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PARENTS' PERCEPTIONS AND PARENTAL STRESS RELATED OBESITY OF CHILDREN IN UNITED ARAB EMIRATES

Salma Omar Sbait Al-Nuaimi

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STRESS RELATED OBESITY OF CHILDREN IN
UNITED ARAB EMIRATES**

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UNITED ARAB EMIRATES**

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**Thesis submitted in partial fulfillment of the
requirements for the degree of M.Sc in Community
Health Nursing**

**At
The Faculty of Graduate Studies
Jordan University of Science and Technology**

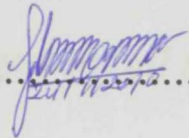
January, 2010

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By

Salma Omar Sbait Al-Nuaimi

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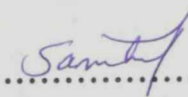
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January, 2010

DEDICATION

*To My Great Parents who have Raised me to be the Person I am
Today, for their Belief in me, Days full of Sacrifices, Donating,
Compassion, their unconditional Love, Support, Sacrifices and
Continuous Prayers*

*To My Sisters for their Supports and Encouragement all the time
being there when I need them Always*

*To My Brothers for their Supports and Encouragement all the
time*

*To My Sisters 'and Brothers 'Sons and Daughters for their find
Irresistible Love, Feel Affection for me*

*To all My Dearest Relatives and Friends for being there when I
need them most*

To all Emirati nurses

I Dedicate This Work

ACKNOWLEDGEMENTS

First of all, thanks goes for Allah for charitable, openhanded, generous and giving me the power to create this work. I would like to acknowledge the following people who supported me during the development, process and completion of this study. Sincere gratitude to my supervisors Dr. Basil Amarneh and Dr. Huda Gharaibeh for their endless support, encouragement, hared work and guidance throughout this entire thesis process and for believing in my abilities, for their distinguished advice, and leadership which is greatly regarded during thesis period, their contributions is greatly appreciated. Sincere gratitude to Dr Abdulhakem Okour and Dr Samiha Jarrah for their help and efforts in reviewing and reading this thesis, and their suggestions that enriched this work. Dr Muntaha Gharaibeh for her effort in reviewing reading and inspiration all the way to shape up Obesity Parental Perception scale and parental Stress Measurement Scale that developed in this thesis. Also I would like to thank my family, all friends, and colleagues who supported me during the thesis period, all Al Ain school nurses, Al Ain Ministry of Education employees, Shamsa Al Nuaimi and Abu Dhabi Health Services Company employees, who welcomed, helped and facilitated this work.

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PARENTS' PERCEPTIONS AND PARENTAL STRESS RELATED OBESITY OF CHILDREN IN UNITED ARAB EMIRATES

By

SALMA OMAR SBAIT AL-NUAIMI

ABSTRACT

Aim: This study aims to explore parents' perception of obesity in children and stress related to obesity during childhood period in Emirate of Abu Dhabi in United Arab Emirates.

Background: The prevalence of excess weight among children is increasing in both developed and developing countries. Overweight and obesity are leading cause of the most common health problems in children. The degree of parents' perception about their child's weight is likely to play a critical role in the development and management of childhood obesity. Greater parental perception and involvement is likely to encourage more active monitoring and controlling of child's dietary intake, and a greater inclination to seek treatment for an obese child.

Methods: A cross-sectional comparative descriptive design was utilized to collect the data from a convenience sample of 1097 parents of children from 37 government and private primary schools in Emirate of Abu Dhabi, Al Ain city, in United Arab Emirates.

Results: Nearly 35 % of parents were reported semi levels of obesity awareness, and most of the parents under estimated their children body weight, moreover parental stress level showed that about 32% of the parents had high parental stress. Around 70% of parents were very concerned about their child weight. There were a significant correlation between fathers ($r=0.140$, $p<0.001$) and mothers' age ($r=0.167$, $p<0.001$) with children BMI, also there are a correlation between fathers ($r=-0.075$, $p<0.05$) and mothers ($r=-0.080$, $p<0.01$) educational level and their children BMI, whereas there are no correlation between school category ($r=0.001$, $p>0.05$) or working mothers ($r=-0.015$, $p>0.05$) and children BMI. Parents showed high level of stress related their children' body weight status; parents' nationality and educational level effected their perception of obesity in children. Mothers showed higher stress than fathers due to their children weight status, parental stress levels were varied among the parents' nationalities and level of education, children genders has no effect on parental perception level or parental stress level.

Conclusion: Most of the parents perceive and aware of the causes of the obesity and its consequences in childhood, moreover most of the parents especially female parent had experienced psychological distress regarding their children body weight status more than fathers. The involvement and support of parents is essential to the success of any intervention aimed at prevention and management of obesity in young children as long as the parents has an adequate awareness and perception of obesity in childhood. Because Parents who are aware of and concerned about their child's weight might be willing to overcome the barriers and help their children maintain or achieve a healthy weight.

Key ward: Obesity, Perception, Stress, Parents, Children, United Arab Emirates.

CHAPTER ONE: INTRODUCTION

This chapter includes the background, significance information of the problem, the study purpose, research questions, conceptual definitions and operational definitions.

1.1 Background

The prevalence of excess weight among children is increasing in both developed and developing countries, but at very different speeds and in different patterns.⁽¹⁾ The overweight and obesity are leading cause of the most common health problem in children.⁽²⁾ The onset of obesity may occur at any age, and prevalence of overweight and obesity in young people is increasing rapidly in both developed and developing world.⁽³⁾ Childhood obesity is difficult to treat and is associated with both physical and emotional morbidity. Furthermore, obese children are more likely to become obese adults, and the morbidity, costs, and mortality from adult obesity are all enormous. Therefore, obesity prevention that begins early in life is an important approach to reducing the dramatic upward trends in obesity prevalence.⁽²⁾

However, with rapid social changes such as urbanization and modernization of lifestyle, and acculturation such as people arrivals from different cultures occurring in many of the Arab countries, the attitudes and behaviors of the younger generation in these countries are swinging more towards the Western values.⁽⁴⁾

United Arab Emirate (UAE) is an Arab Islamic country on the Arabian Peninsula, is a federation of seven emirates (Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al-Qaiwain, Ra's Al-Khaimah and Al-Fujairah) that was formed in 1971. Capital: Abu Dhabi, national day: 2 December, currency: Emirati Dirham (Dh or AED). Population: 4.488 million (est. 2007); 4.76 million (est.2008); 5.06 million (est. 2009), nationals: 864,000 (est.2007), non-

nationalS: 3.62 million (est. 2007), males: 3.08 million (est. 2007), females: 1.4 million (est. 2007), population under 15 years: 862,991 (est. 2007). Language: Arabic, religion: Islam; practice of all religious beliefs is allowed, school enrolment: 648.000 students in 1259 public and private schools (2007/2008) of which over half are female.⁽⁵⁾ With the advent of the oil and the arrival of expatriates from all continents of the world, UAE has witnessed a rapid social change especially in the last two decades. The shift from traditional to the modern lifestyle has resulted in many chronic diseases and health issues such as obesity in children. In addition the cultural transition, social change and globalization are having a complex influence on the eating attitudes and behaviors of the present young generation all over the world, and UAE seems to be no exception to this global phenomenon.⁽⁴⁾

Socio-economic and health Care changes in the UAE have influenced food consumption (i.e. less fruit and vegetables, more meat, poultry, sugar, and fat), whilst an increase in chronic diseases (e.g. cardiovascular disease, cancer, diabetes, hypertension, obesity) poses major health problems. A significant lack of physical activity among the UAE population was widely documented. Evidence that physical Inactivity was a factor linked to the high increase of obesity in UAE. Findings from the Emirates National Diabetes study indicate an ‘alarming number of children in the UAE (suffer) from obesity’ due to ‘fundamental health practices’ in the UAE, including the ‘complete collapse of physical activity’.⁽⁶⁾

During the past two decades the prevalence of obesity in children has increased worldwide. In the United States today, obesity in children and adolescents is increasingly prevalent, and some say that among adolescents it has reached epidemic proportions.⁽⁷⁾

Parental perceptions among European-American parents have shown that parents and their 5 year-old children share similar weight concerns, for example, they both desire

thinner body sizes. However, cultural differences may exist between perceptions of the majority of the European-American population and those of minorities (e.g., African-American and Hispanic) regarding ideal weights for their children. Recent studies have found that many minority parents underestimate the weight of their children.⁽⁸⁾

Of all U.S. children, 8.6 million are at risk for obesity, and almost 14 million are already obese.⁽⁹⁾ Of greatest concern is that the probability of childhood obesity persisting into adulthood increases from 20 % at age 4 to 80 % by adolescence.⁽¹⁰⁾ Rates of obesity have increased 2.3-fold to 3.3-fold over about 25 years in the USA, 2.0-fold to 2.8-fold over 10 years in England, and 3.9-fold over 18 years in Egypt.⁽¹¹⁾ In Germany, about 3 % of the 3 – 6 year-old children and even 6.4 % of the 7–10-year-old are already obese.⁽¹²⁾ On the other hand a study from Brazil showed 1.5 million children suffering from obesity, with higher prevalence among girls. And in Iran the percent of obesity among the adolescent aged from 11-17 years old was 7.7 % according to a study conducted in 2002.⁽³⁾

In the Eastern Mediterranean Region the status of obesity has reached an alarming level, a noticeable increase in obesity generally has been distinguished among adolescents aged 11-18 years; which ranged from 15 % to 45 %.⁽¹³⁾ In Jordan the prevalence of obesity among school children aged from 6 – 12 years old were 5.6 % (5.6 % of boys and 5.5 % of girls).⁽¹⁴⁾ Moreover in Saudi Arabia the prevalence of obesity in the schoolboys aged from 6 – 14 years old were significantly increased from 3.4 % in 1988 to 24.5 % in 2005.⁽¹⁵⁾ Besides United Arab Emirates in 2005 and depending on a national survey on Urban and Rural areas they found that the prevalence of obesity in children among the school children aged from 14 – 15 years old were 11.8 % (male 12.6 – female 11.1).⁽¹³⁾

Studies done on parents of young children to explore whether parents of overweight adolescents who recognize that their children are overweight engage in behaviors that are

likely to help their adolescents with long-term weight management, included primarily children of preschool and elementary school age, have found that many parents do not accurately classify their children as overweight or obese even when they are objectively classified as overweight or obese with nationally or internationally recognized cutoff points for screening purposes. Studies showing that parents of obese children do not always recognize their child's weight status have led to the conclusion that raising parental awareness of weight as a health issue is important.⁽¹⁶⁾

Limited research until now has examined the parental stressors related to obesity of their children. Parents are less likely to encourage boys to lose weight as a result of the differences in societal ideals for weights of boys and girls, and that parents of boys might be more likely to encourage them to gain weight.⁽¹⁷⁾

1.2 Significance of the Problem

Researcher understanding of the global circumstances surrounding obesity in children and adolescents is limited due to the lack of comparable representative data from different countries and, in particular, due to the use of varying criteria for defining obesity among different countries and researchers.⁽¹⁾ Anyhow there is increasing evidence that the development of obesity in children and adolescents has deleterious social, economic and health consequences. In fact, childhood obesity is now acknowledged as an important public health issue, and this has been further highlighted by the increasing prevalence of adulthood obesity in both developed and developing countries.⁽¹⁸⁾

The early medical consequences of obesity in children include orthopaedic complications, metabolic disturbances, type 2 diabetes, disrupted sleep patterns, poor immune function, skin problems, impaired mobility, and increased blood pressure.⁽¹⁹⁾ In addition; obese child faces a lifetime of increased risk of various diseases, including cardiovascular disease, liver disease and certain forms of cancer. Even during childhood, obesity increases the risk of these diseases, and is a significant cause of psychological distress.⁽²⁰⁾

The degree of how a parents' perceive about his/her child's weight is likely to play a critical role in the development and management of childhood obesity. Greater parental perception and involvement is likely to encourage more active monitoring and controlling of a child's dietary intake and child's weight, a greater inclination to seek treatment for an obese child, and improved behavioral treatment outcomes for childhood obesity. One frequently cited reason as to why childhood obesity is on the rise is the failure of parents to recognize the overweight status of their children. Certain child and parent characteristics, such as child weight status, child age, child sex, and parental education level, have been suggested to influence parental recognition of overweight in their children. Studying of parental perception of the overweight status of their children reflect a general inability of parents to distinguish abnormal from normal weight status because of the increasing prevalence of heavier body types in the general population.

1.3. Study Purpose

This study aims to explore parents' perception and parental stress related obesity of children in Emirate of Abu Dhabi in United Arab Emirates.

1.4 Research Questions

1. What are the levels of perception of parents having an obese child?
2. What are the levels of parental stress among parents having an obese child?
3. Is there an association between the parents' demographic characteristics, parental perception, and parental stress?
4. Is there an association between the children' gender, parental perception and parental stress?

1.5 Definition of terms

The following are the conceptual and operational definition of the terms used as study variables.

1.5.1 Obesity

Conceptual Definition:

Obesity defined as an abnormal or excessive fat accumulation that may harm the human health, and the fundamental cause is an energy imbalance between calories consumed on one hand, and calories expended on the other hand. This excess of body fat translates into an increase in the body weight.⁽²¹⁾⁽²²⁾

Operational Definition:

Obesity, when the body mass index of the child at or above the 95th percentile.⁽²²⁾

1.5.2. Overweight

Conceptual Definitions:

"At risk of overweight" and "overweight" are the terms preferred to refer to children and adolescents whose excess body weight could pose medical risks. Using the 2000 CDC growth charts, at risk of overweight for ages 2 to 20 years is defined as a Body Mass Index (BMI)-for-age between the 85th and the 95th percentiles.⁽²²⁾

Operational Definition:

Overweight, when child weight status between healthy weight and obesity.

1.5.3. Body Mass Index

Conceptual Definitions:

Body mass index (BMI) is a practical measure used to determine overweight and obesity. BMI is a measure of weight in relation to height that is used to determine weight

status. BMI is the most widely accepted method used to screen for overweight and obesity in children and adolescents because it is relatively easy to obtain the height and weight measurements needed to calculate BMI, measurements are non-invasive and BMI correlates with body fitness. Additionally for children and teens, BMI ranges are defined so that they take into account normal differences in body fat between boys and girls and differences in body fat at various ages.⁽²²⁾ When the Body Mass Index (BMI) greater than the 95th percentile for gender and age, the child consider obese.⁽²³⁾

In addition, international or regional weight status standards for children and adolescents may be less reliable as the age of onset of puberty and its associated physical changes often varies between different countries, ethnic groups or cultures.⁽²⁴⁾

Operational Definition:

A measurable calculation to determine proper weight for height.

1.5.4. Perception

Conceptual Definition:

Perception is the process of attaining awareness or understanding of sensory information. The word comes from the Latin words perceptio, percipio, and means "receiving, collecting, action of taking possession, apprehension with the mind or senses". What one perceives is a result of interplays between past experiences, including one's culture, and the interpretation of the perceived. If the percept does not have support in any of these perceptual bases it is unlikely to rise above perceptual threshold. Passive perception (conceived by René Descartes) can be summarized as the following sequence of events: surrounding → input (senses) → processing (brain) → output (re-action).⁽²⁵⁾

Operational Definition:

The way the parents aware, understands, recognize and react to their children body weight.

Parents' Perception (Awareness) Levels:**Not Aware:**

Parents not aware when total score less than 53.01

Semi Aware:

Aware when total score between 53.01 – 61.257

Highly Aware:

Aware when total score between 61.258 – 69.412

Fully Aware:

Aware when total score more than 69.412

1.5.5. Stress**Conceptual Definition:**

The most commonly accepted definition of stress (mainly attributed to Richard S. Lazarus 2008) is that stress is a condition or feeling experienced when a person perceives that demands exceed the personal and social resources the individual is able to mobilize. People feel little stress when they have the time, experience and resources to manage a situation. They feel great stress when they think they can't handle the demands put upon them. Stress is therefore a negative experience. And it is not an expected consequence of an event: It depends a lot on people's perceptions of a situation and their real ability to cope with it. ⁽²⁶⁾

Operational Definition:

Uncontrollable negative feeling of the parents in regard of their obese children.

Parental Stress Level:

Very low parental stress:

Stress when total score less than 77.4

Low parental stress:

Stress when total score between 77.4 – 108.53

High parental stress:

Stress when total score between 108.52 – 139.63

Very high parental stress:

Stress when total score more than 139.63

1.5.6. Child

Conceptual Definition:

Child means the human young, from infancy to puberty.⁽²⁷⁾

Operational Definition:

Child means a person who is less than 18 years old.

