	3 (4.7%)	64 (100.0%)
OBESE number (%)	30 (85.7%)	2 (5.7%)	3 (8.6%)	35 (100.0%)
Total number (%)	242 (87.7%)	17 (6.2%)	17 (6.2%)	276 (100.0%)

*UW: underweight * NW: normal weight* OW: overweight

4.4.2. Results related to the question No. 27 which provides for (How many times do you have physical education classes per week?)

Table (4.2) shows that,88% of students have two class physical education per week, 77.1% from obese students and 90.6% from overweight students has two classes physical education per week.

Table (4.2) Frequency and percentage of times students own physical education classes per week

	How many times do have physical education classes per week?						Total
	1 time	2times	3times	4times	5times	6times	
UW number (%)	0 (0.0%)	47 (92.2%)	3 (5.9%)	1 (2.0%)	0 (0.0%)	0 (0.0%)	51 100.0%
NW number (%)	3(2.4%)	111 (88.1%)	7 (5.6%)	3 (2.4%)	1 (0.8%)	1 (0.8%)	126 100.0%
OW number (%)	2 (3.1%)	58 (90.6%)	3 (4.7%)	1 (1.6%)	0 (0.0%)	0 (0.0%)	64 100.0%
OBESE number (%)	3 (8.6%)	27 (77.1%)	2 (5.7%)	3 (8.6%)	0 (0.0%)	0 (0.0%)	35 100.0%
Total number (%)	8 (2.9%)	243 (88.0%)	15 (5.4%)	8 (2.9%)	1 (0.4%)	1 (0.4%)	276 100.0%

*UW: underweight * NW: normal weight* OW: overweight

4.4.3. Results related to the question No. 28 which provides for (How many times do you participate in the physical education classes per week?)

Table (4.3) shows that, 87.7% of the students were participating in two sport classes weekly, followed by 5.1% of students who are participating in only one sport class weekly, 74.3% from obese students and 90.6% from overweight students are participating in two classes physical education per week.

Table (4.3) Frequency and percentage of children who participating in the physical education classes per week

	How many times do you participate in the physical education classes per week?						Total
	1 time	2times	3times	4times	5times	6times	
UW number (%)	0 (0.0%)	46 (90.2%)	3 (5.9%)	1 (2.0%)	0 (0.0%)	1 (2.0%)	51 100.0%
NW number (%)	6(4.8%)	112 (88.9%)	3 (2.4%)	3 (2.4%)	2(1.6%)	0 (0.0%)	126 100.0%
OW number (%)	3 (4.7%)	58 (90.6%)	2 (3.1%)	1 (1.6%)	0 (0.0%)	0 (0.0%)	64 100.0%
OBESE number (%)	5 (14.3%)	26 (74.3%)	1 (2.8%)	3 (8.6%)	0 (0.0%)	0 (0.0%)	35 100.0%
Total number (%)	14 (5.1%)	242 (87.7%)	9 (3.3%)	8 (2.9%)	1 (0.7%)	1 (0.4%)	276 100.0%

*UW: underweight * NW: normal weight* OW: overweight

4.4.4. Results related to the question No. 29 which provides for (How many times do you participate in a non-curriculum sport activity in school, for instant, before the classes or in the brake?)

Table (4.4) reveals that, the highest percentage of the students who are participating in a non-curriculum sport activity in school one to two times a week is up to 37.7%, 28.6% from obese students and 46.9% from overweight students are participating in a non-curriculum sport activity in school per week.

Table (4.4) Frequency and percentage of children who participating in a non-curriculum sport activity per week

	How many times do you participate in a non-curriculum sport activity in school? (For instant, before the classes or in the brake)					Total
	5-6/week	3-4/week	1-2/week	don't participate	other	
UW number (%)	11 (21.6%)	6 (11.8%)	18 (35.3%)	12 (23.5%)	4 (7.8%)	51 100.0%
NW number (%)	18 (14.3%)	24 (19.0%)	46 (36.5%)	15(11.9%)	23(18.3%)	126 100.0%
OW number (%)	12 (18.8%)	9 (14.1%)	30 (46.9%)	8 (12.5%)	5 (7.8%)	64 100.0%
OBESE number (%)	6 (17.1%)	3(8.6%)	10 (28.6%)	7 (20.0%)	9 (25.7%)	35 100.0%
Total number (%)	47 (17.0%)	42(15.2%)	104(37.7%)	42 (15.2%)	41 (14.9%)	276 100.0%

*UW: underweight * NW: normal weight* OW: overweight

4.4.5. Results related to the question No. 30 which provides for (How many times do you participate in physical activities out of school for example, swimming, martial art trainings, basketball or football teams..?)

Table (4.5) shows that, around half of the students are not participating in physical education activities out of the school. Followed by 21.4% of students who were participating in physical education activities out of school one to two times per week 62.9% from obese students and 48.4% from overweight students are not participating in physical activities out of school.

Table (4.5) Frequency and percentage of children who participating in the curriculum sport activity per week

	How many times do you participate in physical education activities out of the school like (swimming, martial art trainings, basketball or football teams..)					Total
	5-6/week	3-4/week	1-2/week	don't participate	other	
UW number (%)	3 (5.9%)	7 (13.7%)	8 (15.7%)	28 (54.9%)	5 (9.8%)	51 100.0%
NW number (%)	17 (13.5%)	8 (6.3%)	32 (25.4%)	55(43.7%)	14(11.1%)	126 100.0%
OW number (%)	7 (10.9%)	7 (10.9%)	12 (18.8%)	31 (48.4%)	7 (10.9%)	64 100.0%
OBESE number (%)	0 (0.0%)	3(8.6%)	7 (20.0%)	22 (62.9%)	3 (8.6%)	35 100.0%
Total number (%)	27 (9.8%)	25(9.1%)	59(21.4%)	136 (49.3%)	29 (10.5%)	276 100.0%

*UW: underweight * NW: normal weight* OW: overweight

4.4.6. Results related to the question No. 31 which provides for (How many times do you practice sport in an unofficial place, for example, in the street, on an unofficial playground?)

Table (4.6) reveals that, the highest percentage of the students who are participating sport activity in an unofficial place fifth to sixth times per day, 42.9% from obese students and 39.1% from overweight students are participating in physical activities in an unofficial place fifth to sixth times per day.

Table (4.6) Frequency and percentage of children who participating in practice sport in an unofficial place per week.

	How many times do you practice sport in an unofficial places (in the street, on unofficial playground...)					Total
	5-6/week	3-4/week	1-2/week	don't participate	other	
UW number (%)	20 (39.2%)	9 (17.6%)	10 (19.6%)	10 (19.6%)	2 (3.9%)	51 100.0%
NW number (%)	59 (46.8%)	13 (10.3%)	28 (22.2%)	14(11.1%)	12(9.5%)	126 100.0%
OW number (%)	25 (39.1%)	13 (20.3%)	14 (21.9%)	5 (7.8%)	7 (10.9%)	64 100.0%
OBESE number (%)	15 (42.9%)	3(8.6%)	11 (31.4%)	3 (8.6%)	3 (8.6%)	35 100.0%
Total number (%)	119 (43.1%)	38(13.8%)	63(22.8%)	32 (11.6%)	24 (8.7%)	276 100.0%

*UW: underweight * NW: normal weight* OW: overweight

4.4.7. Results related to the question No. 33 which provides for (How many hours a day do you watch TV on school days?)

Table (4.7) shows that, around half of the students are watching TV in school days from 1-2 hours daily, followed by 28.3 % of students who are watching TV on school days below one hour daily, 37.1% from obese students and 51.6% from overweight students are watching TV in school days from 1-2 hours daily.

Table (4.7) Frequency and percentage of children who spending hours in watching TV on school days.

	How many hours a day do you watch TV (in school days)?					Total
	never	<1hour	1-2hour	3-5hour	>5hour	
UW number (%)	4 (7.8%)	16 (31.4%)	28 (54.9%)	2 (3.9%)	1 (2.0%)	51 100.0%
NW number (%)	11 (8.7%)	31 (24.6%)	67 (53.2%)	15(11.9%)	2(1.6%)	126 100.0%
OW number (%)	3 (4.7%)	17 (26.6%)	33 (51.6%)	9 (14.1%)	2 (3.1%)	64 100.0%
OBESE number (%)	1 (2.9%)	14(40.0%)	13 (37.1%)	4 (11.4%)	3 (8.6%)	35 100.0%
Total number (%)	19 (6.9%)	78(28.3%)	141(51.1%)	30 (10.9%)	8 (2.9%)	276 100.0%

*UW: underweight * NW: normal weight* OW: overweight

4.4.8. Results related to the question No. 34 which provides for (on vacation, how many hours do you spend watching TV?)

Table (4.8) reveals that, more than a third of the students are watching TV on vacation days from 1-2 hours daily, followed by 30.1 % of students who are watching TV on vacation days 3-5 hours daily, 51.4% from obese students and 34.4% from overweight students are watching TV on vacation days from 1-2 hours daily.

Table (4.8) Frequency and percentage of children who spending hours in watching TV on vacation days.

	In vacation, how many hours do you pass watch TV?					Total
	never	<1hour	1-2hour	3-5hour	>5hour	
UW number (%)	4 (7.8%)	8(15.7%)	22 (43.1%)	12 (23.5%)	5 (9.8%)	51 100.0%
NW number (%)	9 (7.1%)	15 (11.9%)	38 (30.2%)	46(36.5%)	18(14.3%)	126 100.0%
OW number (%)	2 (3.1%)	10 (15.6%)	22 (34.4%)	22 (34.4%)	8 (12.5%)	64 100.0%
OBESE number (%)	1 (2.9%)	4(11.4%)	18 (51.4%)	3 (8.6%)	9 (25.7%)	35 100.0%
Total number (%)	16 (5.8%)	37(13.4%)	100(36.2%)	83 (30.1%)	40 (14.5%)	276 100.0%

*UW: underweight * NW: normal weight* OW: overweight

4.4.9. Results related to the question No. 36 which provides for (In school days, how many hours do you spend playing computer games or surfing the internet?)