1.5.7. Parent

Conceptual Definition:

A parent is a mother or father; one who sires or gives birth to and/or nurtures and raises an offspring (son or daughter).⁽²⁸⁾

Operational Definition:

One who gives birth to and raises a child, protecting and caring of him, could be father or mother.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The International Obesity Task Force review of obesity in children and young people has documented the rise in prevalence of overweight and obesity from 102 countries using their own conservative definitions.⁽²⁹⁾

Obesity is becoming more prevalent in children of all ages, is difficult to treat, and can have adverse physical, emotional, and social consequences. Overweight children are more likely to become obese adults. An overweight school-aged child with an obese parent has over a 70% chance of being obese in young adulthood.⁽³⁰⁾

Approximately 17.1% OF US children between the ages of 2 and 19 years are obese, and another 16.5% are overweight. This prevalence has increased threefold for children since 1970, Childhood obesity, therefore, is a critical public health issue today.⁽³¹⁾ It is the most common disorder among children and a major cause of increased morbidity and mortality in the U.S. population.⁽³²⁾ Ultimately, obesity results from an imbalance of energy intake via diet relative to energy expenditure. The nature and cause of obesity is the subject of intense and continuous research. Factors affecting obesity can be both environmental and genetic. The increase in obesity cannot be justified by genetic changes alone since genetic changes cannot occur at as rapid a rate as obesity has. Therefore, this places an emphasis on the role of environmental factors which suggest that dietary and activity patterns are major causes of weight gain in industrial societies.⁽³³⁾

Childhood obesity is now recognized as a major medical and public health problem. Obese children are at high risk for adult obesity, but there are as yet insufficient data to assign specific risk levels in childhood. However, obesity in childhood provides an

independent contribution to the development of adult morbidity. Without proper intervention, adult morbidities will likely begin to appear in the young.⁽³⁴⁾ Obesity is associated with serious medical, psychological, and social problems throughout the lifespan.⁽³⁵⁾ There are strong epidemiologic and causal links between obesity in the young and earlier-onset of Type 2 Diabetes Mellitus (T2DM).⁽³⁶⁾ Increasing rates of T2DM among children and adolescents will have considerable long-term implications for the affected individuals, society, and the public health system as a whole.⁽³⁷⁾

Primary hypertension in children has become increasingly common in association with obesity and other risk factors, including a family history of hypertension and an ethnic predisposition to hypertensive disease. Obese children are at approximately a 3-fold higher risk for hypertension than non obese children. In addition, the risk of hypertension in children increases across the entire range of body mass index (BMI) values and is not defined by a simple threshold effect.⁽³⁸⁾ The potential morbidity and mortality from either hypertension or diabetes after 20 to 30 years may begin to occur during young adulthood. With an early age of onset for these diseases, the young person's life expectancy could be reduced.⁽³⁹⁾ On the other hand obesity was associated with hyperlipidemia in children. It is believed atherosclerosis, a precursor of cardiovascular disease, develops early in childhood. Previous research showed that cholesterol levels could track well from childhood to adulthood.⁽³⁸⁾

Children who are overweight or obese may have abnormal liver enzymes due to the presence of steatohepatitis (fatty liver). Non-alcoholic fatty liver disease (NAFLD) is one of the most important chronic liver diseases in children and may lead to more serious complications such as cirrhosis.⁽³⁹⁾ Furthermore Sleep disturbances are common in overweight/obese children. Symptoms of sleep disorders include snoring, daytime sleepiness, restless sleep and nocturnal enuresis. Overweight/obesity puts children at risk

for obstructive sleep apnea syndrome (OSAS). This syndrome is characterized by brief but numerous involuntary pauses during sleep. Over time this may prevent patients from obtaining a night of deep, restorative sleep. The repercussions are many, putting children at risk for health, performance and safety problems.⁽³⁹⁾

The abnormalities in menstruation and early menarche represent part of the endocrine response to excess body weight in girls. Previous studies have established a relationship between obesity and lowered fertility but the impact of excess weight on menstrual problems in adolescence is less well established.⁽¹⁾ On the other hand overweight boys tend to show later maturation than their non-overweight counterparts. Although early sexual maturity is associated with overweight in girls, in boys the reverse appears to be the case, with the prevalence of overweight and obesity higher in late maturers than in early maturers.⁽¹⁾

Obesity in children and adolescents may have its most immediate consequences in the psychological and social realms. Stigmatization of obese children and adolescents has long been recognized in Westernized cultures, and is well documented among the children's peers.⁽⁴⁰⁾ A 1967 study showed that young boys (aged 6–10 years) described obese body types as being indicative of negative personality characteristics – cheating, lazy, sloppy, lying, naughty, mean, ugly, dirty or stupid. Similar observations have been made among Australian boys and girls (aged 8–12 years). In younger children the degree of negative stereotyping increased with age.⁽⁴¹⁾

Further more Acanthosis Nigricans is a dermatologic problem, frequently found in young obese individuals, is characterized by hyperpigmented, hyperkeratotic, velvety plaques on the dorsal surface of the neck, in the axillae, in body folds, and over joints. Severe skin changes correlate with elevated serum insulin levels and can be ameliorated by weight loss and consequent reduction in insulin resistance. Other skin problems commonly encountered include skin tags and keratosis pilaris.⁽³⁴⁾

There are many researches conducted to indicate the obesity in children and it is relation with the psychological effect on the children. Furthermore the literatures were indicated that the obesity psychological impact on the children is both short and long-term effects. The obese children are frequently stigmatized by their peers in the schools. Moreover harassment (teasing, joking, name calling, physical harm), being targeted for rumors/lies, and social isolation are some of the things that public school children facing because of their obesity. Accordingly these immediate effects of obesity are connected with psychological factors such as lower self-esteem, emotional distress and anxiety. In addition; other psychological disorders, such as depression and having suicidal feelings are also associated with children obesity.⁽⁴²⁾⁽⁴³⁾

There is a common belief that overweight children are unhappy with their weight and experience more psychosocial distress, mainly depressive symptoms such as; depressed mood, feelings of unimportance, reduce ability to think and concentrate and loss of energy.⁽⁴⁴⁾

Sarah et al. (2000) in their cross-sectional study on third grade students of total 868 children and the mean age was 8.4 years, attending 13 public elementary school in Northern California. The study was aimed to evaluate the association between obesity and depressive symptoms in a different school-based sample of young children, and to examine whether overweight concerns play a role in this association. They used self administered questionnaire, children depression list and BMI as a tool in their study. Accordingly they found that the body mass index and depressive symptoms were not correlated for boys ($r=0.01$, $P<.78$). The correlation between BMI and depressive symptoms for girls was slight but statistically significant ($r=0.14$, $P<.01$) which mean symptoms of depression increased in overweight girls. Also it is significantly seen among the Asian American more than whit, Latin, and African American; on the other hand there were no significant associations within ethnic groups of boys.⁽⁴⁴⁾

Concern has been expressed about the number of parents who are not aware that their children are overweight. Studies of parents of young children, primarily children of preschool and elementary school age, have found that many parents do not accurately classify their children as overweight even when they are objectively classified as overweight with nationally or internationally recognized cutoff points for screening purposes. Studies showing that parents of overweight children do not always recognize their child's weight status have led to the conclusion that raising parental awareness of weight as a health issue is important.⁽¹⁶⁾

2.2 Obesity in Children and Parental Perception

Parental awareness of their child's weight status may be an important factor affecting the dietary and lifestyle environment for their children. Research suggests that nearly 75% of parents fail to identify their overweight child as being overweight and are unable to perceive their child's weight accurately.⁽³⁰⁾

2.2.1 Parents' perceptions of childhood obesity

It is known that parents can be a very positive force in children obesity treatment. Myers et al (2000) surveyed 200 parents in Arlington, Virginia regarding their perceptions and beliefs about childhood obesity, and their own child's obesity. Parents of children between 2 and 5 years old who are above the 95th percentile for height and weight were included. About 35.5% of the parents did not perceive their child as obese and 45% of the parents thought their child's weight was fine or that there was no cause for concern. In addition 7% perceived that their child is just to be a little overweight. And other indicated that 47% of those surveyed agreed their child was overweight. Nearly 78% of parents agreed that overweight child might develop heart problems in later life, and 11% of parents thought obese children would have little energy to play. Also they agreed that their obese

child have low self-esteem and difficulty making friends with (2.7% and 1.1% respectively). To control weight, 53% of parents responded that they had no problems controlling their child's food intake.⁽⁴⁵⁾

In a similar study, Amy et al (2000) evaluated mothers' perceptions of overweight children and determined what factors are associated with mothers' failure to perceive when their preschool children are overweight. Ninety-five percent of the obese mothers identified themselves as obese (BMI greater than 30 kg/m²). However, 79% of the mothers with overweight children failed to perceive that their child was overweight.⁽³⁰⁾ This is more than twice the proportion of mothers who failed to identify their child as obese in Myers et al (2000) study.⁽⁴⁵⁾ Mothers with low education level were less likely than mothers with high education to perceive their child weight as overweight (11% vs 33%; $p=.010$, respectfully).⁽³⁰⁾

In a study investigated the parent feeling about their child's weight as parents play a critical role in the development and management of childhood overweight and obesity. A study done in 2008 by Amy et al, in Australia on a total of 347 with appropriate weight, overweight and obese children aged from 6 – 13 years old and their parents. They found that 82% of parents of overweight children, and 18% of parents of obese children reported little parental concern, this mean that parental concern was significantly greater amongst parents of obese children than parents of overweight children. With this in mind; higher parental concern was associated with higher child Body Mass Index, less parental underestimation of child body size and lower child health-related quality of life. On the other hand 51% of parents of obese children and 44% of parents of overweight children underestimated their child's weight status. Accordingly underestimation of child body size decreased significantly as parental concern increased.⁽⁴⁶⁾

To explore how mothers determine when a child is overweight, why children become overweight, and what barriers exist to prevent or manage childhood obesity, was studied done by Anjali et al (2001) in Ohio, on total of 18 mothers of preschool children. The result showed that mothers of overweight preschoolers considered their child as having a healthy weight as long as their children's activity and social functioning were unimpaired. In fact they did not accept the health professional's classification of children as overweight according to the chart's parameters. Being big boned or having a large frame was culturally acceptable to these moms and, perhaps, even desirable. Also supporting the idea that a child's size was naturally programmed was the belief that children would grow into their weight, or that the fat of overweight would disappear as the child became taller, older, and more active. ⁽⁴⁷⁾

Given the concern about the number of parents who do not recognize that their children are overweight, and the trend to inform parents when their child is above a recommended weight, it is important to know what parents do when they recognize that their children are overweight. Dianne et al (2007) conducted a cross sectional analyses with 314 overweight adolescents' parents in Minnesota and they found that adolescent girls, all of whom were overweight at time 1, was 54.1% of the responding parents classified their daughters as overweight, whereas 45.9% of the parents viewed their daughters' weight as about right. For adolescent boys, 40.0% of the responding parents classified their overweight sons as overweight, whereas 60.0% of the parents viewed their sons' weight as about right. Given these facts that parents of overweight adolescents who accurately perceived their child as overweight were not more likely to engage in behaviors that might help their child with healthy weight management, as compared to parents who did not perceive their child to be overweight. Parental encouragement to healthy diet was the only difference found between the 2 groups of parents. Parents who accurately

perceived their adolescents as overweight were more likely to encourage them to healthy diet to control their weight.⁽¹⁶⁾

Studies have shown that a high proportion of parents are unaware of or unconcerned about their overweight child's weight status. In a US study, 80% of mothers of overweight pre-school children did not perceive their child to be overweight.⁽³⁰⁾ In another US study, only one in 10 parents of overweight 4–8-year-olds recognized their child to be overweight.⁽⁴⁸⁾ According to these studies David et al (2005) conducted a study in Melbourne, Australia, on a total participates of 291 families of children aged 5–6 years and 919 families of children aged 10–12 years. Accordingly; parental perception and concerns did not differ according to the child's sex for either age group. Even though 23% of the 5–6-year-old children in the study were classified as overweight or obese based on objectively measured height and weight, relatively few of their parents (only 3%) perceived them to be overweight. Among the parents of the 10–12-year-old children, 14% perceived them to be overweight or markedly overweight (29% were overweight or obese based on objectively measured height and weight). The majority of parents (71%) of overweight 5–6-year-old children were not concerned about their child's current weight. Conversely, more than half (57%) of parents of 10–12-year-old children were concerned about their overweight child.⁽⁴⁹⁾

The parental inaccuracy of perceiving their child's weight status was associated with parents of low education "as we seen the previous study" and parents with female, older and higher BMI children. Other factors which might affect parental misperception were cultural difference in the acceptance of large body habitués and inadequate understanding on overweight and its health implications.⁽⁵⁰⁾ In Malaysia a cross sectional study was done on 204 parents of children aged 9 to 12 years, in a primary school in Kuala Lumpur, done by Noor et al (2008) aimed to examine parental perception of their

children's weight status, and its association with their knowledge on nutrition and obesity. They proved that parents were underestimating their child weight status with (38.2%) of the parents inaccurate in their perception, and younger parents showed a better perception of their child's weight status. On the other hand; parents' level of education and parental knowledge on nutrition and obesity were not significantly associated with their perception of child's weight status.⁽⁵¹⁾

Maynard et al (2003) conducted a study with 5,500 mothers of children aged 2 to 11 years from the third National Health and Nutrition Examination Survey indicated that one-third of mothers failed to correctly classify their overweight child as being overweight. This failure of mothers to recognize the overweight status of their child might reflect unwillingness to admit that their child is overweight or a lack of understanding of what overweight means. In addition, 32.1% of the mothers of an overweight child classified their child as at "about the right weight." Moreover, a higher percentage of the mothers perceived their daughters as being overweight (29%) as compared to their sons (14.0%).⁽⁵⁰⁾

Whereas in Chicago-area in 2006 a study aimed to explore parents' perceptions about their child's appearance and health, conducted by Kathryn et al. on parents of children aged 2 to 17 years (n=223 child). Showed the parents perception of childhood obesity from other view and in the same time approve the other's studies of parental perception. Thus, child age influenced parental recognition of overweight and their level of concern about the child's weight. Parents with a child ≥ 6 years of age were more likely to recognize (56%) their child as overweight by words than were those with a younger child (18%). Additionally, parents of children ≥ 6 years old were more likely (40%) than parents of younger children (15%) to be worried about their child's weight. Besides, parents of older children who perceived their child as less active/slower than other children were more likely to recognize their child as overweight. Simultaneously, recall of a

doctor's concern also increased parental recognition of overweight. Given these facts, lack of recognition of the child's overweight status and lower levels of concern about the child's weight were common among the parents of the younger children.⁽⁵²⁾

2.2.2 Parents' perception of the causes of childhood obesity

A wide range of behavioral, social and environmental factors has been suggested as potential drivers of the obesity. These include, but are not limited to, changes in the consumption of fast foods and foods prepared away from home, increases in sedentary pursuits such as television viewing, the use of computers and other forms of electronic entertainment, reductions in walking and cycling as a means of transport, growing concerns about safety in public spaces and on our roads, increases in the availability and marketing of foods, reductions in physical education in schools and occupation-related physical activity and changes in the demands on parents' time and family life.⁽⁵³⁾

Hardus et al (2003) evaluated Australian public perceptions of childhood obesity causes and preventative measures. For two days, individuals at a shopping mall were randomly asked to complete the questionnaire on potential causes of childhood obesity as well as prevention methods (n=315). Participants responded that increased fast food or unhealthy food consumption was the leading cause of childhood obesity. Promotion of healthier eating while watching television and while at school as well as increasing physical activity programs in the schools was the most common suggestions for prevention methods. Overall, the authors concluded that the public generally acknowledges numerous contributing factors to childhood obesity and identifies several areas where prevention strategies may be successful.⁽⁵⁴⁾

Anjali et al (2001) researched on the causes of obesity in preschool children as we mentioned before from the view of children mothers, and they found that some mothers, however, would acknowledge that parental diet and activity habits could influence

children's habits. Those mothers would not worry about a child's weight if the child had a good appetite and ate healthy foods. Besides mothers voiced an inability to say no if a child claimed to be hungry, and they believed that saying no would be starving the child.

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2.2.3 Parents' perception of childhood obesity consequences

Little is known about whether parents recognize when their young children are overweight. Parents must be aware that their children are becoming overweight and must be concerned about the potential consequences.⁽³⁰⁾ Since that Debra et al (2003) conducted a study aimed to examine parents' understanding of excess weight as a health risk, knowledge of healthy eating habits, and recognition of obesity in their children. The study conducted in suburban Westchester County, New York on 83 parents of children between 4 to 8 years of age (23% of children with BMI > 95th percentile). The finding show that, attitudes toward health risks of being overweight were similar among all parents; no relationship between attitudes toward risks and parental perception. Besides 10% of parents of overweight children perceived their child's weight accurately; most parents of overweight children underestimated their child's weight. All parents had similar knowledge base regarding basic healthy eating patterns.⁽⁵⁵⁾

Furthermore Noor et al (2008), in her study revealed that the majority of the parents knew the health complications related to obesity but 25% of respondents associated obesity with tuberculosis.⁽⁵¹⁾

There are many literatures documenting that the obese children are targets of societal stigmatization. With this in mind the obese people are not discriminated against because they are medically consequent, they are stigmatized because their obesity is viewed as a reflection of poor character. Children aged from 4 to 11 years described obese people as ugly, selfish, lazy, stupid and lying, socially isolated and issue to teasing, while

normal weight people were considered clever, healthy, attractive, kind, happy, socially popular and a desirable playmate. ⁽⁴²⁾

Similarly overweight and obese children were viewed as a target of peer aggression, bullying/teasing, rumors or lies, withdrawal of friendships, and unfair treatment. Marla et al (2003) conducted a school-based survey including 4746 public middle and high school children in Minnesota. The purpose was to determine the associations of weight-based teasing and body satisfaction, self-esteem, depressive symptoms, and idea to suicide and suicide attempts. Findings show that; weight-based teasing was common by peers and family members, and the children who were teased suffered from low self-esteem, low body satisfaction, and high depressive symptoms. Furthermore; 30 % of girls and 24.7 % of boys were complained of teasing by their peers, on the other hand 17 % of girls and 9.6 % of boys complained of family teasing, besides 28.7 % of girls and 16.1 % of boys experienced teasing from both the family and peers. In addition girls had more suicidal thoughts and suicide attempts than boys. ⁽⁴³⁾

2.3 Obesity in Children and Parental Stress

Childhood obesity, therefore, is a critical public health issue today. ⁽⁵⁶⁾ In comparison to previous generations; parents today have taken on a more visible role in caring for children with critical health issues such as obesity and its complications. Parental stress, and emotional response experienced by parents, resulting from the associated chronic condition, that can occur along with or as a consequence of obesity. ⁽⁵⁷⁾

Parents may be distressed about their child's current and future health, and obese children can exhibit high rates of psychological problems such as aggressiveness, depression, and internalizing and externalizing behavior relative to their slim, healthy peers. Parents of obese children may suffer stress that is related to their child's obesity

similar to the stress that affects parents of children with cancer, diabetes, or other chronic illnesses.⁽⁵⁸⁾

In addition parenting an obese child may be stressful for a number of reasons. Fears about obesity's health consequences may be a significant stressor. Furthermore parents may also be embarrassed about having an obese child. Such feelings may have been exacerbated by negative comments from family members, school officials, or health care providers. Parents may feel guilty or frustrated by their inability to influence their child's weight course.⁽⁵⁹⁾ Because treatment of obesity involves lifestyle changes, including diet and exercise, and the responsibility to see that the child makes these changes falls to the parent.⁽⁵⁸⁾ This may, in turn, exacerbate parents' worries about their children's physical and emotional well-being.⁽⁵⁹⁾ It is this responsibility that may be causing parental stress, and when a parent is stressed out; he or she is not as good at enforcing those all important lifestyle changes.⁽⁵⁸⁾

Obesity is a stigmatized status in most of the community; so, research considering parental responses to other forms of stigma in their children suggests stigma increases the amount of stress parents' experience. Parents may also find others judge them negatively because they have an overweight child.⁽⁵⁹⁾ In the case of raising an overweight child, parents may find their abilities or effectiveness as parents are questioned by friends, family, or service providers such as physicians, teachers, or social workers. Further, parents may internalize such judgments, directing them towards themselves. Such a response may be particularly likely if parents are worried about the negative health consequences of obesity. Interactions such as these may be quite stressful for the parents.⁽⁶⁰⁾

Unfortunately, there are no published investigations specifically examine the parental stress of caring for children with obesity.

CHAPTER THREE: METHODOLOGY

This chapter describes the methods that were used in this study to investigate the parents' perceptions and stress related obesity in their children. It describes research design, setting, population, sampling, sample, inclusion criteria, instruments, ethical approval, procedures, and data analysis.

3.1 Design

A cross-sectional comparative descriptive design used to explore the perception of the parents and stress related to their obese children.

3.2 Setting

This study was conducted in 37 government and private primary schools in Emirate of Abu Dhabi, Al Ain city, in United Arab Emirates.

3.3 Population

All parents with children greater than 95 percentile who studied in selected schools which are reached and accessible schools in Al Ain city.

3.4 Sampling

For this study the convenience sampling was used for the sampling method. The schools sampling started with a checklist included the government school's names, categories and full address in Al Ain city. Al Ain educational district provide us with 97 basic education governmental schools details whereas 37 schools 10 private schools and 27 governmental schools, were chosen according to certain criteria; such as easy to access and round one elementary schools (from first to fifth or sixth classes). The participants were parents of children aged between 6 – 12 years with body weight greater than 95 percentile on growth chart, through convenience sample (systematic random sample) from a private

and government schools located in Al Ain city in United Arab Emirates. The total convenience sample (systematic random sample) included 1677 parents who have a child with body weight equal or greater than 95 percentile on growth chart, the questionnaires were distributed to them, yielded response rate of 75 %, which mean the total returned questionnaires was 1146, and 49 questionnaires were excluded because the participants did not complete the whole parts of the questionnaire. With this in mind the total number of children in the visited schools was 17660 male and female students.

3.5 Sample

A sample of 1097 parents of obese children in early school age 6 – 12 years old from 37 government and private schools have been selected to complete anonymous self administered questionnaire survey.

3.6 Inclusion Criteria

Inclusion criteria were parents of children from the ages of 6 – 12 years that have a BMI \geq 95th percentile on the growth chart. Excluded were those not between the ages of 6 – 12 years, and have BMI $<$ 95th percentile on the growth chart.

3.7 Instruments

In this study three anonymous, self-administered questionnaires were used to assess parents' and children' demographic data, parents' perception of their obese children and parental stresses regarding the obesity in their children. Obesity parental perception scale and parental stress measurement scale were developed by the researcher based on literature search. Children's Body Image Scale (CBIS) was used after the author permission (Susan J. Paxton 2002) (See Appendix A).⁽⁶¹⁾ In addition, to determine the children body mass index; measurement of height and weight, Seca portable Height Rod and Seca Mechanical Bathroom Floor Scale were used. Translation of the instruments (questionnaire) was done using the translation and back-translation method for each instrument. They were

translated first from English to Arabic language by the researcher, then reviewed by three experts who have experience in the nursing field and then back translated to English language by a bilingual expert. After that an evaluation was made between the two versions to ensure clarity and consistency.

3.7.1 Demographic Data

Socio-demographic information sheet was used for collecting socio-demographic data from parents and their obese children, it is constructed by the researcher and written in both Arabic and English language. The data collected about parents includes: age, gender, weight and height, nationality and level of education, number of family member, and for the Socio Economic Status (SES) of the family we asked about parent's working status and family income, and numbers of family meals purchased during one week. While the data about the child include age, gender, weight, height, BMI, numbers of children in the family are considered to be obese, child rank order between his/her brothers and sisters, child daily pocket money, and the amount of the exercise the child doing. Indeed also the demographic data included questions regarding the study place; is it rural or urban, school category; is it governmental or private school and the questionnaire filer relationship with the concerned child; is it the father or the mother.

3.7.2 Obesity Parental Perception Scale

Parental perception of obesity in children scale, consisting of 20 questions divided to three categories.

3.7.2.1 Parental Perception of Obesity Causing in Childhood

This part of the questionnaire measuring the parents' perceptions of the causes of childhood obesity, consist of 8 items, particularly Lack of parental control in what children eat, the role of inactivity (video games/TV/computer time), the frequency of junk food

purchased from the restaurants, and from the parents' perception, their child is gaining weight because of sedentary life style or heavy amount of unhealthy eating. Also we use four likert scales to measure the parents' perception of childhood obesity (strongly disagree, disagree, agree, and strongly agree). (See Appendix G & H)

3.6.2.2 Parental perception of obesity in childhood

This part of the questionnaire which measure the parents' perception of childhood obesity consist of 5 items; through asking the parent if they concerned about their child's weight, how they feel about their child weight "is it right weight, overweight or obese", and how long they perceived their focused child having weight gain. In addition we use four likert scales to measure the parents' perception of childhood obesity (strongly disagree, disagree, agree, and strongly agree). (See Appendix G & H).

3.6.2.2.1 Children's Body Image Scale

Moreover we use the Children's Body Image Scale (CBIS) developed by the author Susan J. Paxton. This scale was based on body outline scales used previously to assess body image in children and found to have strong psychometric properties in which a child is presented with a series of body figures ranging from very thin to obese and asked to identify which body size is they believed closest to their child size and to choose the figure that they think it's the ideal body size they would most like it for their child. The CBIS differs from other scales of this type in that the body figures are based on photographs of prepubescent children of known BMI. The photographs have been digitally altered to standardize facial and other distinguishing features, but being based on photographic images, they are more realistic. Permission from the author to use the instrument was obtained (See Appendix G & H).⁽⁶¹⁾

3.6.2.3 Parental perception of obesity consequences in childhood

In this part we use bundle of questionnaire to measure the parents' perceptions of the childhood obesity consequences and consist of 7 items, for instances " Obese children are more likely to develop diabetes (high blood sugar), hypertension (high blood pressure) and heart problem than children who are not obese" " Obese children are more likely to have problems in their social relationship with other children than children who are not" by using four likert scales (strongly disagree, disagree, agree, and strongly agree). (See Appendix G & H)

3.6.3 Parental Stress Measurement Scale

The third scale used in this research was the Parental Stress Measurement Scale, it is self report questionnaires, consist of 39 items instrument developed to identify potentially parental stressors related to their obese child. Each item was rated on a 5-point likert scale ranging from 1, representing the least stressful response to 5 representing the most stressful response (See Appendix G & H).

3.7 Validity and Reliability of the study instruments

Face validity were conducted by three individuals expert in nursing field had bilingual language (English and Arabic language) to check the items relevancy, then a pilot study was conducted at the beginning of the main study consisted of 50 sample of parents of obese children to measure the reliability of the questionnaires. The study included urban elementary schools both government and privet sectors. Then by using the statistical package for the social sciences version 16 the Cronbach's coefficient alpha for the Obesity Parental Perception Scale was .81 and the Cronbach's coefficient alpha for the Parental Stress Measurement Scale was .94. Children's Body Image Scale was tested by using test retest by the author Susan.⁽⁶¹⁾

3.8 Ethical Approval

All of the aspects of the study were reviewed and approved by Jordan University of Science and Technology internal review board (Nursing College and Higher Education College). Permission from the Ministry of Education in Emirate of Abu Dhabi and Al Ain Educational District were taken in order to conduct the study in place, and Seha - Abu Dhabi Health Service Company were informed about the research enclosed with letter from the Dean of the Nursing College in Jordan University of Science and Technology and study questionnaires. Besides; informed consent paper after growth parameters have been measured to their children in age group from 6 to 12 years old have been obtained from parents before study performance, which include explaining the purpose and the ways of the study. Furthermore the parents informed that their responses to the survey are anonymous, as we are not collecting information that could link their survey specifically to them. Their child's height and weight will be private. Only the research team, and themselves will see their child's measurements. Both the report of their child's weight status and a questionnaire will be sent home with their child in a sealed envelope.

3.9 Procedure

Prior to conducting the research study, Jordan University of Science and Technology sent a letter to the Ministry of Education and Seha - Abu Dhabi Health Service Company in United Arab Emirates describing the nature and the significance of the study and requesting permission for the researcher to conduct the study at government and private schools in Emirate of Abu Dhabi. After approval was obtained from UAE Ministry of Education and Seha - Abu Dhabi Health Service Company, the researcher scheduled meeting with the director of Al Ain educational district where the study take place and explained the purpose of the study and data collection process at the schools (See Appendix B, C & D).

For a period of eight weeks, questionnaires were distributed and collected from the participants, started from March 22, 2009 and ended by May 14, 2009. A pilot study was conducted at the beginning of the main study consisted of 50 sample to measure the reliability of the questionnaires. The study included urban elementary schools both government and private sectors. Each school director was met and has been well familiarized with the research process and progress. Arrangements for use of private room in which the participants were measured (height and weight) for the study purpose was ensured at the clinic in the school in normal working day, and the instrument for the measurements were provided by the researcher. Then, on the same day of the research; a general scan was obtained for the target age group (6 – 12 years) in each school to localize the obese child, besides; all children classified as obese according to age and gender specific cut-offs of BMI for children were selected to participate. In addition a consent paper (See Appendix E & F) with anonymous self administered questionnaire in sealed envelopes were sent with the child to his/her parents and return it back at the following day to the school. The children who returned the consent forms and who gave assent to participate were included in the study.

3.9.1 BMI Measurements

For the measurement of the body mass index the participants children have been asked to remove their shoes and any heavy clothing before being weighed and height measured. Height and weight measurements were obtained by the researcher and it was recorded in centimeters (height) and kilograms (weight) to the nearest tenth of a point. BMI scores were calculated for children using the Centr Disease Control standard criteria (See Appendix J & K). Children were classified as obese weight (BMI \geq 95th percentile). BMI is calculated as Weight in kg \times 10000. ⁽²²⁾

$$(\text{Height in cm})^2$$

3.10 Data Analysis

Data were analyzed by using the Statistical Package for Social Sciences (SPSS) windows version 16. Chi-square was used to demonstrate the percentage of parent's perceptions of obesity in children and stressors related to their obese child. A probability level of 0.05 or less will be considered as statistically significant.

Cronbach's coefficient alpha for estimating reliability was used for the total scales of the Parental Perception Scale and Parental Stress Measurement Scale. The researcher coded the data and used the statistical package for the Social Sciences (SPSS) version 16 for analysis.

Descriptive statistics were used to analyze characteristics of the sample and study variables including means, mode, standard deviation, frequencies, percentages, minimum and maximum. Correlation was the statistical test used to determine the relationships between the variables Parental perception and parental stress.

CHAPTER FOUR: RESULTS

4.1 Introduction

This study aims to explore parental perception of obesity in children and stressors related to obesity during childhood period in Emirate of Abu Dhabi in United Arab Emirates, and this chapter describes the findings of the current study.

4.2 Findings

4.2.1 Demographic Characteristics

Descriptive statistics were used to report demographic data, whole study was conducted in the urban area at the western region of Emirate of Abu Dhabi. The schools categories consisted of 58.7% governmental schools and 41.3% private sector schools. The number of participants was 1097, about 30.7% were fathers; 33.8% of them were < 39 years old; 59.6% of fathers were between 40 to 59 years old and 3.6% of fathers were >60 years old, while 64.8 % were mothers and 4.5 % were both fathers and mothers. Furthermore; those who have preparatory or less level of education were 34.0 %, high school or above were 33.2 %, the bachelor degree holders were 22.2 % and higher education certificate holders as masters and PhD degrees were 5.9 %. Also the majority of the fathers' nationality was from United Arab Emirates with 58.2 %, Gulf Cooperation Council (GCC); Yemen and Iraq were 8.6 %, Palestine; Jordan; Syria and Lebanon were 11.6 %, Egypt and Sudan were 9.2 %, India, Pakistan; Iran; Bangladesh; Filipino and Afghanistan were 11.7 %, Somalia; Algeria; USA; Canada and Sirilanca were .8 %. In addition 79.3 % were working fathers and 16.4 % were not working. The fathers' age ranged between 24 years old up to 85 years old, with a mean average of 43.34 years (SD= 9.102). In addition; fathers height and weight were measured by them selves, the minimum

fathers' weight was 40 kilogram and the maximum weight was 165 kilogram with a mean average of 85.61 kilogram (SD=15.181) and the fathers' height ranged between 140 centimeters up to 220 centimeters with a mean of 171.23 centimeters (SD=8.764).

On one hand the mother participants aged between 22 years up to 65 years old with a mean age average of 36.62 years (SD=6.613), on the other hand 65.8% of mothers were <39 years old while 30.1% of mothers were between 40 to 59 years old and .1% of mothers were >60 years old. Mothers height and weight were measured by them selves, minimum mothers weight were 40 kilogram and the maximum weight was 170 kilogram with a mean of 75.91 kilogram (SD=13.821), and the mothers' height ranged from 115 centimeters up to 200 centimeters with a mean of 160.85 centimeters (SD=8.258). The majority of the mothers' nationality were from United Arab Emirates (57.3 %), Gulf Cooperation Council; Yemen and Iraq were 8.1 %, Palestine; Jordan; Syria and Lebanon were 11.2 %, Egypt and Sudan were 10.0 %, India, Pakistan; Iran; Bangladesh; Filipino and Afghanistan were 12.5 %, Somalia; Algeria; USA; Canada and Sirilanca were (0.7 %). In addition 22.9 % were working fathers while 74.7 % were not working. Furthermore; 38.4 % of mothers had preparatory level of education, while 35.7 % had high school or above, the bachelor degree holders were 21.1 % and the higher education degree holders as masters and PhD degrees were 2.6 %.

The children socio-demographic characteristic data showed the following results; the children aged between 6 years old up to 12 years old (n=1097) with a mean of 9.2 years old (SD=1.7), male children constituted 558 child (50.9 %) and female children were 539 child (49.1 %), their body height ranged between 104 centimeters up to 166 centimeters with a mean of 137.87 centimeters (SD=10.654) and their body weight between 24 kilograms and 107 kilograms with a mean average of 49.08 kilograms (SD=13.010). Accordingly those children's body mass index were ranged from 18.8 percentile up to 45.3 percentile with a mean of 25.349 percentile (SD=3.944).

The total number of children in the family - including the involved child - ranged between 1 child up to 22 children with a mean average of 5.38 child (SD=3.117). Furthermore, 23.60 % of the total children (n=1097) in this study were the first born child in the family, likewise 21.05 % of the children are the last born/youngest child in the family and 2.64 % of the participant children are the only/merely child in the family. The total numbers of obese children in the family including the participating child distributed between 1 child and 9 children with a mean of 1.45 child (SD=1.345). Also there was some parent were denied that their children are obese or even overweight 25.1% (n=275).