Table (4.9) reveals that, 42% of the students are not playing computer games or surfing the internet in school days, followed by 28.6% of students who are playing computer games or surfing the internet in school days for 1-2 hours daily, 45.7% from obese students and 50% from overweight students are not playing computer games or surfing the internet in school days.

Table (4.9) Frequency and percentage of children who spending time in playing computer games or surfing the internet on school days.

	In school days, how many hours do you pass play computer games or surfing the internet?					Total
	never	<1hour	1-2hour	3-5hour	>5hour	
UW number (%)	23 (45.1%)	15(29.4%)	12 (23.5%)	0 (0.0%)	1 (2.0%)	51 100.0%
NW number (%)	45 (35.7%)	37 (29.4%)	35 (27.8%)	3(2.4%)	6(4.8%)	126 100.0%
OW number (%)	32 (50.0%)	13 (20.3%)	15 (23.4%)	4 (6.3%)	0 (0.0%)	64 100.0%
OBESE number (%)	16 (45.7%)	5 (14.3%)	10 (28.6%)	2 (5.7%)	2 (5.7%)	35 100.0%
Total number (%)	116 (42%)	70(25.4%)	72(26.1%)	9 (3.3%)	9 (3.3%)	276 100.0%

*UW: underweight * NW: normal weight* OW: overweight

4.4.10. Results related to the question No. 37 which provides for (on vacations, how many hours do you spend in front the computer playing or surfing the internet?)

Table (4.10) Shows that, 33% of the students are not playing computer games or surfing the internet on vacations, followed by 30.4% of students who were playing computer games or surfing the internet on vacations from 1-2 hours daily, 37.1% from obese students and 32.8 from overweight students are not playing computer games or surfing the internet on vacations.

Table (4.10) Frequency and percentage of children who spending time in playing computer games or surfing the internet on vacation days.

	In vacations, how many hours do you pass before the computer playing or surfing the internet?					Total
	never	<1hour	1-2hour	3-5hour	>5hour	
UW number (%)	19 (37.3%)	6(11.8%)	20 (39.2%)	4 (7.8%)	1 (2.0%)	51 100.0%
NW number (%)	38 (30.2%)	20 (15.9%)	32 (25.4%)	23(18.3%)	12(9.5%)	126 100.0%
OW number (%)	21 (32.8%)	9 (14.1%)	22 (34.4%)	10 (15.6%)	2 (3.1%)	64 100.0%
OBESE number (%)	13 (37.1%)	2(5.7%)	10 (28.6%)	7 (20.0%)	3 (8.6%)	35 100.0%
Total number (%)	91 (33%)	37(13.4%)	84(30.4%)	44 (15.9%)	18 (6.5%)	276 100.0%

*UW: underweight * NW: normal weight* OW: overweight

4.5. The relationship between influencing factors and overweight/ obesity status.

4.5.1. The relationship between socio-demographic variables and overweight/ obesity status.

The largest percentage of participating students in this study were from camps, this explains the greater percentage of overweight and obesity, which were from camps, then followed by residents in Nablus city. There was a statistical relationship found between students residency place and overweight/obesity status.

Students' fathers who finished their secondary education have the highest prevalence of overweight and obesity, but there was no statistical relationship and no significant association found between father's education level and overweight/obesity status among their children.

Students' mothers who finished their secondary education have the highest prevalence of overweight and obesity, but there was no statistical relationship and no significant association found between mother's education level and overweight/obesity status among their children.

The highest proportion of students' fathers work full time have the highest prevalence of overweight and obesity, but there was no statistical relationship and no significant association found between father's occupation and overweight/obesity status among targeted children.

The highest proportion of students' mothers do not work have the highest prevalence of overweight and obesity among targeted children. However, there was no statistical relationship and no significant association found between mother's work and overweight/obesity status.

The highest proportion of students who have 4-7 siblings have the highest prevalence of overweight and obesity among targeted children. However, there was no statistical

relationship and no significant association found between the sibling number and overweight/obesity status among their brothers.

shows that, the highest proportion of students who their family income is less than 1000 NIS have the highest prevalence of obesity, while the highest proportion students who their family income is less than 1000 NIS and family income is between 1500-1999 have the highest prevalence of overweight. But there was no statistical relationship and no significant association found between family income and overweight/obesity status.

According to age, divided participants into three age groups, the percentage of overweight and obesity among different age groups differs by age, but there was no statistical relationship and no significant association found between students age and overweight/obesity.

Table (5.1) the relationship between Classification of the child's weight (underweight, normal weight, overweight, obesity) and their socio-demographic variables.

socio-demographic variables	Chi-Square	(p value)
Age	11.116 ^a	.085
Residency place	13.181^a	.040
Father Education	7.821 ^a	.552
Mother Education	15.818 ^a	.071
Father Work	9.995 ^a	.125
Mother Work	6.072 ^a	.415
Siblings number	1.598 ^a	.953
family Income	1.443 ^a	.998

4.5.2. The relationship between eating habits and overweight / obesity status.

Table (5.2) reveals that, there was no a statistical relationship between the students who eat Lentils, Meat,Fish,Vegetables, Fruits or CHO and overweight/obesity status, and there was no statistical relationship between students who drink Beverages and overweight/obesity status, while there was a significant statistical association between students who eat Potato Chips, Salted Biscuits,drink Tea,Juice and overweight/obesity status.

Table (5.2) the relationship between Classification of the child's weight and eating habits

Eating habits	Classification of the child's weight		Eating habits	Classification of the child's weight	
	Chi-Square	(p value)		Chi-Square	(p value)
Breads	15.392 ^a	.803	Stew, Mahashi, Maqluba, Ozzy, Vegetables on the tray, Vegetable fried except Potatoes	29.903 ^a	.188
Dairy	18.895 ^a	.758			
Lentils	28.930 ^a	.223	Mallow, Spinach	29.730 ^a	.194
Chickpeas	14.236 ^a	.859	Hibiscus, Dandelion, Watercress	36.409 ^a	.050
Beans	19.081 ^a	.580	Macaroni	25.356 ^a	.387
Peas	21.213 ^a	.446	Pizza	18.698 ^a	.768
Chicken	22.827 ^a	.530	Fried potato	18.243 ^a	.791
Turkey Meat	22.150 ^a	.391	Kunafa, Chocolate, Toffee	15.874 ^a	.893
Shawarma	21.424 ^a	.433	Potato Chips, Salted Biscuits	38.089^a	.034
Hamburgers	16.854 ^a	.855	Milk	27.055 ^a	.302
Fresh Fish	33.688 ^a	.090	Juice	44.680^a	.006
Canned Tuna	27.702 ^a	.273	Fresh Juice	22.378 ^a	.557
Lamb Meat	25.992 ^a	.354	Cola	30.648 ^a	.286
Fruits	30.126 ^a	.089	Tea	36.860^a	.045
Tomato	25.057 ^a	.403	Power drink (XL)	35.438 ^a	.062
Cucumber	31.336 ^a	.144	Water	24.658 ^a	.425
Lettuce, ..	36.896 ^a	.055	Vitamins	8.152 ^a	.519
			Do you usually drink or eat while you are watching TV	10.807 ^a	.289

4.5.3. The relationship between students who are practicing physical activity and overweight / obesity status.

Table (5.3) shows that, there was no statistical relationship and no significant association found between students who practicing or do not practicing physical activities such as, (swimming, martial art trainings, basketball, football teams) and overweight/obesity status.

Table (5.3) the relationship between Classification of the child's weight and practicing physical activity

Physical activity	Classification of the child's weight	
	Chi-Square	(p value)
1. How do you go to the school?	6.239 ^a	.397
2. How many times do have physical education classes per week?	13.136 ^a	.592
3. How many times do you participate in the physical education classes per week?	22.063 ^a	.106
4. How many times do you participate in a non-curriculum sport activity in school? (For instant, before the classes or in the brake	17.945 ^a	.117
5. How many times do you participate in physical education activities out of the school like (swimming, martial art trainings, basketball or football teams...?)	13.205 ^a	.354
6. How many times do you practice sport in an unofficial places (in the street, on unofficial playground...)	12.285 ^a	.423
7. How many hours a day do you watch TV (in school days)?	13.895 ^a	.307
8. In vacation, how many hours do you pass watch TV?	19.294 ^a	.082
9. In school days, how many hours do you pass play computer games or surfing the internet?	14.604 ^a	.264
10. In vacations, how many hours do you pass before the computer playing or surfing the internet?	18.935 ^a	.396

4.6. The relationship between eating habits and socio-demographic characteristics.

4.6.1. The relationship between eating habits and student's age

Table (6.1) reveals that, there was a statistical relationship and a significant association found between the students who eat Macaroni, Stew, Mahashi, Maqluba, Ozzy, Vegetables on the tray, Vegetable fried except Potatoes and students age, on the other hands there was no statistical relationship and no significant association found between students who eat Llegumes, Meat, Fish, Vegetables, Fruits and students age,

4.6.2. The relationship between eating habits and student's residency place

Table (6.2) reveals that, there was a statistical relationship and a significant association found between the students who eat Bread, Fruits and student's residency place, on the other hands there was no statistical relationship and no significant association found between students who eat other kinds of food and students residency place.