In fact most of the parents noticed that their children gaining weight while they were 1 month of age until the age of 12 years, mostly between 1 year old to 3 years (46.3 %) with a mean age of 3.32 years (SD=2.736) while few of them they didn't notice that their children gaining weight (6 parents, 0.5 %). In addition the daily average hours that the participant children watched television and played a computer game ranged between not watching T.V at all or playing computer game, up to 15 hours, mostly from 2 hours to 3 hours (47.7 %) with a mean of 3.26 hours (SD=1.873). These parents who have been asked if their doctor ever tell them that their children are gaining weight too fast or is overweight 36.1 % answered Yes and 63.1 % answered No, while 42 % of the participant fathers answered that they felt they have the appropriate weight whereas 47.6 % answered no they did not, on the other hand 32.7 % of the participant mothers indicated that they felt the child has the right weight; whereas 62.3 % indicated no they did not have that feeling. In addition the result showed there is a significant correlation ($r=-.325$, $p<0.001$) between the child/family physician notifying the parent about their child's increasing weight or not and children BMI. (See Table 1, Appendix I)

The family monthly income ranged between 138.8 United State Dollar and 27777.7 United State Dollar with a mode of 2777.7 United State Dollar (8.2 %), and a

mean of 4372 United State Dollar. Whereas the child's daily pocket money were 0 DH (child weren't given any pocket money) to 13.8 United State Dollar, with a mode of 1.3 United State Dollar (32.6 %) and a mean of 1.4 United State Dollar. The result explore that there is no correlation ($r=0.052$, $p>0.05$) between families monthly salary income and children BMI, whereas children daily pocket money form a significant correlation ($r=0.087$, $p<0.01$) with children BMI. (See Table 2, Appendix 1)

The participated parents ($n=1097$) showed that 3.3 % are not at all concerned about their child's weight likewise 26.3 % of parent had a little concern, and 69.7 % of parent are very concerned about their child weight. On the other hand 18.6 % of the participants' parent felt that their children are about the right weight, in contrast 62.6 % of parent's felt that their children are overweight, and 17.4 % of parents felt that their children were obese. Besides 29.8 % of participant parent never purchased a family meal from a fast food restaurant before one week of the survey, nevertheless, 39.2 % of parent said they purchased family meal one time only, 17.8 % of parent they purchased family meal two times, 5.7 % of parent they purchased three times and 7.2 % of parent they purchased a family meal from a fast food restaurant more than three times during the week. The participants parent thought that their children eats too little were 3.7 %, in comparison of 61.1 % of parent thought that their children were eating just right amount and 34.9 % of parent thought that their children eats too much. From the participants' parent's view that their children exercise is not enough were 43.8 %, however 21.6 % of parent said their children exercise just right level, 4.0 % of parent said that their children were exercising too much and the rest parent 30.4 % said that their children are not doing exercise at all. (See Table 3, Appendix I)

The current study explore many correlation between the demographic characteristics of the family and children BMI, for instants there are a significant

correlation between fathers ($r=0.140$, $p<0.001$) and mothers' age ($r=0.167$, $p<0.001$) with children BMI, also there are a correlation between fathers ($r=-0.075$, $p<0.05$) and mothers ($r=-0.080$, $p<0.01$) educational level and their children BMI, whereas there are no correlation between school category ($r=0.001$, $p>0.05$) or working mothers ($r=-0.015$, $p>0.05$) and children BMI. While there are a significant correlation between fathers ($r=0.086$, $p<0.01$) and mothers ($r=0.147$, $p<0.001$) body weight and children BMI, besides there is correlation ($r=0.104$, $p<0.001$) between total children in the family and children BMI, plus the correlation ($r=0.071$, $p<0.05$) between the child order in the family and children BMI. (See Table 4, Appendix I)

4.3 Levels of Parental Perceptions of having obese child.

In current study 34.8 % of parents were reported semi levels of obesity awareness, besides 31.7 % of parents had highly levels of obesity awareness, indeed 18.5 % and 14.9 % had fully levels of awareness and not aware at all respectively. (See Table 1)

Table 1: Levels of Parental Perceptions of having obese child.

Parental Perception of Obesity in Children	Frequency	Percent
Not Aware	164	14.9
Semi Awareness	382	34.8
Highly Awareness	348	31.7
Fully Awareness	203	18.5

4.3.1. Parental perception about the causes of obesity in childhood

Table 5, appendix H; present the first subscale of obesity parental perception scale which included 8 items. Within the parental perception of obesity in childhood reported that "Eating habits of parents influence the eating habits of their children" (42.3 % agree and 27.8 % strongly agree), followed by " Modern technology and media playing an important role in children obesity" (34.6 % agree and 49.0 % strongly agree). Besides; " Hereditary play a major role in children obesity" (47.8 % agree and 28.4 % strongly agree).

4.3.2. Parental perception of obesity in childhood

Parental perception of obesity in childhood is the second subscale of obesity parental perception scale measured by the next 5 items in the instrument. Within this part parents were reported the following results; " Childhood obesity is becoming more common" (40.7 % agree and 48.9 % strongly agree), furthermore " Reducing childhood obesity is easier than reducing obesity in adulthood" (33.8 % agree and 50.9 % strongly agree), on the other hand " Obese children are likely to become obese adults" parents reported that (39.3 % agree and 35.9 strongly agree). (See Table 6, Appendix I)

4.3.3. Parental Perception of Obesity Consequences in Childhood

Current study show the last parental perception subscale consists of 7 items which used to measure the parental perception of obesity in childhood. Within this part of the scale parents reported that " Obese children are more likely to develop diabetes (high blood sugar), hypertension (high blood pressure) and heart problem than children who are not obese" (31.7 % agree and 58.4 % strongly agree). Secondly for the " Obesity enhance early puberty in male" parents reported (26.5 % disagree, 41.5 % agree, and 20.3 % strongly agree). Thirdly about the " Obese children are more likely to develop skin problems than other normal weight children" the parents reported (43.9 % agree and 26.3 % strongly agree). Lastly they reported on the " Childhood obesity is a significant cause of peer rejection" (29.0 % disagree, 39.5 % agree and 20.0 strongly agree). (See Table7, Appendix I)

4.3.4. Children's Body Image Scale

The Children Body Image Scale was used to measure the parent actual perception of their children's weight, and to explore the parent's perception of ideal weight for their children's body weight. In order to test whether parent were able to match their children body size with the body figure of similar BMI, the correlation between actual BMI category and perceived BMI category was examined, and it revealed that 47% of the parents they perceived that their male children were overweight while they are obese, besides 10.4% of parents they conceived that their male children's weight was ideal weight and 5.3% of parents they conceived that their male children's weight was underweight, whereas 39.7% of the parents perceived their male children's body weight correctly as obese. (See Table 8, Appendix I) Moreover, 45.5% of parents choose underweight figure as an ideal weight for their male children, in comparison with 43.3% of parents chooses the ideal weight figure for their male children, whereas 9.5% of parents would rather overweight figures and 1.4% of parents preferred obese figures for their male children. (See Table 9, Appendix I)

Furthermore 50.8% of female's children parents conceived that their female children's body weight as a an overweight, whereas 8.8% of female children parents supposed that their female children's body weight as an ideal weight and 1.8% of female parents supposed that their female children's body weight as underweight, in comparison with 38.4% of female's children parents perceived their female children body weight as an obese.(See Table 8, Appendix I) On one hand when parents asked to choose the ideal body weight for their female children from the figures showed to them; 49.9% of parents chooses underweight figures for their female children, on the other hand 38.2% of parents chooses the ideal weight figure for their female children, in comparison with 9.7% of parents they prefer overweight figures for their female children and 11.0% of parents they prefer obese body weight figures for their female children. (See Table 9, Appendix I)

4.4. Levels of Parental Stressors among Parents had Obese Children.

In current study the parental stress level showed that 32.1 % of the parent had high parental stress, those with low parental stress revealed 30.6% of the participant sample, whereas 18.7 % of the parent had very low parental stress and 18.6 % of the rest parents experienced a very high parental stress. (See Table 2)

Table 2: Obesity in Children and Parental Stress

Parental stress levels	Frequency	Percent
Very low parental stress	205	18.7 %
Low parental stress	336	30.6 %
High parental stress	352	32.1 %
Very high parental stress	204	18.6 %

In table 10 appendix I, we merged the 5-point likert scale (we add point 2 "Rarely" to point 3 "Sometimes" and we add point 4 "Often" to point 5 "Very often") after the survey to be as the follow (1=Never, 2=Sometimes, 3=Very often). The parents showed that they were exposed for high parental stress situation (32.1 %) related to their children body weight. Parents appear high stress level which assimilated in their repetitive talking with their children about their body weight "59.9 % of the parent said it happened with them very often". Besides that; they were worried about the long term impact of the obesity on their children which happened with them very often as they reported (56.8 %), which expose them to high stress level. Furthermore; the parent (53.4 %) clarified their high stress related to their worried about their children weight will be worsen, on the other hand (52.1 %) of the parent their stress increased because of their understood and know that their children were hurt because of their body weight. In fact; from the indication of the high parental stress which revealed by our study when the partner keep on speaking with his/her partner about their child weight (51.5 % of the parent said it happened very often

with them). Indeed; 48.8 % of the parent they experienced high level of stress because they felt uncertain about their children future. Parent prone to high level of stress (47.8 % of the parent recorded it happened very often) in order to feeling guilty because their children become obese, whereas the other children remained healthy weight. On the other hand 42.6 % of the parent represented high stress due to their worried that may be they were responsible for their children's obesity in some way or involve in it. From the things that recurred very often to the parent (41.1 %) and elevated their stress; their feeling helpless over their children's overweight and couldn't handle things very well. Moreover; most of the parent (40.1 %) undertakes high stress in consequence of thinking twice before taking their children for cloth shopping. (See Table 10, Appendix I)

4.5. The Association between Parents' Demographic Characteristics and the Level of Parental Perception.

In current study crosstabs-chi square were used to analyze the data, and it revealed that there is no significant association between parents gender and level of awareness ($X^2 = 6412$, $df = 6$, $p = 0.379$). (See Table 11, Appendix I) In addition fathers aged from 40 up to 59 years old were more aware ($X^2 = 8.578$, $df = 6$, $p = .199$) of obesity in children, causing and consequences than the other age groups of fathers and more than the same age group of mothers. Whereas mothers aged < 39 years old were more aware ($X^2 = 7.905$, $df = 6$, $p = .245$) of obesity causing and consequences in childhood than other group of the same mothers' age category and more than the same age group of male category. (See Table 12 & 13, Appendix I)

Hence; the fathers' nationalities add a statistically significant issue to the study result which showed an association between parental awareness and fathers' nationalities ($X^2 = 27.354$, $df = 15$, $p = 0.026$). (See Table 14, Appendix I) Furthermore there was a statically

significant association between the parental awareness level and mothers' nationalities ($X^2 = 26.974$, $df = 15$, $p = 0.029$) as displayed in the table below (See Table 14, Appendix I)

In addition; there is a statistically significant result proofed by the current study in association between parental awareness level of obesity in children and fathers' educational level ($X^2 = 44.556$, $df=9$, $p=0.001$). (See Table 15, Appendix I) On the other hand there is a statistically significant association between the parental perception level of obesity in the childhood and mothers' educational level ($X^2 = 51.827$, $df = 9$, $p = 0.001$) as it is revealed beneath. (See Table 15, Appendix I)

4.6. The Association between Parents' Demographic Characteristics and the Level of Parental Stress.

In the relation between the parental stress related to the obesity of their children and the questionnaire filler (parents' gender) there were a statistically significant relationship ($X^2 = 37.209$, $df= 6$, $p= 0.001$) as manifested by the study result.(See Table 16, Appendix I) Fathers aged between 40 – 59 were more psychologically distressed ($X^2 = 6.007$, $df = 6$, $p= .422$) related to their children obesity than the other age groups of fathers, while mothers aged <39 years old were experienced more psychologically distressed ($X^2 = 9.423$, $df = 6$, $p= .151$) related to their obese children than the other age groups of mothers. (See Table 17 & 18, Appendix I)

To assess the association among parental stress regarding childhood obesity and fathers' nationalities we use the crosstabs-chi square, and we found a statistically significant relation ship between the different fathers' nationalities and parental stress level related to obesity in children ($X^2 = 1.198$, $df = 15$, $p = 0.001$). (See Table 19, Appendix I) In addition the parental stress level associated significantly with the mothers' nationalities ($X^2 = 1.215$, $df = 15$, $p = 0.001$). (See Table 19, Appendix I)

At the parental stress level and fathers' education there was a statistically significant relationship as revealed by the study result ($X^2 = 59.862$, $df = 9$, $p = 0.001$). (See Table 20, Appendix I) Mothers educational level and parental stress related to obesity in children formed a statistically significant relationship ($X^2 = 24.032$, $df = 9$, $p = 0.004$). (See Table 20, Appendix I)

4.7. The Association between the Children's Gender and Parental Perception of Obesity in Children.

By using the crosstabs chi-square test the result shown that there was no significant association ($X^2 = 2.751$, $df = 3$, $p = 0.432$) between the children's gender and parental perception of obesity in children. (See Table 21, Appendix I) On the same time with using the t-test; the mean of the parental stress level of the female children ($M=2.58$, $SD=.957$) is equal in variance ($t= -1.520$, $DF=1095$, two-tailed $p=.129$) to the male children ($M=2.49$, $SD=.957$) so it is not statistically significant. (See Table 22, Appendix I)

4.8. The Association between the Children's Gender, children's age and Parental Stress Related to Obesity in Children.

The mean of the parental stress level of the female children ($M=2.5213$, $SD=.97982$) is equal in variance ($t=-.502$, $DF=1095$, two-tailed $p=.616$) to the male children ($M=2.4910$, $SD=1.01643$) so it is not statistically significant. (See Table 23, Appendix I) On the other hand by using the crosstabs-chi square there were no significant association ($X^2 = 1.839$, $df = 3$, $p = 0.606$) between the children genders and parental stress level as it is shown by the result. (See Table 24, Appendix I)

In addition the current study showed a statistically significant association ($X^2 = 44.079$, $df = 18$, $p = 0.001$) between the parental stresses related to their obese children and the children age. (See Table 25, Appendix I)

4.9. The Differences between the Governmental Educational Sector and Private Educational Sector in the Level of Parental Perception of Obesity in Children and Parental Stress Related to Obesity in Children.

Current study revealed that there was a statistically significant ($X^2= 20.481$, $df = 3$, $p = 0.001$) association between parental perception of obesity in children and school category either government or private sector. (See Table 26, Appendix I)

Moreover the study appeared that there was a statistically significant association ($X^2 = 62.891$, $df = 3$, $p = 0.001$) between the parental stress level and schools categories. (See Table 27, Appendix I)

4.10. The Association between Parents' Nationalities, Level of Parental Perception of Obesity in Children and Parental Stress Related to Obesity in Children.

By using the partial correlations between fathers' nationalities and mothers' nationalities for perception level declines to (0.914), which is statistically significant ($r=0.914$, $p<0.01$) when perception level is controlled. (See Table 28, Appendix I)

Accordingly the correlation between fathers' nationalities and mothers' nationalities for stress level declines to (0.908), which is statistically significant ($r=0.908$, $p<0.01$) when perception level is controlled. (See Table 29, Appendix I)

CHAPTER FIVE: DISCUSSION

5.1 Introduction

This chapter focuses on discussion of results obtained in current study and compares it to the literature, limitations, conclusion, recommendations, applications for research, practice and nurses, education, administration. The purpose of this study aims to explore parental perception of obesity in children and parental stress related to obesity during childhood period in Emirate of Abu Dhabi in United Arab Emirates.

5.2 Parental Perception of Obesity in Children

In fact there are many studies debated obesity in childhood and parents perception of their overweight or obese children and explore the level of parent perception and to which level can the parent perceive and aware about their children body weight. Accordingly in current study the participated parents' showed that 3.3% are not at all concerned about their child's weight while 26.3% of parent had a little concern, and 69.7% of parent are very concerned about their child weight, this might be because these parents unperceived severity of obesity in children which might lead to more weight gain that predispose these children to complication of over weight, or because of the different cultures they come from and different educational levels of participated parents and different educational system in participants' cultures, this affect parents attitudes and perceptions regarding the obesity in children. Therefore these findings are consistent with a study done by Amy et al (2008) in Australia, found that 82% of parents of overweight children, and 18% of parents of obese children reported little parental concern, which mean very parental concern was significantly greater amongst parents of obese children than parents of overweight children.⁽⁴⁶⁾ While other study done by David et al (2005) in

Melbourne, showed that the majority of parents of overweight 5-6 years old children 71% were not at all concerned about their child's current weight and more than half 57% of parents of 10-12 years old children were concerned about their overweight child.⁽⁴⁹⁾

On the other hand 18.6% of the participants' parents felt that their children are about the right weight, in contrast 62.6% of parents' felt that their children are overweight, and 17.4% of parents felt that their children were obese, in spite of that all the participated children were obese. Parents underestimation of their children body weight because most of the children in the sample were at the beginning of obesity range, moreover that some parents might thought that their children body size large because of their heavy skeletal frame and the emotional feeling of the parents regarding their children play a major role in parents classifying their children as obese children. This failure of parents to recognize the obesity status of their child might reflect unwillingness to admit that their child is obese or a lack of understanding of what obesity means and cultural differences in the acceptance of large body size, as it is explored by this study assimilated by parents denial (25.1%) there is no obese child in the family even the question said " How many children in the family are considered to be obese including this child". Although these result reliable with a study done by Myers et al (2000) in Arlington examined parents' perceptions and beliefs about childhood obesity, and they conclude that 45% of the parents thought their child's weight was fine or that there was no cause for concern. An additional 7% perceived their child to be a little overweight.⁽⁴⁵⁾ Which also reliable with a similar result of a study done by Amy et al (2000) revealed that 79% of the mothers with overweight children failed to perceive that their children was overweight.⁽³⁰⁾ Besides many parents in David et al (2005) study are unaware and/or unconcerned about overweight in their own child.⁽⁴⁹⁾

Parents in current study mentioned that the ability of reducing childhood obesity is easier than reducing obesity in adulthood, and they are worried about their children's

weight right now even though they are still young, and this is contrast with study done by Anjali et al in (2001), revealed the mothers believed that obesity and becoming overweight could not be prevented in children; although these mothers did not worry about a child's weight or large frame size if the child had a good appetite and ate healthy foods.⁽⁴⁷⁾ The long that the parents perceived their children gaining weight are varied, the majority of them perceived before three to one year or since the child born and few of them they did not perceive at all. In contrast with study conducted by Debra et al (2005) appear most participants reported concerns for between two to five years old children.⁽⁶²⁾

5.3 Parental Perception of Obesity Causes in Childhood.

Current study surveyed the families' ready meal purchasing habit and it is revealed that family consumption of fast food could be one of the reasons even though the majority of the parents bought family fast food at least once a week, besides the modern technology with the media were involve in the obesity increasing among the children as the parents strongly agree with it, this was congruent with Hardus et al (2003) study that more than half of the adults surveyed felt over consumption of fast foods and media promotion of unhealthy foods to be extremely important as causes of obesity.⁽⁵⁴⁾ Parents in current study said (61.1%) that their involve children were eating just right amount of food whereas 34.9% of parent said that their children eats too much food, besides 43.8% of the parents mentioned that their children exercise is not enough and 30.4% of the parents said that their children are not doing exercise at all. This means that different quality of the food the children had eaten rich in fat, carbohydrate and more sugar. Another factors predispose child to obesity was lack of physical exercise either at home or school which could affect the body weight of the children and not merely the food quantity.

Parents in current study believes that eating and exercises habits of parents might influence eating and exercises habits of their children, besides that the hereditary within the

family also play an important role in children obesity. On the other hand, the majority of the parents said that they have the ability to influence their children' physical activity and children' food choices. Inconsistently a study conducted by Jain et al (2001) showed that mothers believed they were unlikely to affect a child's biological predisposition to be overweight and they described difficulties structuring their young children's eating habits.⁽⁴⁷⁾ and similar with this study in some issues as some mothers, however, would acknowledge that parental diet and activity habits could influence children's habits.⁽⁴⁷⁾ Although another study done by Kathryn et al in U.S (2006) was consistent with our study that the majority of parents agreed that they could influence their child's food choices and amount of physical activity.⁽⁵²⁾ There is a prevalent persuasion/belief that Arabic gulf country people had high prevalence of obesity in their children because of high family income. Current study found that there is no correlation between the family monthly income and BMI increasing in children. Furthermore there is a correlation between the daily child pocket money and increased BMI at the different socioeconomic levels of the community; this might give children chance to buy what ever they like from unhealthy foods and beverages. Thus, this study showed that working mothers has no effect on their children BMI, whereas previous obesity literature result suggest that higher female labor participation rates lead to higher obesity rates in children, and female employment leads to fewer meals prepared at home, especially when mothers spend less time with children.⁽⁶³⁾ Whereas in UAE where current study conducted most of the families were extended families which mean if the child' mother employed; there is close relative at home to look after the child while mother nonattendance mother.

5.4 Parental Perception of Obesity Consequences in Childhood.

The majority of the parents (75 %) demonstrated good basic health knowledge regarding the obesity consequences in childhood either physical or psychological health

problems. Similarly Malaysian study conducted by Noor et al (2008) proves that the majority of the parents knew the health complications related to obesity. ⁽⁵¹⁾ In current study parents' awareness regarding the psychological problems related to obesity in children; were 41.2% agreed that obese children were more likely to have problems in their social relationship with other children than children who are not obese. Furthermore 26.6% of the parents disagree that obesity increased the risk of having medical and psychological problems. Also 39.5% of parents agreed that the childhood obesity is a significant cause of peer rejection, this might be their children have less friends, or their children avoid to participate in community activity with children. While 29.0% of parents disagree that the childhood obesity is a significant cause of peer rejection, and this might because their children were still at primary grade and they did not involve with different friendship at the school, and the harassments practice mostly happening between the older children.

5.5 Children' Body Image Scale

Current study revealed that most (62.7%) of the parents underestimated their children body weight, the reason for parents underestimation because many of the children at the beginning of the obesity and they look like nearly to overweight rather than obesity or because parents emotionally feeling regarding their children body weight, and that consistent with other studies done by Susan Paxton et al (2002) which aimed to determine a child's accuracy of perception of their own body size, and Kathryn et al (2006) which studied parents' perceptions of their child's weight and health. ⁽⁶¹⁾⁽⁵²⁾ Furthermore there were no differences in parents' underestimation between children' genders, in addition; most of the parents desired a smaller boy size for their children than the perceived figure, which mean parents' dissatisfaction of their children' body weight, because parents had good basic health knowledge regarding body overweight consequences.

5.6 Obesity in Children and Parental Stress

Unfortunately; there are no published investigations specifically examining the parental stress of caring for children with obesity. This was the first investigation "to our knowledge" designed to specifically exam the parental response (stress) to caring for a child with obesity. The results demonstrated that parents of obese children are at risk for experiencing elevated levels of psychological distress. Moreover, current study finding revealed that the degree of parental stress is similar to that for parents of children with other chronic illnesses, such as diabetes and cancer in study conducted by Tamar et al (1999).⁽⁵⁷⁾

Current study investigated difficult events which parents of children who have obesity experience. Accordingly parents experienced stress as they consider themselves responsible for their children's obesity in some way, and often experiencing angry feeling when they think about their children's weight. Due to their distress because of their children's weight parents keep on speaking with their partner and with their children about children weight. Parents were experiencing stress because of their child weight could be worsened and because of the long term impact of the obesity on their children, and feeling uncertain about their children future. Most (80.7%) of the parents know that their children were hurt because of their body weight this was reflected in their children mood change quickly, this puts parents to be stressed about their children's personality. In current study (58%) of parents agreed that their children's weight is critical weight, as sometimes parents (29.4 %) not feeling easy to accept critiques from others about their children's weight. Parents said that sometimes they felt misunderstood by their families/friends to the severity of their children's weight. Parents think twice before they took their obese child for cloth shopping to avoid the embarrassments in case they did not found fit cloth upon child's age and size. Parents also felt helpless very often over their children's body weight and they

claimed that they cannot handle things very well. In addition; parents declared that they witnessed their children had trouble eating but in the same time parents felt uncertain to punish their children because of their sedentary lifestyle. Also parents mentioned that they made decisions about their children's lifestyle very often. The majority of the participants parents' felt guilty because of their obese child, compared with the other healthy weight children around them. Furthermore parents admire that sometimes there are quite few things bother them about their own lifestyle, as most of them felt trapped by parents responsibilities. On the other hand the parents contact with the health professionals to follow on their children's weight was less than the expected, especially when the majority (86%) of parent said that they can get help and support when they need it, but in the same time (46.4%) of the parent they never speak with the health center nurse about the child's weight status, in the same time 43.2% of the parents answered that sometimes they discuss their children's weight with family physician. Also 44.1% of parent said that they never brought their children to the health centers or hospitals to follow up of their children's body weight, whereas 47.4% of the parents said sometimes they took their children for follow up, and this might happen because of the health team parents' notification not regarding the child body weight. The study revealed that there was significant correlation between physicians perception of child weight and child BMI, it's might because of profession health team looking after the child medical problem when the parent visit the health center and ignoring the child body weight since the parent did not complain regarding the child weight. Previous research has shown that few parents recalled that their child's doctor had ever counseled that their child was overweight or gaining weight too fast.⁽⁵²⁾

Furthermore study done by Myers et al (2000) revealed that Parents are not the only ones who have difficulties in recognizing obesity in children, also they found that 18.7% of health centre staff did not recognize obesity in children who were clinically

obese. Research evidence suggests that only 20% of obese children are recognized and offered treatment for their obesity.⁽⁴⁵⁾

Current study revealed that there are no differences between fathers and mothers perceptions of the level of obesity during the childhood period. Mothers showed more stress level compared to fathers regarding their children's body weight. Also results showed that middle age fathers (40 – 59 years old) perceived obesity in children and they were psychologically distressed because of their children' body weight status, and we found that mothers below age of 39 years old perceived obesity in children and they were psychologically distressed because of their children' body weight status more than the other group of mothers age. There is a significant association between both fathers and mothers' nationalities, parental stress and parental perception of obesity in children especially when there are around 22 nationalities came from different community, different cultures, manners and attitudes. These facts added a value to the study how different communities could perceive obesity in children and at which level this will affect their psychological health. Moreover the study explored that there is relation between fathers and mothers level of education and perception level of obesity in children. The level of education affected the level of stress within parents; this might happen because the sample consist of different educational levels started from primary level to PhD certificate holders. Whereas in Malaysian study conducted by Noor et al (2008) revealed inverse our study that the level of parental education did not have any significant association with their perception of the child's weight status.⁽⁵¹⁾ In comparison with other study done by Amy et al (2000) done on American population where mothers with low education were more likely to have an incorrect perception of their children's weight.⁽³⁰⁾ This could be due to the difference education levels and different educational system in the different countries where the parents came from.

Thus, we were also interested in how parents perceived their children's weight according children genders, and we found that there are no differences in children genders in how their parents perceiving their weight, which prove a study done in Australia by David et al (2005) shown that parental perception and concerns did no differ according to the child's sex.⁽⁴⁹⁾ And this is conform on parental stress level and child gender wherein no relation between both, whereas parental stress associated with children age, whenever the child age in the study increase their parent stress increase, this might "parents with a child 9 years or above of age parents were more likely to recognize their child as overweight than younger age". Parents of older children were more likely to be worried about their child's weight if they perceived their children as less active than other children.⁽⁵²⁾ The same things another study conducted by Maynard et al (2003) prove that mothers were less likely to miss classify older children as overweight as compared with younger children.⁽⁵⁰⁾ With this in mind parents may believes that young children with times may grow out of being obese because they still young and active in their movement.

On one hand parental perception and parental stress level associated significantly with both government and privet schools. On the other hand there is no correlation between school categories and children's BMI, whereas study done by Leonel et al (2006) revealed that the children attending public schools had greater triceps skin fold thickness than children attending private schools.⁽⁶⁴⁾ At the end of the study, school nurses in the intervention schools were provided with a list of students who has an obese weight according to CDC cutoff point to follow their weight status.

5.7 Limitations

The major limitation of this study was:

1. The self-reported data is limited by the truthfulness of the parents' response to the questionnaire, which increased risk for bias error.

2. Survey time limiting, because of end semester of the study year.
3. The use of closed-ended questions in our survey did not allow us to explore why parents did not perceive their obese children to be obese and what exactly from their opinion could bother them regarding their obese child status which exposes them to stress.
4. The length of survey questionnaires instruments for parents discouraged some parents to participate in this study.

5.8 Strengths

Strength of this study was that we surveyed a large demographically diverse sample of parents; furthermore there were many different nationalities involved in the survey formed several cultures.

5.9 Conclusions

Obesity is known as a common chronic disorder in developed societies because of its impact on human being lives as well as on health financial side. So, improving the public awareness of the impact of childhood obesity is essential to decrease the short and long-term effects of the obesity. The involvement and support of parents is essential to the success of any intervention aimed at prevention and management of obesity in young children as long as the parents has an adequate awareness and perception of obesity in childhood. Because Parents who are aware of and concerned about their child's weight maybe more willing to overcome the barriers and help their child maintain or achieve a healthy weight.

In this sample of parents we found that most of parents are very concerned about their children' body weight, they noticed that their children gaining weight and in the same time most of them they failed to perceive their children as obese. There is no relation between children BMI and families' monthly income, whereas children' daily pocket

money affected the children BMI; also working mothers has no effect on children BMI. Moreover parents' age has effect on their children BMI, the total children in the family and child order within his family correlated with children BMI. Most of the parents were reported semi level of awareness, they perceive and aware the obesity causing and consequences in childhood. Parents showed high level stress related their children' body weight status; parents' nationalities and educational level effected their perception of obesity in children. Mothers showed higher stress than fathers due to their children weight status, parental stress levels were varied among the parents' nationalities and level of education, children genders has no effect on parental perception level or parental stress level, while parental stress level effected by children age. Besides, school category related with the perception level and parental stress level in parents.

5.10 Recommendations

Collaborative strategies are necessary to promote healthy communities, healthy families, healthy schools, and healthy children within our nation.

5.10.1 Recommendation for further research

Staff nurse should be familiar with recent scientific research related to parental stress assessments and parental perception assessment. Because of the absence of nursing studies further longitudinal researches as well as focus groups are needed in UAE that focus on childhood obesity, parental awareness and parental stress for parents of children with obesity to provide more finding. In addition, more studies are needed to explore and develop assessment tools for parental awareness and parental stress, which are in conformity with our local community. Developing harmony relationships in the community is critical, if the researcher or the researches are never truly coordinate access to the community, the quality of the research will suffer. Taking time early on in the

research project to inspire healthy, respectful relationship is a good investment. Furthermore the next research should contain comprehensive actions aimed at increasing parental awareness and reducing parental stress in UAE by health team education, parent education, and support groups for parents of children with obesity. This study was conducted in Al Ain city in Emirate of Abu Dhabi, future studies have to cover a wide geographical range and larger sample of schools and students among UAE.

5.10.2 Recommendation for School health Departments in UAE

For our recommendation we adapted the healthy People 2010 Objectives Related to Schools and Chronic Disease Prevention. Of the 107 Healthy People 2010 objectives related to adolescents and young adults, 7 focus on the role of schools in improving the health of young people.⁽⁶⁵⁾

- Objective 07-02: Increase the proportion of middle, junior high, and senior high schools that provide school health education to prevent health problems in the following areas: unhealthy dietary patterns; inadequate physical activity; and environmental health.⁽⁶⁵⁾
- Objective 07-04: Increase the proportion of elementary, middle, junior high, and senior high schools that have a nurse-to-student ratio of at least 1:750.⁽⁶⁵⁾
- Objective 19-15: Increase the proportion of children and adolescents aged 6 to 19 years whose intake of meals and snacks at schools contributes proportionally to good overall dietary quality.⁽⁶⁵⁾
- Objective 22-08: Increase the proportion of public and private schools that require daily physical education for all students.⁽⁶⁵⁾
- Objective 22-09: Increase the proportion of adolescents who participate in daily school physical education.⁽⁶⁵⁾

- Objective 22-10: Increase the proportion of adolescents who spend at least 50% of school physical education class time being physically active. ⁽⁶⁵⁾
- Objective 22-12. Increase the proportion of public and private schools that provide access to their physical activity spaces and facilities for all persons outside of normal school hours (that is, before and after the school day, on weekends, and during summer and other vacations). ⁽⁶⁵⁾

5.10.3 Recommendation for Community leaders and policy makers in UAE

For our recommendation we adapted eight priority actions for improving the health of young people cited by CDC's school health guidelines. ⁽⁶⁶⁾

The following eight priority actions that Abu Dhabi community leaders can take to improve the health and academic outcomes of their young people:

1. Monitor critical health-related behaviors among young people and the effectiveness of school policies and programs in promoting health-enhancing behaviors and better health. ⁽⁶⁶⁾
2. Establish and maintain dedicated program-management and administrative-support systems at Abu Dhabi level. ⁽⁶⁶⁾
3. Build effective partnerships among Abu Dhabi-level governmental and nongovernmental agencies and organizations. ⁽⁶⁶⁾
4. Establish policies to help local schools effectively implement coordinated school health programs and CDC's school health guidelines. ⁽⁶⁶⁾
5. Establish a technical-assistance and resource plan that will provide local school districts with the help they need to effectively implement CDC's school health guideline. ⁽⁶⁶⁾
6. Implement health communications strategies to inform decision makers and the public about the role of school health programs in promoting health and academic success among young people. ⁽⁶⁶⁾

7. Develop a professional-development plan for school officials and others responsible for establishing coordinated school health programs and implementing CDC's school health guidelines. ⁽⁶⁶⁾

8. Establish a system for evaluating and continuously improving local school health policies and programs. ⁽⁶⁶⁾

5.11 Applications

Also the findings of this study emerge precious information and several important implications for future work can be gleaned from the current study. The applications for the study findings are indicated for nursing research, nursing practice, nursing education and nursing administration.

5.11.1. Nursing research

Nurses should have clear goals, which are based on the theories of behavioral change such as health belief model and transtheoretical model, rather than those that depend on providing information only. By doing so nurses can work on preventative strategies in partnership with families to manage these major health problems. There are two primary ways for future research that are needed to deal with the problem of childhood obesity, parental awareness and parental psychological distress. The first is research on how to increase health awareness and ideal lifestyle behaviors not only within children but including the whole family, and the second is how to eliminate and control the parental stress related their obese children.

5.11.2. Nursing practice

Nurses are ideally placed to support parents and families who are trying to manage overweight or obesity in their children. A key step in forming effective liaisons between health professionals and parents is ensuring shared perceptions; both parents and

professionals understand what childhood obesity is and understand its full social, emotional and health consequences. The result of current study showed that most of the parents are semi aware about the obesity in children and high parental stress regarding their obese children. Nurses should provide students with opportunities to engage in healthy eating and physical activity behaviors, help students develop the knowledge, skills, and attitudes necessary to adopt and maintain these behaviors and integrate school-based physical activity and nutrition programs with family and community life. School nurses should evaluate school programs in healthy eating and physical activity and make improvements where needed. Mothers and their children are frequent users of health services and though a child's weight may not be a primary reason for the presentation to a health professional, recording weight and height are normal and routine aspects of community nurses. However, despite collecting height/weight information, it may not be fed back to mothers in such a way that they can fully understand where their child sits in relation to ideal height/weight ratio. Thus, community nurses should conduct frequent community assessments to determine the community health awareness and must assess parental awareness of obesity in children and parental stress to provide appropriate support, information, guidance and facilitate positive and effective solutions to families' health.