4.6.3. The relationship between eating habits and students' father's education level

Table (6.3) reveals that, there was a statistical relationship and a significant association found between the students who drink Cola and father's level of education, whereas there was no statistical relationship and no significant association found between students who eat or drink other kinds of food and father's level of education.

4.6.4. The relationship between eating habits and students' mother's education level

Table (6.4) reveals that, there was a statistical relationship and a significant association found between the students who eat chicken, Turkey Meat, Canned Tuna Fish, drink milk and mother's education level, while there was no statistical relationship and no significant association found between students who eat or drink other kinds of food and mother's education level.

4.6.5. The relationship between eating habits and students' father's work

Table (6.5) reveals that, there was a statistical relationship and a significant association found between the students who eat Fruits and father's work, whereas there was no statistical relationship and no significant association found between students who eat or drink other eating habits and father's work.

4.6.6. The relationship between eating habits and students' mother's work

Table (6.6) reveals that, there was a statistical relationship and a significant association found between the students who eat Chicken, Beans, fried Potato and mother's work, whereas there was no statistical relationship and no significant association found between students who eat or drink other eating habits and mother's work.

4.6.7. The relationship between eating habits and students' sibling's number

Table (6.7) reveals that, there was a statistical relationship and a significant association found between the students who eat Dairy, Canned Tuna Fish, Mallow, Spinach, Pizza and number of siblings for the students, whereas there was no statistical relationship and no significant association found between students who eat or drink other eating habits and siblings number.

4.6.8. The relationship between eating habits and students' family income

Table (6.8) reveals that, there was a statistical relationship and a significant association found between the students who eat Potato Chips, Salted Biscuits, Mallow, Spinach, Lettuce, Carrot, Fruits and family income, whereas there was no statistical relationship and no significant association found between students who eat or drink other kinds of foods and family income

Table (6.1) the relationship between eating habits and age of students

Eating habits	Student age		Eating habits	Student age	
	Chi-Square	(p value)		Chi-Square	(p value)
Breads	9.499 ^a	.798	Stew, Mahashi, Maqluba, Ozzy, Vegetables on the tray, Vegetable fried except Potatoes	29.181^a	.023
Dairy	15.347 ^a	.499	Mallow, Spinach	22.292 ^a	.134
Lentils	17.433 ^a	.358	Hibiscus, Dandelion, Watercress	13.230 ^a	.656
Chickpeas	12.986 ^a	.528	Macaroni	26.682^a	.045
Beans	19.971 ^a	.131	Pizza	22.313 ^a	.133
Peas	14.137 ^a	.440	Fried Potato	14.209 ^a	.583
Chicken	18.108 ^a	.318	Kunafa, Chocolate, Toffee	15.842 ^a	.464
Turkey Meat	14.387 ^a	.421	Potato chips, Salted Biscuits	13.469 ^a	.638
Shawarma	12.999 ^a	.527	Milk	19.983 ^a	.221
Hamburgers	8.379 ^a	.937	Juice	13.873 ^a	.608
Fresh Fish	20.017 ^a	.219	Fresh juice	17.989 ^a	.325
Canned Tuna	17.283 ^a	.367	Cola	10.988 ^a	.895
Lamb Meat	16.277 ^a	.434	Tea	15.136 ^a	.515
Fruits	22.473 ^a	.069	Power drink (XL)	15.534 ^a	.486
Tomato	8.549 ^a	.931	Water	18.926 ^a	.273
Cucumber	10.866 ^a	.818	Vitamins	5.034 ^a	.539
Lettuce, ..	18.616 ^a	.289	Do you usually drink or eat while you are watching TV	4.550 ^a	.603

Table (6.2) the relationship between eating habits and student's residency place

Eating habits	Child residency place		Eating habits	Child residency place	
	Chi-Square	(p value)		Chi-Square	(p value)
Breads	82.006^a	.000	Stew, Mahashi, Maqluba, Ozzy, Vegetables on the tray, Vegetable fried except Potatoes	14.478 ^a	.563
Dairy	48.121 ^a	.177	Mallow, Spinach	3.978 ^a	.999
Lentils	12.986 ^a	.528	Hibiscus, Dandelion, Watercress	9.888 ^a	.872
Chickpeas	19.971 ^a	.131	Macaroni	14.311 ^a	.576
Beans	14.137 ^a	.440	Pizza	17.651 ^a	.345
Peas	9.002 ^a	.831	Fried Potato	11.014 ^a	.809
Chicken	17.843 ^a	.333	Kunafa, Chocolate, Toffee	11.849 ^a	.754
Turkey Meat	12.647 ^a	.554	Potato Chips, Salted Biscuits	11.485 ^a	.779
Shawarma	18.102 ^a	.202	Milk	14.535 ^a	.559
Hamburgers	8.298 ^a	.939	Juice	14.168 ^a	.586
Fresh Fish	6.258 ^a	.985	Fresh juice	21.639 ^a	.155
Canned Tuna	13.194 ^a	.659	Cola	17.769 ^a	.471
Lamb Meat	13.345 ^a	.647	Tea	5.738 ^a	.991
Fruits	25.019^a	.034	Power drink (XL)	4.926 ^a	.996
Tomato	5.945 ^a	.989	Water	22.185 ^a	.137
Cucumber	9.253 ^a	.903	Vitamins	9.387 ^a	.153
Lettuce, ..	7.016 ^a	.973	Do you usually drink or eat while you are watching TV	11.000 ^a	.088

Table (6.3) the relationship between eating habits and father education

Eating habits	Father education		Eating habits	Father education	
	Chi-Square	(p value)		Chi-Square	(p value)
Breads	19.875 ^a	.529	Stew, Mahashi, Maqluba, Ozzy, Vegetables on the tray, Vegetable fried except Potatoes	29.129 ^a	.215
Dairy	25.109 ^a	.400	Mallow, Spinach	17.452 ^a	.829
Lentils	21.549 ^a	.606	Hibiscus, Dandelion, Watercress	31.278 ^a	.146
Chickpeas	27.330 ^a	.160	Macaroni	19.043 ^a	.750
Beans	19.092 ^a	.579	Pizza	28.646 ^a	.234
Peas	14.625 ^a	.841	Fried Potato	22.073 ^a	.575
Chicken	27.392 ^a	.287	Kunafa, Chocolate, Toffee	16.769 ^a	.564
Turkey Meat	21.563 ^a	.425	Potato Chips, Salted Biscuits	17.909 ^a	.807
Shawarma	16.769 ^a	.725	Milk	22.196 ^a	.568
Hamburgers	18.016 ^a	.802	Juice	15.895 ^a	.892
Fresh Fish	22.256 ^a	.564	Fresh Juice	25.060 ^a	.403
Canned Tuna	22.729 ^a	.536	Cola	44.591^a	.018
Lamb Meat	22.268 ^a	.563	Tea	16.964 ^a	.850
Fruits	22.984 ^a	.345	Power drink (XL)	9.428 ^a	.399
Tomato	13.942 ^a	.948	Water	22.448 ^a	.553
Cucumber	23.569 ^a	.486	Vitamins	19.875 ^a	.529
Lettuce, ..	24.710 ^a	.422	Do you usually drink or eat while you are watching TV	9.188 ^a	.420

Table (6.4) the relationship between eating habits and mother education

Eating habits	Mother education		Eating habits	Mother education	
	Chi-Square	(p value)		Chi-Square	(p value)
Breads	16.180 ^a	.759	Stew, Mahashi, Maqluba, Ozzy, Vegetables on the tray, Vegetable fried except Potatoes	24.204 ^a	.450
Dairy	30.492 ^a	.169			
Lentils	19.731 ^a	.712	Mallow, Spinach	26.937 ^a	.307
Chickpeas	26.122 ^a	.202	Hibiscus, Dandelion, Watercress	20.183 ^a	.686
Beans	22.219 ^a	.387	Macaroni	27.314 ^a	.290
Peas	26.972 ^a	.172	Pizza	27.869 ^a	.266
Chicken	37.380^a	.040	Fried Potato	27.433 ^a	.285
Turkey Meat	34.294^a	.034	Kunafa, Chocolate, Toffee	16.769 ^a	.564
Shawarma	32.437 ^a	.053	Potato Chips, Salted Biscuits	26.317 ^a	.337
Hamburgers	32.381 ^a	.118	Milk	40.801^a	.018
Fresh Fish	30.094 ^a	.182	Juice	23.527 ^a	.489
Canned tuna	43.020^a	.010	Fresh Juice	27.174 ^a	.296
Lamb Meat	28.287 ^a	.248	Cola	20.089 ^a	.827
Fruits	21.815 ^a	.410	Tea	23.650 ^a	.482
Tomato	31.481 ^a	.140	Power drink (XL)	14.867 ^a	.925
Cucumber	31.474 ^a	.141	Water	22.448 ^a	.553
Lettuce, ..	31.176 ^a	.149	Vitamins	16.328 ^a	.060
			Do you usually drink or eat while you are watching TV	17.656^a	.039

Table (6.5) the relationship between eating habits and father work

Eating habits	father work		Eating habits	father work	
	Chi-Square	(p value)		Chi-Square	(p value)
Breads	11.633 ^a	.949	Stew, Mahashi, Maqluba, Ozzy, Vegetables on the tray, Vegetable fried except Potatoes	11.941 ^a	.748
Dairy	21.553 ^a	.606			
Lentils	29.458 ^a	.203	Mallow, Spinach	20.103 ^a	.216
Chickpeas	11.417 ^a	.954	Hibiscus, Dandelion, Watercress	12.576 ^a	.703
Beans	14.982 ^a	.824	Macaroni	15.062 ^a	.919
Peas	32.405 ^a	.053	Pizza	16.038 ^a	.887
Chicken	18.991 ^a	.752	Fried potato	27.433 ^a	.285
Turkey Meat	16.563 ^a	.737	Kunafa, Chocolate, Toffee	62.835 ^a	.074
Shawarma	16.711 ^a	.728	Potato Chips, Salted Biscuits	26.233 ^a	.051
Hamburgers	17.100 ^a	.844	Milk	24.639 ^a	.426
Fresh Fish	20.814 ^a	.650	Juice	17.730 ^a	.340
Canned Tuna	17.695 ^a	.818	Fresh Juice	25.693 ^a	.058
Lamb Meat	22.544 ^a	.547	Cola	20.104 ^a	.327
Fruits	33.781^a	.038	Tea	19.844 ^a	.227
Tomato	21.965 ^a	.581	Power drink (XL)	7.326 ^a	1.000
Cucumber	23.486 ^a	.491	Water	22.448 ^a	.553
Lettuce, ..	10.050 ^a	.864	Vitamins	13.935 ^a	.125
			Do you usually drink or eat while you are watching TV	4.007 ^a	.676

Table (6.6) the relationship between eating habits and mother work

Eating habits	mother work		Eating habits	mother work	
	Chi-Square	(p value)		Chi-Square	(p value)
Breads	22.979 ^a	.061	Stew, Mahashi, Maqluba, Ozzy, Vegetables on the tray, Vegetable fried except Potatoes	25.083 ^a	.068
Dairy	13.796 ^a	.614			
Lentils	16.007 ^a	.452	Mallow, Spinach	13.082 ^a	.667
Chickpeas	14.281 ^a	.429	Hibiscus, Dandelion, Watercress	10.347 ^a	.848
Beans	24.109^a	.044	Macaroni	16.055 ^a	.449
Peas	15.142 ^a	.369	Pizza	9.111 ^a	.779
Chicken	28.374^a	.029	Fried Potato	39.184^a	.001
Turkey Meat	6.124 ^a	.963	Kunafa, Chocolate, Toffee	19.709 ^a	.234
Shawarma	12.716 ^a	.549	Potato Chips, Salted Biscuits	14.946 ^a	.529
Hamburgers	15.742 ^a	.471	Milk	23.977 ^a	.090
Fresh Fish	11.109 ^a	.803	Juice	15.180 ^a	.512
Canned Tuna	15.034 ^a	.522	Fresh Juice	25.693 ^a	.058
Lamb Meat	8.048 ^a	.947	Cola	9.254 ^a	.954
Fruits	23.263 ^a	.056	Tea	15.561 ^a	.484
Tomato	26.016 ^a	.054	Power drink (XL)	5.231 ^a	.948
Cucumber	15.888 ^a	.461	Water	18.926 ^a	.273
Lettuce, ..	19.360 ^a	.250	Vitamins	5.056 ^a	.537
			Do you usually drink or eat while you are watching TV	1.802 ^a	.937

Table (6.7) the relationship between eating habits and siblings number

Eating habits	Siblings number		Eating habits	Siblings number	
	Chi-Square	(p value)		Chi-Square	(p value)
Breads	14.674 ^a	.401	Stew, Mahashi, Maqluba, Ozzy, Vegetables on the tray, Vegetable fried except Potatoes	17.315 ^a	.365
Dairy	38.181^a	.001	Mallow, Spinach	29.528^a	.021
Lentils	25.969 ^a	.054	Hibiscus, Dandelion, Watercress	25.073 ^a	.069
Chickpeas	7.195 ^a	.927	Macaroni	21.771 ^a	.151
Beans	16.383 ^a	.291	Pizza	28.076^a	.031
Peas	9.211 ^a	.817	Fried Potato	23.833 ^a	.093
Chicken	22.364 ^a	.132	Kunafa, Chocolate, Toffee	11.253 ^a	.794
Turkey Meat	15.193 ^a	.365	Potato Chips, Salted Biscuits	21.771 ^a	.151
Shawarma	17.775 ^a	.217	Milk	16.582 ^a	.413
Hamburgers	18.389 ^a	.302	Juice	19.690 ^a	.234
Fresh Fish	22.504 ^a	.128	Fresh Juice	10.834 ^a	.820
Canned Tuna	38.765^a	.001	Cola	7.264 ^a	.988
Lamb Meat	31.030^a	.013	Tea	24.991 ^a	.070
Fruits	10.799 ^a	.702	Power drink (XL)	7.686 ^a	.958
Tomato	19.479 ^a	.245	Water	22.185 ^a	.137
Cucumber	14.097 ^a	.591	Vitamins	9.018 ^a	.173
Lettuce, ..	19.043 ^a	.266	Do you usually drink or eat while you are watching TV	3.040 ^a	.804

Table (6.8) the relationship between eating habits and family income

Eating habits	Family income		Eating habits	Family income	
	Chi-Square	(p value)		Chi-Square	(p value)
Breads	37.843^a	.013	Stew, Mahashi, Maqluba, Ozzy, Vegetables on the tray, Vegetable fried except Potatoes	13.196 ^a	.963
Dairy	24.761 ^a	.419			
Lentils	31.669 ^a	.135	Mallow, Spinach	46.120^a	.004
Chickpeas	18.676 ^a	.606	Hibiscus, Dandelion, Watercress	20.200 ^a	.685
Beans	23.453 ^a	.320	Macaroni	29.212 ^a	.212
Peas	21.474 ^a	.430	Pizza	15.152 ^a	.916
Chicken	27.325 ^a	.290	Fried Potato	24.147 ^a	.453
Turkey Meat	21.185 ^a	.448	Kunafa, Chocolate, Toffee	11.253 ^a	.794
Shawarma	12.951 ^a	.910	Potato Chips, Salted Biscuits	42.557^a	.011
Hamburgers	27.629 ^a	.276	Milk	22.724 ^a	.536
Fresh Fish	21.398 ^a	.615	Juice	16.494 ^a	.869
Canned Tuna	30.963 ^a	.155	Fresh Juice	27.737 ^a	.425
Lamb Meat	32.305 ^a	.120	Cola	22.266 ^a	.563
Fruits	43.978^a	.002	Tea	24.723 ^a	.421
Tomato	26.907 ^a	.309	Power drink (XL)	20.463 ^a	.670
Cucumber	27.009 ^a	.304	Water	35.578 ^a	.908
Lettuce, ..	40.141^a	.021	Vitamins	9.064 ^a	.431
			Do you usually drink or eat while you are watching TV	10.092 ^a	.343

Chapter V

Discussion

Introduction

This chapter includes a discussion of the results regarding the prevalence of overweight /obesity and influencing factors ; socio-demographic characteristics, eating habits, physical activity among male school children in the fourth, fifth and sixth grade in UNRWA schools in Nablus city.

5.1. Prevalence of obesity among the students in Arab countries

The prevalence of overweight and obesity among children aged 9-11 years found in this study was 23.0 % and 12.6% respectively. In addition, 18.7% were underweight and 45.7 % of the remaining sample was at a normal weight (neither underweight nor overweight).

In contrast, this result was different from other studies in the nearer countries in Jordan, Khader et al.,(2009) study found the prevalence of overweight among male Jordanian children aged 6-12 years was 8.85% and 5.6% were obese.

Isaiah., (2009) studied the prevalence of overweight and obesity among male school children aged 6-12 year in Nablus city was found 13.3% were overweight and 7.9% were obese. Here, prevalence of overweight similar to this study result, whereas prevalence of obesity differs than this study result.

Socio-demographic factors of the students

5.2.1 Age

The mean weight of students aged 10- 11 years was significantly higher than the weight of students aged 9 years. The mean weight of the younger (9 years) subjects was within the reference normal range, whereas the mean weight of the elder (10-11 years) subjects was above the normal reference range. The mean of BMI among the elder subjects was significantly higher than the mean of the younger subjects. There was no a statistical relationship and significant association found between age among targeted children and overweight/obesity status.

5.2.3 Father's educational level.

According to students' fathers education level, in this study, 135 (48.6%) fathers had secondary education, 16 (45.7%) of their children were obese and 32 (50.0%) were overweight. 70 (25.2%) of fathers have completed preparatory education, 5 (14.3%) of their children were obese and 19 (29.7%) were overweight. 34 (12.2%) fathers who completed university education, 5 (14.3%) of their children were obese and 6 (9.4%) were overweight. Fathers who completed elementary education is 39 (14.0%), 9 (25.7%) of their children were obese and 7 (10.9%) were overweight. However, no statistical relationship was found between fathers' education levels and overweight/obesity status of their children. It was in contrast to the study by (Langendijk et al., 2003), which reported that fathers' education levels cause a significant difference between obese children and normal children.

5.2.3 Mother's education level.

According to students' mothers education level, 135 (48.6%) of mothers had completed secondary education, 20 (57.1%) of their children were obese and 27(42.2%) were overweight. Concerning mothers that completed just a preparatory stage was about 64 (23.0%), 5 (14.3%) of their children were obese and 24(37.5%) were overweight. 49 (17.6%) of mothers who completed university education, 5 (14.3%) of their children were obese and 11(17.2%) were overweight. But there was no statistical relationship found between mothers' education levels and overweight/obesity status of children. In contrast (Fatma et al., 2012) reported the lowest levels of parental education relating with the highest prevalence of their children obesity.