5.11.3 Nursing Education

Education of community health professionals such as nurses should include family assessment techniques base on our local cultures were the study conduct. Moreover this study can be used as base to implement a regular program for health education for nurses and health team worker to know how they can assess the parental stress, parental perception and how to deal with different status and what the appropriate strategies to decrease that psychological distress and the way to maintain their awareness. Current study

could be as valued and rich reference for student nurses whom concerning of child weight problems such as overweight, obesity or even underweight, on the same time family health problems such as parental stress related to children with chronic diseases and family awareness.

5.11.4 Nurses' Administration

Nurses' administration has the big role in implement appropriate policy to prevent parental stress and improve parents' awareness among parents with obesity or overweight children with collaboration of Ministry of Health, Ministry of Education, Ministry of information and other governmental and privet organizations. Furthermore effective intervention support programs aimed at reducing parental stress, improving community awareness and enhancing healthy lifestyle not only for the children but also for the whole family. This program should be implemented and evaluated by the administrators for the effectiveness of the program. Moreover nurses administrators should support and encourage nurses' staff to adapt such researches to benefit the community were they live and benefit the decision makers to take measures while their legislation for the community health.

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Appendix A
Permission for using Children's Body Image Scale

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RE: Good afternoon Professor Susan Paxton

Monday, December 29, 2008 2:44 AM

"Susan Paxton" <Susan.Paxton@latrobe.edu.au>

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-  Truby & Paxton '02.pdf
-  Truby & Paxton 2008.pdf

Dear Salma,

I hope you find these useful. You are welcome to use them. Good luck with your research.

Susan

From: Salma [mailto:salma722000@yahoo.com]
Sent: Wednesday, 24 December 2008 10:02 PM
To: Susan Paxton
Subject: Good afternoon Professor Susan Paxton

Good afternoon Professor Susan Paxton

I'm so glad to send you this e-mail. First of all I would like to introduce my self: my name is Salma Al Nuaimi am female aging 35 years old, my original country is United Arab Emirates and recently am studying abroad in Kingdom of Jordan in Jordan university of science and Technology, am studying master degree in Community Health Nursing second year, recently I start my thesis research under title: Parent's perceptions of obesity in children and stressors related to their obese child. Am going to conduct the study in my county in Emirate of Abu Dhabi (capital of United Arab Emirates), on the parent of obese children aged from 6 – 12 years olds both male and female, and the sample will be selected from the school.

So; I have been reed many article and researches done by you, and I would request from you to help me in my research through providing me the instrument tools that you developed to measure the children body image scale and to give me the authority to use it in my research. Also if it's possible to guide me to find an instrument scale that measure the parent perceptions of their child obesity and the stressors that the parents could suffer from because of their child obesity.

Profesor Susan Paxton ; thank you for your time. And I will really appreciate it from you to help me.

Waiting to your respond.

Respectfully yours,

Salma Al Nuaimi

Appendix B

Letter from Jordan University of Science and Technology

For Ministry of Education in United Arab Emirates

جامعة العلوم والتكنولوجيا الأردنية
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جامعة الإمارات العربية المتحدة
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تاريخ: ٢٠٢٠/٠١/١٠
 رقم الملف: ٩١٤/٥٤١١٦/٥
 رقم الوثيقة: ٥٠٩/٢١١٥

لمن يهمه الأمر
وزارة التربية والتعليم/الإمارات العربية المتحدة

تحية طيبة وبعد،

تقوم طالبة ماجستير ترميض صحة المجتمع سلمى عمر النعمي (20063040062) بإجراء بحث كمنظاب لرسالة الماجستير التي تعد لها في جامعة العلوم والتكنولوجيا الأردنية.

بإهداء الوالدين للسنة لدى الأطفال والضغط النفسية الناجمة عنها

Parent's perceptions of obesity in children and stressors related to their obese child

وتهدف هذه الدراسة لإثبات الوالدين لأثر السمنة والضغط لديهم من وجود طفل بدين في العائلة. علماً بأن الفئة المستهدفة هم أولياء أمور الطلبة في المراحل الأساسية من التعليم في مدارس الحكومية والخاصة وللشريحة العمرية من 6 إلى 12 سنة، وتشمل الدراسة معلومات عن الوزن والطول. أهدو شاكرة تكرمكم بالموافقة وتسهيل مهمة الطالبة سلمى النعمي لتوزيع وجمع الاستبيان المرفق، وستعامل البيانات بمسرية تامة.

شاكرة حسن تعاونكم.

وتفضلوا بقبول فائق الاحترام،،،

سادة الأستاذة الدكتورة سلمى النعمي
 أستاذة في قسم الصحة العامة
 كلية التربية
 جامعة العلوم والتكنولوجيا الأردنية
 Zarqa 13110, Jordan
 ق.أ. عميد كلية التربية
 الدكتور منتهى غرابية
 عميد كلية التربية
 جامعة العلوم والتكنولوجيا الأردنية



سادة الأستاذة سلمى النعمي
 أستاذة في قسم الصحة العامة
 كلية التربية
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Appendix C

Letter from Jordan University of Science and Technology For Seha – Abu Dhabi Health Services in UAE

Jordan University of Science & Technology
Faculty of Nursing



الجامعة الأردنية
كلية التمريض

N. 17
15.3.2009

SEHA- Abu Dhabi Health Services Company

Dear Sir,

This is to certify that the Ms. Student Salma Omar Al Neimi is concluding a research project as part of fulfilling requirements for the master degree in nursing at Jordan University of Science and Technology (JUST) entitled:

Parent's perceptions of obesity in children and stressors related to their obese child

This study aims at identify parental perceptions of the causes of obesity and the use of Body Mass Index as a screening tool for obesity, and to determine parental stressors that they may have because of their obese child. The target group will be the parents of students aged from 6-12 years old, in government and private sector schools in Emirate of Abu Dhabi.

We are grateful for your facilitation of the student mission.

Thanks for your cooperation.

Dr. Munirah Ghazalbeh
Dean, Faculty of Nursing
Jordan University of Science
& Technology (JUST)
P.O. Box (3038)
Irbid 22110
Jordan



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Appendix D

Permission for Data Collection in Al Ain Educational District

UNITED ARAB EMIRATES
Ministry of Education
Dep. of Al Ain Educational Zone



دولة الإمارات العربية المتحدة
وزارة التربية والتعليم
إدارة منطقة العين التعليمية
قسم المناهج والبرامج التعليمية
الرقم: 2009/3/1
التاريخ: 2009/3/1

تصميم: 385
نسخة 2009

السادة / مديري ومديرات المدارس الحكومية والخاصة
المحترمين
تحية طيبة وبعد.....

م/ تسهيل مهمة باحث

في إطار التعاون القائم بين إدارة منطقة العين التعليمية ومركز الإمارات للدراسات
والمحفوظات الإسلامية، ستقوم الباحثة/ سمنى عمر النعيمي، بإجراء استطلاع رأي حول
"إدراك الوالدين لمشكلة السمنة لدى الأطفال والاضغوط التجمعية الناجمة عنها".
يرجى التكرم بتسهيل مهمة الباحثة.

مع جزيل الشكر والتقدير

أ/ عائشة راشد الشويهي
رئيسة قسم المناهج والبرامج



مرفق:

• كتاب كلية التمريض

Typed by: Shaikha Al-Khibe



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العين - ص.ب 1008 - هاتف: 03/ 7630000 - فاكس: 03/ 7632006
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Appendix E

English Letter for whom it May Concern for Ensuring Confidentiality

PARENT/GUARDIAN INFORMED CONSENT FORM

Title of Project: Parent's perceptions of obesity in children and stressors related to their obese child.

Dear Parent:

Specifically, the purpose of this study is to evaluate parental perceptions of the causes of obesity and the use of Body Mass Index as a screening tool for obesity, and to determine parental stressors that may have because of their obese child. Because obesity has become an increasing problem in children, we are interested in studying parental perceptions of Body Mass Index and obesity in school age children and stressors related to their obese child. We are asking that you complete the attached self administer questionnaire within the next day. It should take about 10-15 minutes to complete. Your responses to the survey are anonymous, as we are not collecting information that could link your survey specifically to you. By returning the survey, you are indicating your informed consent to participate in this study.

Procedures: You will be asked to complete a questionnaire and your child will be asked for measurement of height and weight. These measurements will be obtained during the school day at the school clinic. Your child's nurse and responsible teacher will be in the room during this time. Your child's height and weight will be private. Only the research team, you, and the principal will see your child's measurements. Both a report of your child's weight status and a questionnaire will be sent home with your child in a sealed envelope. The questionnaire should be returned to school with your child and given to his or her responsible teacher

The college review board at Jordan University of Science and Technology has approved this research. Your participation is highly appreciated, and thanks for your time.

Respectfully,

Salma Omar Al Nuaimi

Master Nursing sciences/ Community Health Nursing

Jordan University of Sciences and Technology

Appendix F

Arabic Letter for whom it May Concern for Ensuring Confidentiality

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

عزيزي الأب.....عزيزتي الأم

الموضوع / بحث بعنوان : إدراك الوالدين لمشكلة السمنة لدى الأطفال والضغط النفسي الناجمة عنها

تهدف هذه الدراسة الى التعرف على مدى ادراك الوالدين للسمنة عند الأطفال والضغط النفسي لديهم من وجود طفل بدين في العائلة حيث أن السمنة وزيادة الوزن أصبحت مشكلة متزايدة عند الأطفال الرجاء الإجابة على الاستبيان المرفق والذي سيأخذ من وقتكم 10 - 15 دقيقة لإكماله، ثم إعادته مع طفلكم في اليوم التالي.

ستكون استجابتكم للمشاركة في البحث سرية، حيث أننا لن نجمع أية معلومات من الممكن أن تدل على هوية المشارك، وفي حال إرجاعكم للاستبيان في اليوم التالي يكون هذا إشعار منكم بالموافقة على المشاركة في البحث.
خطوات عملية البحث:

سيكون دوركم هو ملئ الاستبيان المرفق، بعد أن يقاس وزن وطول الطفل، علماً بأن قياس وزن وطول الطفل سيكون في يوم دراسي في عيادة المدرسة، من قبل ممرضة المدرسة ومربية صف الطفل والباحثين.

و ستعامل قياسات وزن وطول طفلكم بكل سرية ولن يطلع عليها أحد عدى فريق البحث ، ثم سيتم إرسال النتائج مع الطفل إليكم بمغلف مغلق. عليكم الاطلاع على قياسات طفلكم ثم المباشرة بملئ الاستبيان، ومن ثم إرجاع الاستبيان مع طفلكم في اليوم التالي إلى المدرسة ويسلمها إلى المعلم/المعلمة المسؤول في الفصل.

تم مراجعة هذا البحث ومصادقته من قبل لجنة البحث على الإنسان بجامعة العلوم والتكنولوجيا الأردنية.

مشاركاتكم هي أساس إنجاح البحث، و شكراً لوقتكم.

سلمى عمر النعيمي

ماجستير تمريض/ صحة مجتمع و صحة نفسية

جامعة العلوم والتكنولوجيا الأردنية

Appendix G
Questionnaire Arabic Version

Child Demographic Data:

Age (in years):
Gender: Male <input type="checkbox"/> Female <input type="checkbox"/>
Body height:.....(without shoes and not leaning against wall)
Body weight:.....(without shoes)
BMI:

1. Study place

Urban

2. School category

Governmental Privet

3. The questionnaire filer relationship with the concerned child: Father Mother

Parental Socio-Demographic Data:

Father:

4. Father age:

5. Father weight:

6. Nationality:

7. Father height:

8. Do you feel you are at the right weight right now?

Yes No

9. Working father

Yes No

10. Level of education of the father

Preparatory or less

High school or above

Bachelor

Master and PhD

Mother:

11. Mother age:

12. Mother weight:

13. Nationality:

14. Mother height:

15. Do you feel you are at the right weight right now?

Yes No

16. Working mother

Yes No

17. Level of education of the mother

Preparatory or less

High school or above

Bachelor

Master and PhD

18. Total number of children in the family including this child: -----

19. The child order between his/her brothers and sisters: -----

20. How many children in the family are considered to be obese: -----

21. Please mention the family monthly income (in DH): -----

22. The child's daily pocket money (in DH):-----

23. Are you concerned about your child's weight?

1) Not at all

2) A little

3) Moderately

4) Very concerned

24. I feel my child is

1) About the right weight

2) Overweight

3) Obese

25. When did you notice that your child is become obese: -----

26. Did child's doctor ever tell you that your child is gaining weight too fast or is overweight?

Yes

No

27. In the past week, how many times was a family meal purchased from a fast food restaurant.

1) Never

2) 1 time

3) 2 times

4) 3 times

5) More than 3 times

28. Child exercise

1) Not enough

2) Just right

3) Too much

4) Not doing at all

29. Do you think your child eats

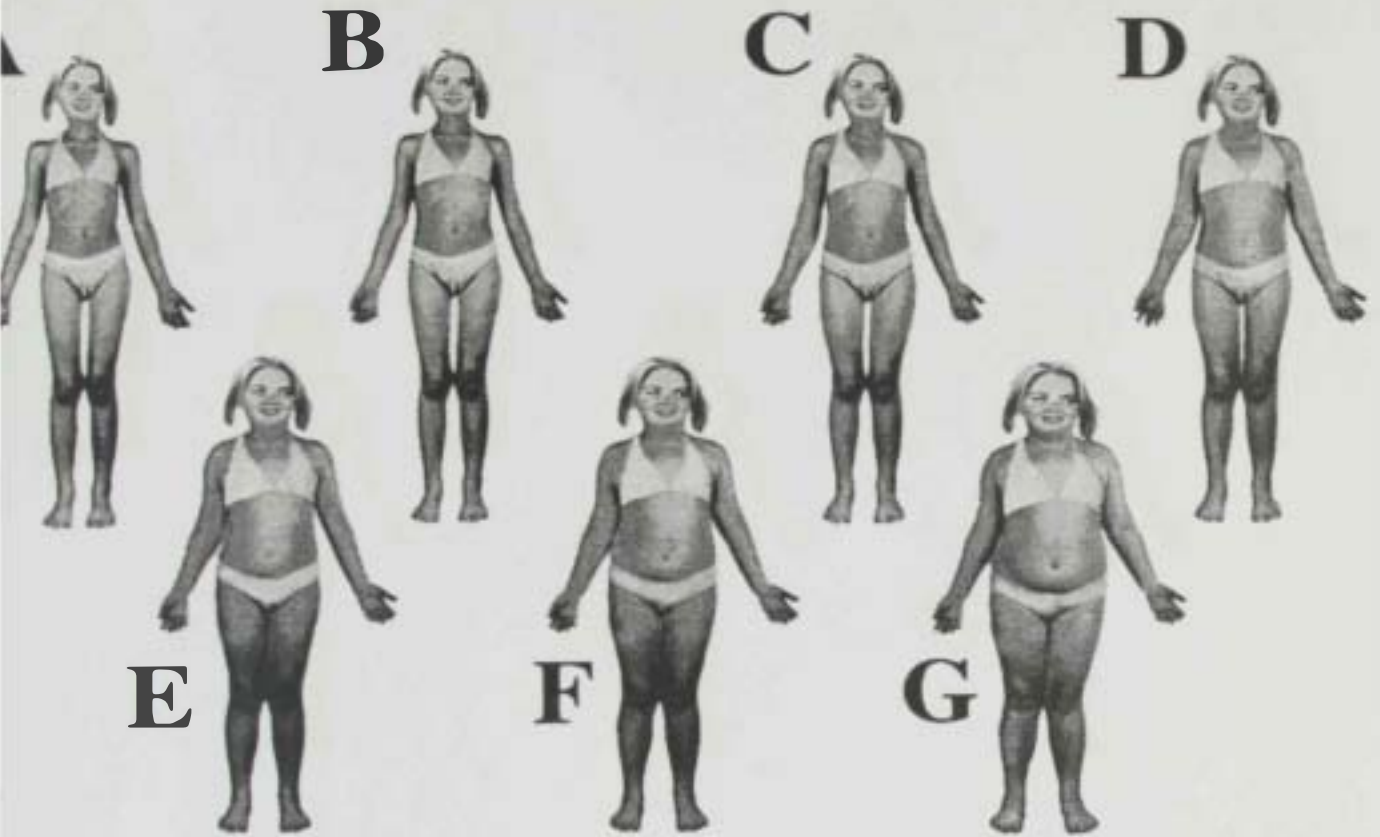
1) Too little

2) Just right

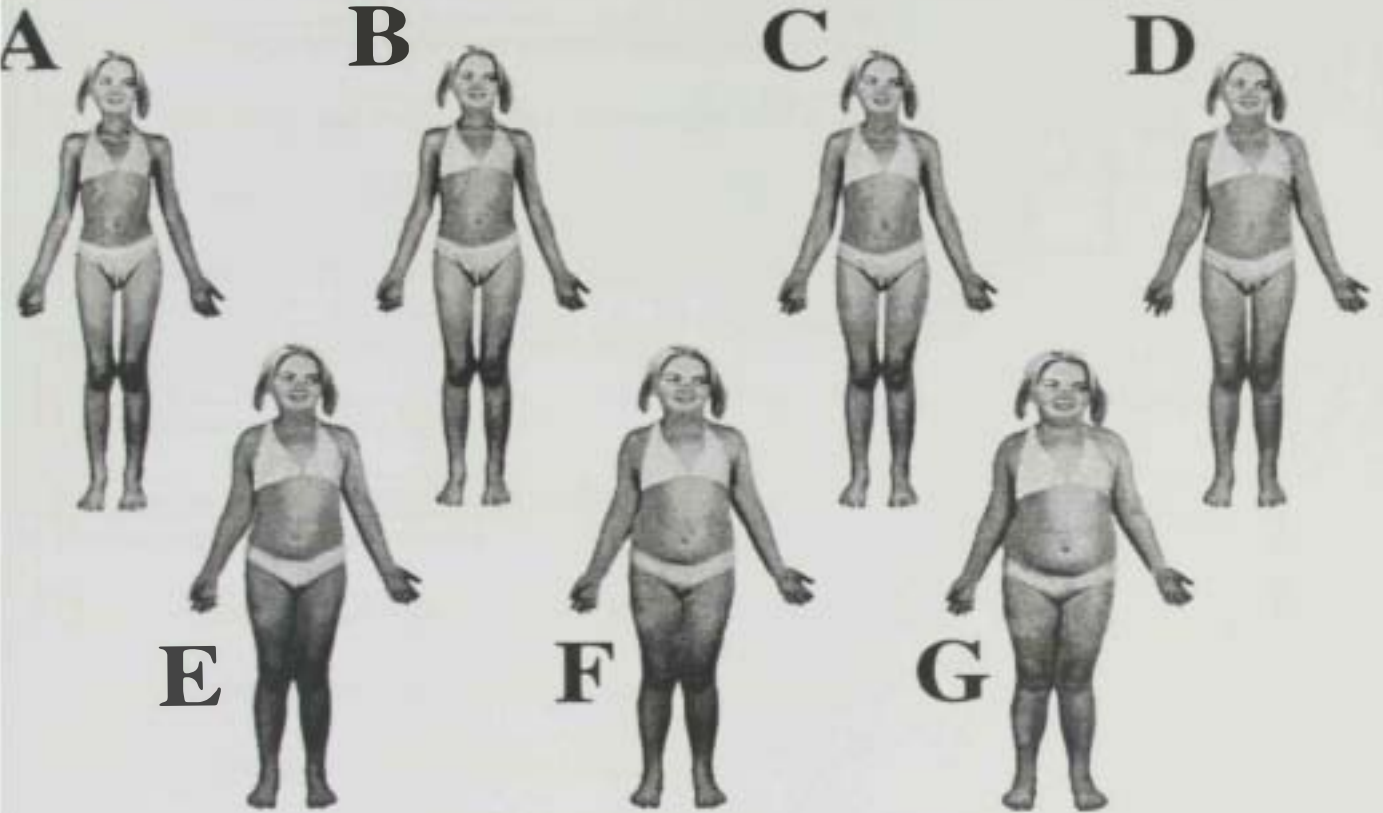
3) Too much

30. Daily average hours my child on watching television and computer game: -----

Please pick out the figure you believed closest to your child size.