5.2.4 Father's and Mother's work

As shown in this study, students' fathers who work as a full time have the highest prevalence of overweight and obesity among targeted children; While the students whose fathers do not work have the lowest prevalence of overweight and obesity among targeted children, and the highest proportion of students whose mothers' do not work have the highest prevalence of overweight and obesity; While the students whose mothers' work as a full time have the lowest prevalence of overweight and obesity among targeted children.

But there was no statistical relationship was found between a father's and mother's work and overweight/obesity status among targeted children. In contrast (Thanh et al., 2008) study there was a statistical relationship found between father's and mother's work and overweight /obesity status of their children.

5.2.5 Child siblings

As shown in this study, the highest proportion of students who have 4-7 siblings have the highest prevalence of overweight and obesity among targeted children, however

There was no a statistical relationship found between child siblings and overweight/obesity status of among targeted children. in contrast (Karaçam et al., 2011) study indicated the prevalence of overweight and obesity among 460 primary school children aged 8-11 years in Aydin-Turkey was found to be 13.7% and 12.8% respectively, that was correlated with an increased number of family members.

5.2.6. Family income

According to monthly family income in this study, the researcher divided income into 4 categories according to the ministry of economy of Palestine; firstly, family income less than 1000 shekels, secondly from 1000 to 1499 shekels, thirdly of 1500-1999 and finally more than 2000 shekels. This measurement scale used for the targeted UNRWA school children. The highest proportion of students who's their family income was less than 1000 NIS have the highest prevalence of overweight and obesity, while the students who's family's income was equal or more than 2000 NIS have the lowest prevalence of overweight and obesity In this study there was no statistical relationship found between family income and overweight/obesity status of children. In contrast (Wang et al., 2002) study indicated the excess weight gain in children was reported to be more prevalent among lower income families.

5.2.7. Place of residence

According to place of students' residence was distributed as: 236 (84.8%) children who lived in camps, 35(14.8%)students of those children were overweight and54 (22.8%) were obese. 38 (13.6%) students lived in the City, 4(10.5%) students of them were overweight and6 (15.7%) were obese, just 4(1.4%) students who lived in the

village, these students didn't have any prevalence of overweight or obesity. In this study there was no statistical relationship found between place of residence and overweight/obesity status of children.

5.3. Eating habits

This paper discusses the students' responses on the topic of the food quality, and how they eat it, which includes Vegetables, Fruits, Legumes, Meat and Fish, Milk, and other Beverages.

The importance of food quality is well known today since it is determined by the level of health. The international and regional review of literature which is interested in this topic notes that the extent of the impact that different kinds of foods have on health, and benefits of certain foods. In contrast, there are other types of foods which have detrimental effects on health.

It was found that all students eat bread every day, where 86.7% of students ate Bread 1-4 times a day, and the reason is that bread is the major component of meals in our society. It is presented with most types of food and meals since it is rich in calories. Although the majority of students eat Bread every day, statistics show that there is no connection between students who eat Bread and overweight and obesity status. The cause may be attributed to the students who eat Bread may eat small amounts, for example a student who eat Bread four times a day, may eat half a loaf each time which means he eats two loaves per day.

When considering other foods, which are no less important than Bread and especially some types of Legumes, the highest percentage of students are dealing with Chickpeas per day and per week, followed by the Beans and Lentils. Peas have a low percentage

and it is known that legumes provide the body with Iron and Protein in addition to Vitamins (B), the elements of Zinc and Magnesium. Thus eating these foods is important on a daily basis and in proportionate quantities with age. The reason behind the students' eating of Chickpeas and horse Beans more than other Legumes is that the horse Beans and Chickpeas are cheap and Hummus is also an essential ingredient for Falafel that the student likes to eat in the form of Sandwiches. In addition, the breakfast meal which includes Hummus and olive oil is a tradition for Palestinian families. Although a significant proportion of the students eat horse-beans or Chickpeas, but there is no statistical relationship was found between students who eat Chickpeas or horse Beans and overweight/obesity status. The reason may be that students who eat Chickpeas or horse-Beans may feel fuller faster than other foods and furthermore as it is vegetarian proteins which have low calories.

The Lentil is a famous Arab meal, cooked in different ways and forms, including Soup and that with Rice. It is known in Palestinian proverbs as the Meat of the poor since Palestinians live in difficult situations that forced many families to replace Meat with Lentils. In spite that the percentage of students who eat Lentils is good; statistics shows no connection between students who eat Lentils and overweight/obesity status. The reason behind this may be that students eat Lentils without Bread or Rice, which contains fewer calories than with Bread or Rice

When considering the ratios of Dairy product are completely different matter, where there was only 27.8% of students eating Dairy products one to twice per day, this ratio is exceedingly low, especially when we know the importance of Milk and Dairy products in providing the needed calcium for growth. These ratios indicate low food and health awareness; whether for students or their parents, maybe the taste of Dairy

is unpleasant among students. Statistics show no connection between students who eat Dairy products and overweight /obesity status.

When comparing the types of Meat that students eat, which reached (73.3%) of students who eat Chicken daily or weekly. Chicken contains nutritional benefits such as protein, which helps to build the body. This is a good indicator of healthy nutrition rich with protein which is considered as compensation for other kinds of Meat such as Lamb or Veal which are expensive in comparison to Chickens, so families resort to buying Chicken which is cheaper than other types of Meat. Chicken is included in the main meals in our society. Canned Fish is cheap and accessible to everyone, so it became a substitute for the other kinds of Meat. 16.2% of students who do not eat Lamb Meat and 30% of students who eat Lamb Meat 1-3 times monthly, this comes down to high prices of this food. Despite the fact that a significant proportion of students eat Chicken and Canned Fish (Sardines or Tuna) statistics don't show any connection between students who eat Meat or Canned Fish and overweight/obesity status.

It is also noticeable that the daily or weekly eating of Fresh Fish is almost 37.6%, Fish contain nutritional benefits such as fatty acid (omega 3) in addition to being a source of low fat protein and iodine, which works on the prevention of thyroid disease. Eating Fish consistently leads to lower blood pressure, prevents blood clots and heart attacks as well as reducing Triglyceride group. The statistics in this study shows that there is no relationship between students who ate fresh Fish and overweight/obesity status.

Fresh fruit, Tomatoes, Cucumbers and other fresh Vegetables, which provide the body with fiber, minerals and vitamins, as well as Water should be eaten/drunk at least once

a day, and the researcher attributes this to the availability of these Fruits and Vegetables, especially Cucumbers and Tomatoes which are used in many meals. Although cooked vegetables in meals such as Stew and Stuffed vegetables with Meat have high percentages of compared to other Vegetables, such as Hibiscus, Watercress and Dandelion. Despite the high percentage of students who eat fresh Fruits and Vegetables, statistics show no relationship between these food and overweight/obesity status.

From looking at the students' answers on French fries, Pizza and Macaroni, one notes that there are convergent ratios for all these foods which are approximately half of the students. We know the bad effects of fried Potatoes on health such as increasing the percentage of bad cholesterol and increasing obesity. Eating a lot of these foods may affect eating other healthy foods. Despite the percentage of students who eat French fries, Pizza and Macaroni being high, statistics show no relationship between students who eat these foods and overweight and obesity status. The reason may be that students who eat these foods do not eat large quantities because these foods are containing high calories.

It is clear that the highest percentage that follows drinking Water is drinking Tea and Milk. Despite the benefits of drinking Tea, which contains antioxidants and stimulant substances such as Caffeine, other studies show the negative influence of drinking Tea on the intestinal absorption of iron. Yet Tea is considered to be a popular drink, which is an unhealthy habit, statistics show a relationship between students who drink Tea, and overweight and obesity status, the students may be drinking Tea with high amounts of sugar which increases to contain the drink high calories.

Sweet drinks can cause a range of problems including: excess weight gain, tooth erosion and decay, small appetite, picky eating, change in bowel habits in this study the highest prevalence of students drink Juice once to two times per day, 31.4% from obese students and 25.0% from overweight students drink Juice once to two times per day, statistics show a relationship between students who drink juice, and overweight and obesity status, this may be reason juices are cheap and fits with the daily student's expense.

The importance of milk is obvious on body building and proper growth, and certainly it is more beneficial than Tea, the highest prevalence of students drink Milk once to two times per day. statistics show no relationship between students who drink Milk and overweight and obesity status. The percentage of students who drunk drinks that contain Soda is high, and many studies have confirmed the bad effects of Fizzy drinks which lead to osteoporosis, obesity and ulcers. The percentage of students who don't drink power drinks such as XL was 84.5%. However, statistics show no relationship between these drinks and overweight/ obesity status; this may be reason power drinks are expensive and exceed the daily expense of the student.

It was found that 61% of the students like to eat Chips and Crackers every day, 27.1% like eating salt Chips and Biscuit per week, 36.1% like to eat Sweets Kunafa, Toffee, Chocolate every day and 29.7% like to eat Sweets and Chocolate every week.

Kunafa means a soft cheese cooked between two layers of orange shredded pastry served with sugar syrup "Qatter", Nablus is the famous city of its kunafa and sweets by the hand of experienced team and fine material.

Since most students like to eat salt Chips, Biscuits, show a relationship between students who eat these foods and overweight and obesity status. The reason behind

these foods with delicious flavors are cheap and available in all shops and in school canteens, whereas there was no relationship between students who eat sweets Kunafa, Toffee, Chocolate and overweight and obesity status.

The percentage of students with (yes) answers on the habit of watching TV while eating or drinking were approximately a quarter, and the percentage of students' with (no) answers was approximately three quarters. Yet, the statistics show not relationship between the students who watch TV while drinking or eating and overweight and obesity.

5.4. Physical activity

Here we will discuss students' answers on questions related to the topic of physical activity during school, or outside, and habits regarding infrequent physical activity and its impact on overweight or obesity.

According to the students' answers the percentage of students who attend sports classes once a week is (2.9%) and the rest of the students attend tow class or more, this is a normal and predictable result because the UNRWA schools allocate tow class a week only and most of the student's attend tow class per week.

Since the classrooms are overcrowded at a rate of 28 students in each class and the class time is 40 minutes, this class will not be enough for students to meet their physical activity needs. On the level of physical activities outside of school, the students' answers indicate that the highest level of participation in physical activities was outside school in informal activities. Statistics show no relationship between students who do not participate in physical activities and overweight and obesity status.

When discussing questions related to manifestations of lack of physical activity during the day such as watching television, video, DVD, internet and computer use, we note that the decrease in the proportion of watching and using computers and the internet in school days compared with the days of holidays and vacations at all levels. When comparing the phenomena of watching TV, video, DVD, computers and the internet we note that the highest percentage were watching TV, video and DVD, and the lowest rate were using computers and the Internet, both in school days or holidays. The researcher attributes these ratios to the time available on holidays to watch TV being mostly longer than time available for the student on school days, in addition parents follow-up on their children during the school days in terms of daily study and homework, which reduces the percentage of time spent on the TV and computer during school days and compensates for holidays and vacations. We must also note that the proportion of time spent watching TV, video and DVD in addition to the use of computers and the Internet were mostly no more than two hours a day for more than half of the students, hence we infer a variety of reasons which could limit the students' physical activities interests including: the lack of appropriate places, the lack of incentives for practicing physical activities are various, as well as the presence of a dominating culture in a society which does not encourage physical activity. Yet statistics shows no relationship between students who have a lack of physical activity and overweight and obesity status.

5.5. The relationship between eating habits and socio-demographic characteristics.

Age of student's 9-11 year was positively associated with frequency of intake of Macaroni, Stew, Mahashi, Maqluba, Ozzy, Vegetables on the tray, Vegetable fried except Potatoes; indicate that the students at this age stage tend to eat cooked vegetables and Macaroni.

30.3% of children lived in camps eat fruits daily, 47.2% of students lived in Nablus city eat fruits daily whereas 83 % of students lived in village eat Fruits daily, this indicate that the students who lived in camps eat Fruits daily less than other students are living in Nablus city or village. In this study there was a statistical relationship between place of residence and students who eat Fruits. 31.6% of fathers were finished primary level of education their children drinks Cola daily whereas 20.6% of fathers were finished university level of education their children drinks Cola daily this indicate that the fathers who finished university level of education their children, there was a statistical relationship between fathers education levels and students who drinks Cola. 31% of mothers were finished primary level of education, their children drink or eat while watching TV, whereas 20.4% of mothers were finished university level of education their children drink or eat while watching TV this indicate that the mothers who finished university level of education their children drink or eat while watching TV less than children whose mothers finished primary level of education, there was a statistical relationship between mothers education levels and students drink or eat while watching TV.

36.7% of mothers were finished university level of education, their children eat

Chicken two to three times weekly, whereas 13.8% of mothers were finished primary level of education their children eat Chicken two to three times weekly this indicate that the mothers who finished university level of education their children eat Chicken two to three times weekly more than children whose mothers finished primary level of education, there was a statistical relationship between mothers education levels and children who eat Chicken.

37.5% of mothers were finished primary level of education, their children do not drink Milk, whereas 44.9% of mothers were finished university level of education their children drink Milk daily, this indicate that the mothers who finished university level of education their children compare with children whose mothers finished primary level of education, there was a statistical relationship between mothers education levels and children drink Milk. 42.6% of children eat Fruits daily, whose fathers working as a full time work, whereas 30.2% of children eat Fruits daily whose fathers are not working, this indicate that the fathers who not work their children eat fruits daily less than children whose fathers working as a full time work, there was a statistical relationship between children father's work and children eat Fruits.

41.7% of children eat Chicken two to three times weekly, whose mothers working as a full time work, whereas 26.4% of children eat Chicken two to three times weekly whose mothers are not working, this indicate that mothers who not work their children eat Chicken two to three times weekly less than children whose mothers working as a fulltime work, there was a statistical relationship between children mother's work and children eat Chicken. 45.8% of children eat fried Potato two to three times weekly, whose mothers working as a full time work, whereas 25.2% of children eat fried Potato two to three times weekly whose mothers are not working, this indicate that mothers who not work, their children eat fried Potato two to three times weekly

more than children whose mothers working as a fulltime work, there was a statistical relationship between children mother's work and children eat fried Potato.

children who have a number of siblings below three eat Mallow, Spinach, Canned Tuna Fish,Lamb Meat two to three times weekly less than children who have a number of siblings above seven eat Mallow, Spinach, Canned Tuna Fish,Lamb Meat two to three times weekly, there was a statistical relationship found between children who eat Mallow, Spinach, Canned Tuna Fish,Lamb Meat and their sibling's number. 2% of children eat Pizza two to three times weekly, the number of their siblings below three, whereas 9.3% of children eat Pizza two to three times weekly, the number of their siblings above seven, this indicate that children who have siblings below three eat Pizza two to three times weekly less than children who have siblings above seven eat Pizza two to three times weekly, there was a statistical relationship between children who eat Pizza and their sibling's number.

The children whose families income below 1000 NIS eat Lettuce, Carrot,Mallow, Spinach two to three times weekly less than children whose families income above 2000 NIS eat Lettuce, carrot,Mallow, Spinach two to three times weekly, there was a statistical relationship between children who eat Lettuce, Carrot,Mallow, Spinach and children family's income. The children whose families income below 1000 NIS eat Fruits, Potato Chips, salted Biscuits one to two times per day less than children whose families income above 2000 NIS eat Fruits, Potato Chips, salted Biscuits one to two times per day, there was a statistical relationship between children who eat Fruits, Potato Chips, salted Biscuits one to two times per day and children families income.

Chapter VI

Conclusions and Recommendations

Conclusions

The objective of the study was to determine the prevalence of obesity among students in grades 4–6 in male UNRWA schools in Nablus city. In addition, influencing factors (socioeconomic status, eating habits and physical activities). This study attempted to calculate the prevalence of overweight and obesity among targeted children. And to identify the relationship between influencing factors and overweight /obesity status.

The subjects of the study were 278 students age 9-11 years old in male UNRWA schools in Nablus city. Data was collected on the 10th September 2014, all of the students' weights and heights were measured and followed standard procedure, after that a questionnaire was answered by each student to assess three factors: sociodemographic, eating habit, physical activities and the data input was completed by using statistical software.

Using Growth chart among boys 2-20 years old CDC (2009), this study revealed that the prevalence of overweight and obesity among students grade 4-6 in male UNRWA schools in Nablus city was 23 % and 12.6% respectively. Sociodemographic factors such as parent's education, parent's work, child siblings, family income didn't have any significant relationship with overweight or obesity among targeted children.

Regarding place of students residency, the percentage of overweight and obesity among students living in camps higher than those are living in village or city. There was a significant statistical association between students residency place and overweight/obesity status.

Eating habit such as number of meals per day, Bread, Dairy products, Legumes, Meat, Fruits, Vegetables, cooked Vegetables, fast food and Beverage consumption did

not have any significant association with overweight/obesity status. There was a significant statistical association between students who eat Potato Chips, salted Biscuits, drink Tea, Juice and overweight/obesity status. Meanwhile, there is no statistical relationship between students who watch TV while eating or drinking and overweight/obesity status.

Regarding to physical activities, more than 90% played sports such as football, running, badminton and swimming every week, the percentage of students reported to join in with passive entertainment activities in vacation days for 1-2 hours per day 28.6% were obese and 34.4% were overweight. There is no significant association was found between physical activities and overweight/obesity. The average time spent for passive entertainment activities and watching TV was not significant among overweight and obese children.

The relationship between socio-demographic characteristics and eating habits, there is a statistical relationship between father's work, place of residence and students who eat Fruits. In addition to a statistical relationship between fathers education levels and students who drink Cola. Whereas a statistical relationship between mothers education levels and students who drink Milk, drink or eat while watching TV.

On the other hand there is a statistical relationship between children mother's work and children eat Chicken, fried Potato. there was a statistical relationship between children who eat Mallow, Spinach, Canned Tuna Fish, Lamb Meat, Pizza and their sibling's number. finally, there is a statistical relationship between children who eat Lettuce, Carrot, Mallow, Spinach Potato Chips, Fruits, salted Biscuits and children family's income.

Recommendations

1. Additional studies in Palestine to stand on the obesity and underweight problem among school children.
2. The formation of a national committee to combat malnutrition (underweight, overweight and obesity) in Palestinian society to be represented by the relevant authorities.
3. Raise awareness and health promotion regarding the quality and quantity of food intake and physical activity among Palestinian children.
4. Activating the role of the media with regard to the problems of nutrition and lifestyle.
5. The adoption of specific criteria for food and healthy meals for children.
6. Allocating budgets suitable for health education programs among children.
7. Health Care provides an educational service consulting in schools and in places frequented by students.
8. Additional a system for providing healthy meals (such as cooked food, vegetables, fruit) for students within the school canteens.
9. Family based interventions should encourage to maintain healthy dietary habits.
10. Further comprehensive research is required to study the lifestyle of the families of obese children and how to prevent obesity.
11. Provide the appropriate environment for practicing sports activities in the Palestinian society, such as increasing green spaces and the creation of enclosed lounges.

Appendix number (A)

Wt..... Ht..... BMI.....

Questionnaire

Dear students please answer the question below following the study supervisor instructions as precise as possible and don't hesitate to ask for any explanation in case you don't understand any of these questions. (This is not an exam therefore the information you'll deliver is totally secret)

First: demographic information

1	How old are you?
2	Current living place (please mention the city/the village/ the city)
3	The name of the school you studied in? A. Nablus elementary school for boys C. Blatah elementary school for boys E. Blatah preparatory school for boys B. Asker elementary school for boys D. Asker communal school for boys F. Asker preparatory school for boys G. elementary School of Number One for
4	What class are you in? A. Fourth B- Fifth C. Sixth
5	Your father educational level A. Elementary B. preparatory C. Secondary D. University level
6	Your mother educational level A. Elementary B. preparatory C. Secondary D. University level
7	Is the Father? A. Work B. sometimes Work C. does not work
8	Is the mother? A. work B. sometimes work C. does not work
9	How many brothers and sisters do you have?calculate yourself A.Less than three B. 4-7 siblings C. more than 7
10	How much your family's total income per month? A. Less than 1000 shekel B. from 1000 to 1499 shekel C. from 1500 to 2000 shekel D. more than 2000 shekel.

Second: dietary habits

11	Define meals that you usually eat(you can choose more than one) a. breakfast b. lunch c. dinner
12	Do you eat or drink through in the period between the main meals? A. sandwiches E. crackers, chips, salt biscuits B. fruit F. cola, juice C. vegetables G. nothing D. sweets, biscuits, chocolate H.something else.....
13	Do you eat your main meal with your family members around one table? A. daily B. sometime C. never

Types of food

Bread	
14	How many times do you eat bread? A. a time a day B. to times a day C. three times a day D. four times a day E. five times a day F. six times a day

Milk and Cheese (dairy products)

15 How many times do you eat dairy products (please draw X on the choice which is applied to you)

	Daily			Weekly			Monthly	Rarely and may be never
	More than 4 times	3 to 4 times	1 to 2 times	4 to 6 times	2-3 times	One time	1 to 3 times	
Drained yogurt, plain yogurt, cheese.....								

Legumes

16 How many times do you eat legumes? (please draw X on the choice which is applied to you)

	Daily			Weekly			Monthly	Rarely and may be never
	More than 4 times	3 to 4 times	1 to 2 times	4 to 6 times	2-3 times	One time	1 to 3 times	
Lentils								
Chickpeas								
Beans								
Peas								

Meat and Fish

17 How many times do you eat of the following meat and fish? (please draw X on the choice which is applied to you)

	Daily			Weekly			Monthly	Rarely and may be never
	More than 4 times	3 to 4 times	1 to 2 times	4 to 6 times	2-3 times	One time	1 to 3 times	
Chicken								
Turkey								
Shawarmas								
Burgers								
Fresh fish								
Canned fish (Tuna)								
Veal								

Fruit

18	How many times do you eat fruit? (please draw X on the choice which is applied to you)						
	Daily			Weekly			Monthly
	More than 4 times	3 to 4 times	1 to 2 times	4 to 6 times	2-3 times	One time	1 to 3 times
fresh Fruit							Rarely and may be never

Fresh vegetables

19	How many times do you eat vegetables? (please draw X on the choice which is applied to you)						
	Daily			Weekly			Monthly
	More than 4 times	3 to 4 times	1 to 2 times	4 to 6 times	2-3 times	One time	1 to 3 times
Tomato fresh or in Salad							Rarely and may be never
Cucumber fresh or in Salad							
Other fresh vegetables (fresh or in Salad) Lettuce, Carrot, Bell peppers...							

Cooked vegetables

20	How many times do you eat cooked vegetables? (please draw X on the choice which is applied to you)						
	Daily			Weekly			Monthly
	More than 4 times	3 to 4 times	1 to 2 times	4 to 6 times	2-3 times	One time	1 to 3 times
Cooked vegetables (such as Stew, Mahashi, Maqluba, Ozzy, Vegetables in the tray, Vegetable fried except Potatoes)							Rarely and may be never
Mallow, spinach							
Hibiscus, Dandelion, Watercress							

Other foods

21	(please draw X on the choice which is applied to you)							
	Daily			Weekly			Monthly	
	More than 4 times	3 to 4 times	1 to 2 times	4 to 6 times	2-3 times	One time	1 to 3 times	Rarely and may be never
Macaroni								
Pizza								
Fried potato								

Sweets /salted(citrus)

22	How many times do you eat of sweets and citrus? (please draw X on the choice which is applied to you)							
	Daily			Weekly			Monthly	
	More than 4 times	3 to 4 times	1 to 2 times	4 to 6 times	2-3 times	One time	1 to 3 times	Rarely and may be never
Kunafa, chocolate, toffee,								
Potato chips, salted biscuits ...								

Drinks

23	How many times do you drink of the followings? (please draw X on the choice which is applied to you)							
	Daily			Weekly			Monthly	
	More than 4 times	3 to 4 times	1 to 2 times	4 to 6 times	2-3 times	One time	1 to 3 times	Rarely and may be never
Milk								
Juice								
Fresh Juice(homemade)								
Cola								
tea								
XL Power drink								
water								

Do you usually drink or eat while you are watching TV?

A. yes B. no

25	Do you currently use syrup or pills vitamins? A. daily B. sometimes C. never
----	---

Third: physical activity the activity which increases the heart beats

26	How do you go to the school? A. by walking B. by public transportation C. by private car
27	How many times do you have physical education classes per week?
28	How many times do you participate in the physical education classes per week?.....
29	How many times do you participate in a non-curriculum sport activity in school? (for instant, before the classes or in the break) A. 1 to 2 times B. 3 to 4 times C. 5 to 6 times D. I don't participate E. something else
30	How many times do you participate in physical education activities out of the school like (swimming, martial art trainings, basket ball or football teams..) A. daily B. 3 to 4 times a week C. once a week D. don't participate E. something else
31	How many times do you practice sport in an unofficial places (in the street, on unofficial playground..) A. Daily B. 3 to 4 times a week C. once a week D. don't participate E. something else
32	What kind of sport do you train ?
33	How many hours a day do you watch TV (in school days)? A. I don't watch TV B. less than an hour C. from 1 to 2 hours D. from 3 to 5 hours E. more than 5 hours
34	In vacations, how many hours do you pass watching TV? A. I don't watch TV B. less than an hour C. from 1 to 2 hours D. from 3 to 5 hours E. more than 5 hours
35	Do you have an internet access at your home? a. yes b. no
36	In school days, how many hours do you pass playing computer games or surfing the internet? A. I don't play PC games or surf the internet B. less than an hour C. from 1 to 2 hours D. from 3 to 5 hours E. more than 5 hours
37	In vacations, how many hours do you pass before the computer playing or surfing the internet? A. I don't B. less than an hour C. from 1 to 2 hours D. from 3 to 5 hours E. more than 5 hours

عزيزي الطالب الرجاء الإجابة على الأسئلة التالية متبعاً التعليمات من المشرف على دراسته بأكبر دقة ممكنة، لا تتردد في توجيه أي إستفسار في حال عدم فهمك لأي من الأسئلة. هذا ليس امتحان والمعلومات التي ستدلي بها ستكون سرية.

أولاً: المعلومات الديموغرافية

1	كم تبلغ من العمر ؟ A. 9 سنوات B. 10 سنوات C. 11 سنة
2	مكان السكن الحالي (الرجاء ذكر اسم القرية أو المدينة أو المخيم).....
3	ما إسم المدرسة التي تدرس بها ؟ A. مدرسة نابلس الأساسية للبنين B. مدرسة عسكر الأساسية للبنين C. مدرسة عسكر الأساسية للبنين D. مدرسة بلاطه الأساسية للبنين E. مدرسة عسكر المجتمعية للبنين F. مدرسة بلاطه الأعدادية للبنين G. مدرسة رقم واحد الأساسية للبنين
4	ما هو صفك الدراسي ؟ A. الرابع B. الخامس C. السادس
5	ما هو المستوى التعليمي للأب ؟ A. الإبتدائي B. الإعدادي C. الثانوي D. الجامعي
6	ما هو المستوى التعليمي للأم ؟ A. الإبتدائي B. الإعدادي C. الثانوي D. الجامعي
7	هل الأب؟ A. يعمل B. يعمل أحيانا C. لا يعمل
8	هل الأم ؟ A. تعمل B. تعمل أحيانا C. لا تعمل
9	ما هو عدد الأخوة الذكور والإناث: احسب نفسك: A. أقل من ثلاث B. من 4-7 اخوه C. أكثر من 7
10	كم دخل أسرتك الشهري؟ A. أقل من 1000 شيكل B. من 1000 حتى 1499 شيكل C. من 1500 حتى 1999 شيكل D. من 2000 شيكل فأكثر

ثانياً: العادات الغذائية

11	حدد الوجبات الرئيسية التي تأكلها عادة (يمكن وضع دائره على أكثر من خيار) A. الفطور B. الغداء C. العشاء
12	هل تأكل أو تشرب بين بين الوجبات الرئيسية ؟ A. ساندويشات B. فواكه C. خضار D. حلويات، بسكويت، شوكولاته E. شيبس، بيجلا، بسلي، بسكوت مالح D. كولا، عصير G. لا شيء H. غيره، حدد.....
13	هل تأكل وجبتك الرئيسية مع افراد العائلة ؟ A. يومياً B. أحياناً C. لا أبداً

أنواع الأغذية

الخبز	كم مرة تأكل خبز ؟
14	A. مرة يومياً B. مرتين يومياً C. 3 مرات يومياً D. 4 مرات يومياً E. 5 مرات يومياً F. 6مرات يومياً G. أكثر من 6مرات H. غيره حدد.....

الفواكه

كم مرة تأكل الفواكه الطازجة؟ (الرجاء وضع X في المربع الذي ينطبق عليك)

18

تأقرا، ابقا	شهرقا	اسبوعقا		قومقا			
	3-1 مرة	مرة	3-2 مرات (قوم بعد قوم)	4-6 مرات تقربقا قومقا	2-1 مرة	من 3-4 مرات	اكثر من 4 مرات
							فواكه طازجة

الخضار الطازجة

كم مرة تأكل من أنواع الخضار الطازجة التالية؟ (الرجاء وضع X في المربع الذي ينطبق عليك)

19

تأقرا، ابقا	شهرقا	اسبوعقا		قومقا			
	3-1 مرة	مرة	3-2 مرات (قوم بعد قوم)	4-6 مرات تقربقا قومقا	2-1 مرة	من 3-4 مرات	اكثر من 4 مرات
							البندوره حبه او قو السلطة
							الخيار حبه او قو السلطة
							خضار طازجة اخرى (حب او قو السلطة) جزر، قفس، قفلل حلو، افوكادو، ملفوف

الخضار المطبوخة

كم مرة تأكل من أنواع الخضار المطبوخة التالية؟ (الرجاء وضع X في المربع الذي ينطبق عليك)

20

تأقرا، ابقا	شهرقا	اسبوعقا		قومقا			
	3-1 مرة	مرة	3-2 مرات (قوم بعد قوم)	4-6 مرات تقربقا قومقا	2-1 مرة	من 3-4 مرات	اكثر من 4 مرات
							خضار مطبوخة (مثل قحني، محاشق، مقلوبه، اوزق، خضار قو صقنقه، خضار مقليه غير البطاطا...)
							الملوخقه، السبانخ
							الخقبره، الهنقبه، القرجقر،

الأطعمة الأخرى

كم مرة تأكل من أنواع الأطعمة التالية (الرجاء وضع X في المربع الذي ينطبق عليك)

21

تادرا، ايدا	شهريا			اسبوعيا			يوميا			
	3-1 مرة	مرة	3-2 مرات (يوم بعد يوم)	6-4 مرات تقريبا يوميا	2-1 مرة	من 4-3 مرات	اكثر من 4 مرات			
										المعكرونة
										البيتزا
										البطاطا المقلية

الحلويات والمواالح

كم مرة تأكل من أنواع الحلويات والمواالح التالية (الرجاء وضع X في المربع الذي ينطبق عليك)

22

تادرا، ايدا	شهريا			اسبوعيا			يوميا			
	3-1 مرة	مرة	3-2 مرات (يوم بعد يوم)	6-4 مرات تقريبا يوميا	2-1 مرة	من 4-3 مرات	اكثر من 4 مرات			
										حلويات، شكولاته جاتوه، كنافه، راس العبد، بسكوت، ملبس
										رقائق البطاطا والبسكويت (شيبس، بسلي، بيجله)

المشروبات

كم مرة تشرب من المشروبات التالية (الرجاء وضع X في المربع الذي ينطبق عليك)

23

تادرا، ايدا	شهريا			اسبوعيا			يوميا			
	3-1 مرة	مرة	3-2 مرات (يوم بعد يوم)	6-4 مرات تقريبا يوميا	2-1 مرة	من 4-3 مرات	اكثر من 4 مرات			
										حليب
										عصير جاهز (مصنع)
										عصير طبيعي (بيتي)
										كولا
										شاي
										ماء
										مشروبات الطاقه مثل ...XL

24	هل تاكل او نشرب عادة وانت تشاهد التلفاز؟ A. نعم. B. لا
25	هل تاخذ حبوب او شراب فيتامينات الان؟ A. يوميا. B. احيانا. C. لا، ابدا. D. اأخذ مقويات ولكن لا اعرف ماهي

ثالثاً: النشاط البدني: هو النشاط الذي يزيد عدد دقات القلب ويجعلك تشعر بالدفء والتعرق.


26	كيف تذهب الى المدرسه؟ A. مشيا علنا لأقدام. B. بالموصلات العامة. C. سيارة خاصة
27	كم عدد حصص الرياضة التي تاخذها بالاسبوع؟.....
28	كم مره تشارك في حصص الرياضة في الاسبوع؟
29	كم مرة تشارك في لعب الرياضة او النشاط البدني وقت الفراغ في المدرسة (مثلا قبل الدوام او بعده او في الفرصة)؟ A. 5-6 مرات أسبوعيا B. 3-4 مرات أسبوعيا C. مره مرتين أسبوعيا D. لا أشارك E. غيره، حدد.....
30	كم مرة تشارك في لعب الرياضة أو النشاط البدني خارج المدرسة في فرق رسمية أو دروس رسمية (مثلا فريق كرة القدم، فريق كرة السلة، تدريب كراتيه، دبكة، سباحه، كشافه.... الخ)؟ A. يوميا B. 3-4 مرات أسبوعيا C. مره مرتين أسبوعيا D. لا أشارك E. غيره، حدد.....
31	كم مرة تشارك في ممارسة الرياضة أو النشاط البدني خارج المدرسة في نشاطات غير رسمية (مثلا اللعب مع الأصدقاء في الشارع أو في ساحات أخرى)؟ A. يوميا B. 3-4 مرات أسبوعيا C. مره مرتين أسبوعيا D. لا أشارك E. غيره، حدد.....
32	ما نوع الرياضة أو الانشطة الجسميه التي تلعبها:.....
33	كم ساعة تقضي في اليوم في أيام المدرسة وأنت تشاهد التلفاز؟ A. لا أشاهد التلفاز B. أقل من ساعة C. 1-2 ساعة D. 3-5 ساعات E. أكثر من 5 ساعات
34	كم ساعة تقضي في اليوم في أيام العطل والجمع وأنت تشاهد التلفاز؟ A. لا أشاهد التلفاز B. أقل من ساعة C. 1-2 ساعة D. 3-5 ساعات E. أكثر من 5 ساعات
35	هل لديكم إنترنت في البيت؟ A. نعم. B. لا
36	كم ساعة تقضي في اليوم في أيام المدرسه امام الكمبيوتر (العاب الكمبيوتر والإنترنت)؟ A. لا أستعمل الكمبيوتر أو الإنترنت B. أقل من ساعة C. 1-2 ساعة D. 3-5 ساعات E. أكثر من 5 ساعات
37	كم ساعة تقضي في اليوم في أيام العطل الاسبويه امام الكمبيوتر (العاب الكمبيوتر والإنترنت)؟ A. لا أستعمل الكمبيوتر أو الإنترنت B. أقل من ساعة C. 1-2 ساعة D. 3-5 ساعات E. أكثر من 5 ساعات

Appendix number (B)

Dr.Sumaya Sayej	Al-Quds University
Dr. Jamal Qaddumi	Al-Najah University
Dr.Maryam Tel	Al-Najah University
Dr. Ahmad Al-Aydi	Arab American University

Appendix number (C)

Al-Quds University
Faculty of Health Professions
Nursing & midwife Department
Jerusalem-Abu Dies



جامعة القدس
كلية المهن الصحية
دائرة التمريض والقبالة
القدس-أبوديس

التاريخ 2013/11/4
الرقم 2013/11/ 53

حضرة السيد معاوية أمير المحترم
بواسطة السيد حسن رمضان المحترم

الموضوع : الحصول على معلومات


تحية طيبة وبعد،،،

يقوم الطالب صالح محمد فرج ابو لفتح ورقه الجامعي 21212899 وهو طالب ماجستير تمريض الأطفال من جامعة القدس كلية المهن الصحية / دائرة التمريض والقبالة / ابوديس بجمع معلومات من مدارس الوكالة في محافظة نابلس للدراسة نسبة السمته لدى أطفال المدارس في الوكالة .

ملاحظة : الهدف من أخذ المعلومات هو هدف تعليمي بحث وستبتي هذه المعلومات تحت مسؤولية دائرة التمريض ولن يتم استخدامها لأي غرض آخر غير البحث.

الرجاء المساعدة

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Appendix number (D)

الدراسات العليا – تمرير الأطفال

نموذج موافقة ولي الأمر على مشاركة طفله في بحث علمي

• انا الطالب صالح أبو لفتح من جامعة القدس ،ماجستير تمرير الأطفال أقوم بعمل بحث بعنوان : نسبة انتشار زيادة الوزن والسمنة والعوامل التي ادت لهما لدى الأطفال البنين في المرحلة العمرية ٩-١١ سنة في مدارس نابلس التابعه لوكالة الخوت . كأحد متطلبات الدراسة في برنامج الماجستير ، ولغرض البحث العلمي فقط . (حيث سيتم قياس الوزن والطول) علما أن المشاركة في البحث هي أمر طوعي ويتطلب ذلك موافقة ولي أمر الطالب. وان جميع المعلومات التي سيتم الحصول عليها ستظل في سرية تامة بما فيها وزن الطالب واسمه ونتائج فحوصاته وان لا ضرر يترتب على المشاركة في هذا البحث.

وعليه فإذا كنت عزيزي ولي أمر الطالب موافقا على اشتراك طفلك في هذا البحث يرجى منك تعبئة النموذج التالي:

أنا الموقع أناه، ولي أمر الطالب..... أقر بموافقتي على اشتراك طفلي في البحث العلمي الموصوف أعلاه وعلى هذا أوقع .
اسم ولي أمر الطالب :.....
توقيع ولي أمر الطالب.....

Chapter VII

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