Choose the figure that you think it's the ideal body size you would most like it for your child.



Parental Perceptions	1=Strongly Disagree 2=Disagree 3=Agree 4=strongly Agree			
Parental perception of obesity causing in childhood				
I can influence my child's amount of physical activity	1	2	3	4
Eating habits of parents influence the eating habits of their children	1	2	3	4
Children will exercise more if their parents exercise regularly	1	2	3	4
Modern technology and media playing an important role in children obesity	1	2	3	4
Sedentary lifestyle is considered a major cause of obesity	1	2	3	4
Control of what children eat is the responsibility of parents	1	2	3	4
Hereditary play a major role in children obesity	1	2	3	4
I can influence my child's food choices	1	2	3	4
Parental perception of obesity in childhood				
Normal weight is important to health of children.	1	2	3	4
Childhood obesity is becoming more common.	1	2	3	4
Reducing childhood obesity is easier than reducing obesity in adulthood.	1	2	3	4
I am worried about my child's weight right now	1	2	3	4
Obese children are likely to become obese adults	1	2	3	4
Parental perception of obesity consequences in childhood				
Obese children are more likely to develop diabetes (high blood sugar), hypertension (high blood pressure) and heart problem than children who are not obese	1	2	3	4
Obese children are more prone for bone complication than normal children	1	2	3	4
Obesity enhance early puberty in male	1	2	3	4
Obese children are more likely to develop skin problems than other normal weight children	1	2	3	4
Obesity enhance puberty in female children	1	2	3	4
Childhood obesity is a significant cause of peer rejection	1	2	3	4
Obese children are more likely to have problems in their social relationship with other children than children who are not obese	1	2	3	4

Parental Stress measurement Scale

Dear parents.....

Below is a list of difficult events which parents of children who have obesity. Please read each event carefully, and circle HOW OFTEN the event has occurred for you in the past month, using the 5 point scale below.

	HOW OFTEN?				
	1=Never, 2=Rarely, 3=Sometimes, 4=Often, 5=Very often				
1. Bringing my child to the clinic or hospital to follow up on his weight	1	2	3	4	5
2. Worrying that I may be responsible for my child's obesity in some way	1	2	3	4	5
3. Seeing my child's mood change quickly	1	2	3	4	5
4. Speaking with doctor regarding my child's weight	1	2	3	4	5
5. I experience angry feelings when I think about my child's weight	1	2	3	4	5
6. Speaking with my child about his/her weight	1	2	3	4	5
7. Speaking with the nurse regarding my child's weight	1	2	3	4	5
8. Speaking with my partner about our child weight	1	2	3	4	5
9. Watching my child have trouble eating	1	2	3	4	5
10. Worrying that my child's weight will worsen	1	2	3	4	5
11. Knowing my child is hurting because of his/her weight	1	2	3	4	5
12. Feeling guilty because my child become obese, whereas the other children remained healthy weight	1	2	3	4	5
13. Worrying that my child were prone for teasing from his/her colleagues in the school	1	2	3	4	5
14. Making decisions about my child's lifestyle	1	2	3	4	5
15. Thinking about my child being isolated from others because of his/her weight	1	2	3	4	5
16. Worrying about the long term impact of the obesity on my child	1	2	3	4	5
17. Feeling helpless over my child's overweight and cannot handle things very well.	1	2	3	4	5
18. Feeling misunderstood by family/friends as to the severity of my child's weight	1	2	3	4	5

19. I am jealous of parents who have healthy weight children	1	2	3	4	5
20. Feeling uncertain about my child future	1	2	3	4	5
21. Thinking twice before taking my child for cloth shopping	1	2	3	4	5
22. Feeling uncertain about disciplining my child because of his/her sedentary lifestyle	1	2	3	4	5
23. Feeling scared that my child could get very sick or die because of his/her weight	1	2	3	4	5
24. Seeing my child sad because of his/her weight	1	2	3	4	5
25. Disagreeing with others that my child's weight is critical weight	1	2	3	4	5
26. My hopes and dreams for my child's future are uncertain	1	2	3	4	5
27. I feel trapped by responsibilities as a parent	1	2	3	4	5
28. Worrying that my child personality will be affected negatively by his/her weight	1	2	3	4	5
29. There are quite a few things that bother me about my lifestyle	1	2	3	4	5
30. Seeing healthy weight children doing everyday activities makes me feel sad	1	2	3	4	5
31. Feeling easy to accept critiques from others about my child weight	1	2	3	4	5
32. Most times I feel that my child dose not like me and does not want to be close to me	1	2	3	4	5
33. When my child is actively playing, I found myself worried that she/ he will get hurt	1	2	3	4	5
34. My child doesn't seem to learn as quickly as most children at the school	1	2	3	4	5
35. I can get help and support when I need it	1	2	3	4	5
36. My child is not able to do as much as I expected him/her	1	2	3	4	5
37. Discussing with family members about my child's weight	1	2	3	4	5
38. Worrying about how friends and relatives dealing with my child	1	2	3	4	5
39. I trust my self to manage the future, whatever happens	1	2	3	4	5

Appendix H
Questionnaire Arabic Version

المعلومات الديموغرافية عن الطفل:

عمر الطفل (بالسنوات):	-----
الجنس:	<input type="checkbox"/> ذكر <input type="checkbox"/> أنثى
الطول:	----- (بدون حذاء)
الوزن:	----- (بدون حذاء)
مؤشر كتلة الجسم:	-----

الجزء الأول:

1. مكان السكن: مدينة
2. نوع المدرسة: حكومي خاص
3. علاقة معي الاستمراره بالطفل: الأب الأم

المعلومات الديموغرافية للآباء والأمهات
الأب:

4. عمر الأب: -----
5. وزن الأب: -----
6. جنسية الأب: -----
7. طول الأب: -----

8. هل تشعر بأنك في الوزن الصحيح الآن؟ نعم لا
9. هل يعمل الأب؟ نعم لا

10. المستوى التعليمي للأب:

- الإعدادي أو أقل
- الثانوية أو أعلى
- البكالوريوس
- ماجستير أو دكتوراة

الأم:

11. عمر الأم: -----
12. وزن الأم: -----
13. جنسية الأم: -----
14. طول الأم: -----

15. هل تشعرين بأنك في الوزن الصحيح الآن؟ نعم لا
16. هل تعمل الأم؟ نعم لا

17. المستوى التعليمي للأم:

- الإعدادي أو أقل
- الثانوية أو أعلى
- البكالوريوس
- ماجستير أو دكتوراة

18. العدد الإجمالي للأطفال في عائلتك بما فيه هذا الطفل: -----

19. ترتيب الطفل بين اخوته واخواته:

20. كم طفل من عائلتك يعتبر بدين/سمين:

21. رجاء اذكر الدخل الشهري لعائلتك (بالدرهم الإماراتي):

22. المصروف اليومي للطفل (بالدرهم الإماراتي):

23. هل أنت مهتم بوزن طفلك/طفلاتكم؟

(1) غير مهتم

(2) قليلا

(3) مهتم جدا

24. أحس بأن طفلي/طفلاتي:

(1) وزنه مقارب للوزن المقبول (طبيعي)

(2) زائد الوزن

(3) بدين

25. متى لاحظت بأن طفلك أصبح بدين/سمين:

26. هل سبق و أخبركم الطبيب بأن طفلك/طفلاتك يكتسب وزن سريع جدا أو أن لديه وزن زائد

لا

نعم

27. في الاسبوع الماضي، كم مره اشتريت وجبة عائلية جاهزه من المطعم:

(1) أبدا لم أشتري

(2) مره

(3) مرتين

(4) ثلاث مرات

(5) أكثر من ثلاث مرات

28. مدى قيام طفلك بأداء التمارين الرياضيه

(1) ليس كافيا

(2) في المعدل الطبيعي

(3) كثيرا

(4) لا يتمرن مطلقا

29. هل باعتقادك أن طفلك يأكل

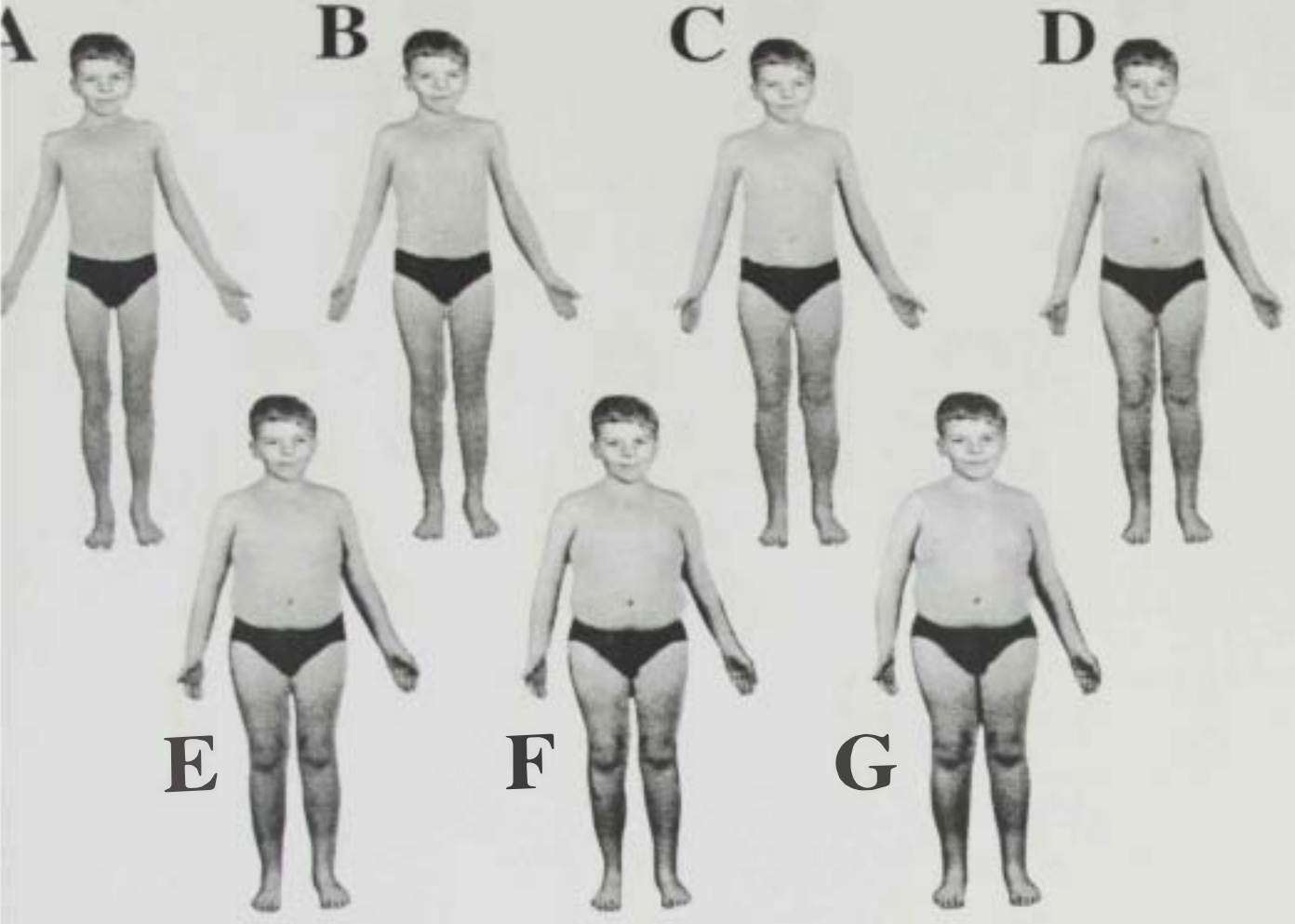
(1) كمية قليلة جدا

(2) كمية طبيعية

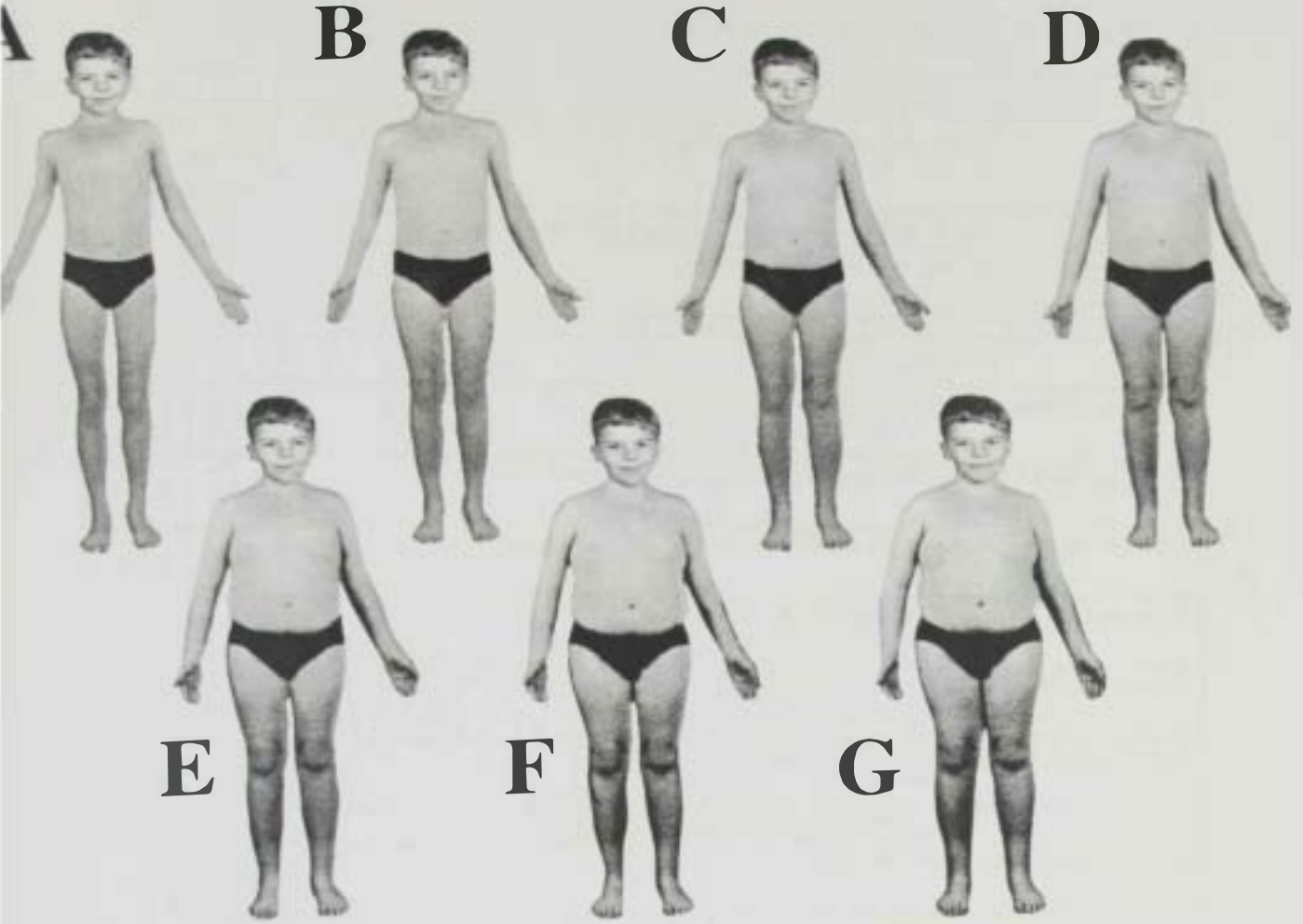
(3) كمية كثيرة جدا

30. متوسط عدد الساعات اليومية التي يقضيها طفلي بمشاهدة التلفاز والعباب الحاسوب هي:

الرجاء اختيار الصورة الذي تعتقد أنها أقرب إلى حجم طفلك



اختر الصورة التي تعتقد بأنها حجم الجسم المثالي الذي تفضله لطفلك



الجزء الثالث:

يهدف هذا الجزء من الاستبيان إلى تحديد مستوى إدراك الوالدين للسمنة، مسبباتها ونتائجها عند الأطفال، الرجاء الإجابة على جميع النقاط التالية حسبما ترى أو تشعر:

إدراك الوالدين			
1 = لا أوافق بشده	2 = لا أوافق	3 = أوافق	4 = أوافق بشده
إدراك الوالدين لمسببات السمنة في مرحلة الطفولة			
4	3	2	1
1. لدي القدرة في التأثير على مدى النشاط البدني لطفلي			
4	3	2	1
2. عادات أكل الآباء و الأمهات يؤثرُ على عادات اكل اطفالهم			
4	3	2	1
3. يمارس الاطفال الرياضة أكثر إذا مارسها الوالدين بانتظام			
4	3	2	1
4. التقنيات الحديثة والإعلام المرئي يلعبان دورا مهما في زيادة سمنة الأطفال			
4	3	2	1
5. اسلوب الحياة (الرغيد) الذي يتصف بقلّة الحركة يعتبر المسبب الرئيسي للسمنة			
4	3	2	1
6. السيطرة على ما يأكله الاطفال هو مسؤولية الوالدين			
4	3	2	1
7. تلعب الوراثه دورا اساسيا في سمنة الاطفال			
4	3	2	1
8. يُمكنني أن أؤثر على إختيارات طفلي لغذائه			
4	3	2	1
إدراك الوالدين للسمنة في مرحلة الطفولة			
4	3	2	1
9. الوزن الطبيعي مهم لصحة الاطفال			
4	3	2	1
10. أصبحت سمنة الطفولة شائعة			
4	3	2	1
11. تخفيف السمنة في سن الطفولة أسهل من تخفيف السمنة عند الراشدين			
4	3	2	1
12. أنا قلق بشأن وزن طفلي في الوقت الحالي			
4	3	2	1
13. الاطفال البدينون لديهم الاستعداد بأن يُصبحوا بدينين في سن الرشد			
4	3	2	1
ادراك الوالدين لنتائج السمنة في مرحلة الطفولة			
4	3	2	1
14. الاطفال البدينون اكثر عرضة ان يصابوا بمرض السكر (ارتفاع السكر في الدم)، و ارتفاع ضغط الدم (ضغط دم عالي) ومشاكل في القلب من الأطفال الذين ليسوا بدينين			
4	3	2	1
15. الاطفال البدينون معرضون أكثر لمشاكل العظام من الاطفال الطبيعيين			
4	3	2	1
16. السمنة تُحفز البلوغ المبكر عند الاطفال الذكور			
4	3	2	1
17. الاطفال البدينون اكثر عرضة لمشاكل الجلد من الاطفال ذوي الوزن الطبيعي			
4	3	2	1
18. السمنة تُحفز البلوغ المبكر عند الاطفال الإناث			
4	3	2	1
19. السمنة في مرحلة الطفولة من اهم اسباب نفور اصدقاء الطفل منه			
4	3	2	1

وزن طفلي					
5	4	3	2	1	19. أشعر بالغيرة من الوالدين الذين عندهم أطفال ذوي وزن صحي
5	4	3	2	1	20. أشعر بالقلق حول مستقبل طفلي
5	4	3	2	1	21. أفكر مرارا قبل أخذ طفلي لشراء ملابس له
5	4	3	2	1	22. أشعر بالقلق حول معاينة طفلي بسبب أسلوب حياته (الرغيد) المتمثل بقلة الحركة
5	4	3	2	1	23. أشعر بالخوف ان طفلي يُمكن ان يُصبح مريض جدا أو يموت بسبب وزنه
5	4	3	2	1	24. أرى طفلي حزين بسبب وزنه
5	4	3	2	1	25. اختلف مع الآخرين بان وزن طفلي وزن حرج (خطير)
5	4	3	2	1	26. آمالي واحلامي لمستقبل طفلي غير محدد
5	4	3	2	1	27. أشعر انني مكبل بالمسؤوليات كالم/كأم
5	4	3	2	1	28. قلق بان شخصية طفلي ستأثر سلبيا بوزنه
5	4	3	2	1	29. هناك عدة اشياء تُزعجني بشأن أسلوب حياتي
5	4	3	2	1	30. رؤية اطفال ذوي اوزان طبيعيه يمارسون النشاطات اليومية تُجعلني أشعر بالحزن
5	4	3	2	1	31. احسن انه من السهل تقبل النقد من الآخرين حول وزن طفلي
5	4	3	2	1	32. اكثر الاوقات اشعر بان طفلي لا يرغب ولا يريد ان يكون قريب مني
5	4	3	2	1	33. عندما يلعب طفلي بشكل نشط، اجد نفسي قلق بانته سيتأذى
5	4	3	2	1	34. طفلي لا يبدو سريع التعلم كاکثر الاطفال في المدرسة
5	4	3	2	1	35. يُمكنني ان اخصل على المساعدة والدعم عندما احتاجه لصالح طفلي
5	4	3	2	1	36. طفلي غير قادر على القيام بما اتوقعه منه
5	4	3	2	1	37. مناقشة وزن طفلي مع افراد العائلة
5	4	3	2	1	38. قلق حول كيفية تعامل الأصدقاء والاقارب مع طفلي
5	4	3	2	1	39. لدي الثقة في إدارة شؤون طفلي المستقبلية مهما حدث

Appendix I

Extra Analysis Tables

Table 1: Correlation between Physician perceive of Child Weight and Child BMI

Demographic Data		Child BMI
If child' physician told parent about child's weight increasing	Pearson Correlation	-0.325**
	Sig. (2-tailed)	0.000
	N	1088

** Correlation is significant at the 0.01 and * significant at 0.05 (2-tailed).

Table 2: Correlation between families' Socio-Economic Status and Children BMI

Demographic Data		Child BMI
Monthly Salary Income	Pearson Correlation	0.052
	Sig. (2-tailed)	0.135
	N	819
Childs Daily Pocket Money	Pearson Correlation	0.087**
	Sig. (2-tailed)	0.005
	N	1050

** Correlation is significant at the 0.01 and *Correlation is significant at 0.05 (2-tailed).

Table 3: Family Socio-Demographic Variables

Variables		Frequency	Percent
Are you concerned about your child's weight:	Not at all	36	3.3 %
	A little	289	26.3 %
	Very concerned	765	69.7 %
I feel my child is:	About the right weight	204	18.6 %
	Overweight	687	62.6 %
	Obese	191	17.4 %
family meal purchased from a fast food restaurant:	never	327	29.8 %
	1 time	430	39.2 %
	2 times	195	17.8 %
	3 times	62	5.7 %
	more than 3 times	79	7.2 %
Child exercise:	Not enough	481	43.8 %
	Just right	237	21.6 %
	Too much	44	4.0 %
	Not doing at all	334	30.4 %
you think your child eats:	Too little	41	3.7 %
	Just right	670	61.1 %
	Too much	383	34.9 %

Table 4: Correlation between Family Demographic Data and children BMI

Demographic Data		Children BMI
School Category	Pearson Correlation	0.001
	Sig. (2-tailed)	0.967
	N	1097
Father Age	Pearson Correlation	0.140**
	Sig. (2-tailed)	0.000
	N	1032
Father Education Level	Pearson Correlation	-0.075*
	Sig. (2-tailed)	0.015
	N	1046
Father Weight	Pearson Correlation	0.086**
	Sig. (2-tailed)	0.007
	N	964
Mother Age	Pearson Correlation	0.167**
	Sig. (2-tailed)	0.000
	N	1054
Mother Educational Level	Pearson Correlation	-0.080**
	Sig. (2-tailed)	0.009
	N	1072
Mother Weight	Pearson Correlation	0.147**
	Sig. (2-tailed)	0.000
	N	1034
Working Mother	Pearson Correlation	-0.015
	Sig. (2-tailed)	0.629
	N	1071
Total children in the family	Pearson Correlation	0.104**
	Sig. (2-tailed)	0.001
	N	1086
Child Order	Pearson Correlation	0.071
	Sig. (2-tailed)	0.019
	N	1088

** Correlation is significant at the 0.01 and *Correlation is significant at 0.05 (2-tailed).

Table 5: Parental Perception about three causes of obesity in childhood.

Parental Perceptions	1=Strongly Disagree 2=Disagree 3=Agree 4=strongly Agree			
	1	2	3	4
Parental Perception of Obesity Causing in Childhood				
I can influence my child's amount of physical activity	6.6%	20.2%	56.7%	12.7%
Eating habits of parents influence the eating habits of their children	8.8%	19.4%	42.3%	27.8%
Children will exercise more if their parents exercise regularly	4.5%	12.9%	48.4%	33.2%
Modern technology and media playing an important role in children obesity	5.2%	9.3%	34.6%	49.0%
Sedentary lifestyle is considered a major cause of obesity	3.5%	8.6%	33.3%	53.4%
Control of what children eat is the responsibility of parents	4.1%	11.5%	48.3%	35.5%
Hereditary play a major role in children obesity	6.2%	16.8%	47.8%	28.4%
I can influence my child's food choices	4.9%	20.7%	54.9%	18.0%

Table 6: Parental Perception of Obesity in Childhood.

Parental Perceptions	1=Strongly Disagree 2=Disagree 3=Agree 4=strongly Agree			
	1	2	3	4
Parental Perception of Obesity in Childhood				
Normal weight is important to health of children.	2.0%	0.9%	23.5%	73.0%
Childhood obesity is becoming more common.	2.6%	7.2%	40.7%	48.9%
Reducing childhood obesity is easier than reducing obesity in adulthood.	4.4%	10.8%	33.8%	50.4%
I am worried about my child's weight right now	3.7%	13.1%	36.8%	45.6%
Obese children are likely to become obese adults	6.7%	17.3%	39.3%	35.9%

Table 7: Parental Perception of Obesity Consequences in Childhood

Parental Perceptions	1=Strongly Disagree 2=Disagree 3=Agree 4=strongly Agree			
	1	2	3	4
Parental perception of obesity consequences in childhood				
Obese children are more likely to develop diabetes (high blood sugar), hypertension (high blood pressure) and heart problem than children who are not obese	3.2%	5.5%	31.7%	58.4%
Obese children are more prone for bone complication than normal children	2.6%	8.5%	45.7%	41.5%
Obesity enhance early puberty in male	5.6%	26.5%	43.1%	20.3%
Obese children are more likely to develop skin problems than other normal weight children	5.6%	22.2%	43.9%	26.3%
Obesity enhance puberty in female children	5.1%	19.2%	42.0%	29.2%
Childhood obesity is a significant cause of peer rejection	9.0%	29.0%	39.5%	20.0%
Obese children are more likely to have problems in their social relationship with other children than children who are not obese	9.3%	26.6%	41.2%	22.2%

Table 8: Parents Actual Perception of their Children Weight

Child Age	Parents Actual Perception of Their Children							Total
	A	B	C	D	E	F	G	
6 years male	0	0	6	10	7	3	3	29
6 years female	1	1	4	13	16	3	1	39
7 years male	6	5	14	18	13	8	5	74
7 years female	0	2	10	22	12	15	5	66
8 years male	5	3	15	19	28	11	12	90
8 years female	1	3	10	22	29	19	7	91
9 years male	0	0	14	32	23	19	21	109
9 years female	0	1	12	16	31	27	23	110
10 years male	2	1	5	29	20	25	28	109
10 years female	0	0	6	15	26	35	16	98
11 years male	4	4	3	18	22	24	29	100
11 years female	0	1	3	22	25	24	10	85
12 years male	0	0	1	9	10	16	16	52
12 years female	0	0	2	12	11	12	9	46
Total male	17 3%	13 2.3%	58 10.4%	135 24.4%	123 22.6%	106 19.1%	114 20.6%	553 100.0%
Total female	2 0.3%	8 1.5%	47 8.8%	122 22.8%	150 28.0%	135 25.2%	71 13.2%	535 100.0%

A & B = Underweight, C = Ideal Weight, D & E = Overweight, F & G = Obese

Table 9: Parents Perception of Ideal Weight for Their Children

Child Age	Parents Ideal Perception of Their Children							Total
	A	B	C	D	E	F	G	
6 years male	2	7	15	3	1	0	1	63
6 years female	4	15	17	2	1	0	0	66
7 years male	10	27	21	5	0	0	0	29
7 years female	13	23	25	4	1	0	0	39
8 years male	8	34	40	6	0	2	0	90
8 years female	16	33	33	6	0	2	1	91
9 years male	12	37	44	12	2	1	1	109
9 years female	13	33	49	11	2	1	0	108
10 years male	5	36	54	9	3	0	1	108
10 years female	15	36	37	9	0	1	0	98
11 years male	15	34	40	10	0	0	1	100
11 years female	16	27	27	7	4	2	2	85
12 years male	8	17	25	2	0	1	0	53
12 years female	11	12	16	4	1	1	1	46
Total male	60 10.8%	192 34.7%	239 43.3%	47 8.5%	6 1.0%	4 0.7%	4 0.7%	552 100.0%
Total female	88 16.4%	179 33.5%	204 38.2%	47 8.0%	9 1.7%	7 1.3%	4 0.7%	534 100.0%

A & B = Underweight, C = Ideal Weight, D & E = Overweight, F & G = Obese

Table 10: Parental Stressors Measurement Scale

Parental Stressors	HOW OFTEN?		
	1=Never, 2=Sometimes, 3=Very often		
	1	3	5
1. Bringing my child to the clinic or hospital to follow up on his weight	44.1%	47.4%	8.4%
2. Worrying that I may be responsible for my child's obesity in some way	12.9%	44.4%	42.6%
3. Seeing my child's mood change quickly	13.9%	49.6%	36.2%
4. Speaking with doctor regarding my child's weight	37.4%	43.2%	19.2%
5. I experience angry feelings when I think about my child's weight	18.9%	34.1%	46.9%
6. Speaking with my child about his/her weight	8.5%	31.5%	59.9%
7. Speaking with the nurse regarding my child's weight	46.4%	36.0%	17.5%
8. Speaking with my partner about our child weight	13.1%	34.9%	51.5%
9. Watching my child have trouble eating	26.8%	34.7%	38.2%
10. Worrying that my child's weight will worsen	15.0%	31.5%	53.4%
11. Knowing my child is hurting because of his/her weight	19.1%	28.6%	52.1%
12. Feeling guilty because my child become obese, whereas the other children remained healthy weight	21.9%	30.1%	47.8%
13. Worrying that my child were prone for teasing from his/her colleagues in the school	34.6%	32.4%	32.7%
14. Making decisions about my child's lifestyle	17.3%	40.4%	41.5%
15. Thinking about my child being isolated from others because of his/her weight	48.5%	28.7%	31.2%
16. Worrying about the long term impact of the obesity on my child	12.9%	30.3%	56.8%
17. Feeling helpless over my child's overweight and cannot handle things very well.	25.8%	32.3%	41.6%
18. Feeling misunderstood by family/friends as to the severity of my child's weight	34.5%	36.6%	18.4%
19. I am jealous of parents who have healthy weight children	53.3%	25.2%	21.3%
20. Feeling uncertain about my child future	24.6%	26.3%	48.8%
21. Thinking twice before taking my child for cloth shopping	30.7%	30.2%	40.1%
22. Feeling uncertain about disciplining my child because of his/her sedentary lifestyle	26.0%	38.0%	36.0%
23. Feeling scared that my child could get very sick or die because of his/her weight	45.0%	26.4%	28.2%
24. Seeing my child sad because of his/her weight	40.7%	36.1%	23.1%
25. Disagreeing with others that my child's weight is critical weight	41.8%	34.3%	23.7%
26. My hopes and dreams for my child's future are uncertain	36.6%	30.1%	32.7%
27. I feel trapped by responsibilities as a parent	26.2%	26.4%	46.9%
28. Worrying that my child personality will be affected negatively by his/her weight	31.1%	32.7%	35.7%
29. There are quite a few things that bother me about my lifestyle	25.4%	41.3%	32.8%

30. Seeing healthy weight children doing everyday activities make me feel sad	44.8%	31.5%	32.5%
31. Feeling easy to accept critiques from others about my child weight	29.4%	42.4%	27.7%
32. Most times I feel that my child dose not like me and does not want to be close to me	66.6%	21.6%	11.3%
33. When my child is actively playing, I found myself worried that she/ he will get hurt	54.3%	29.5%	15.9%
34. My child doesn't seem to learn as quickly as most children at the school	58.2%	25.3%	16.4%
35. I can get help and support when I need it	13.4%	37.4%	48.6%
36. My child is not able to do as much as I expected him/her	42.3%	40.1%	17.5%
37. Discussing with family members about my child's weight	24.5%	42.5%	32.9%
38. Worrying about how friends and relatives dealing with my child	46.4%	32.1%	21.4%
39. I trust my self to manage the future, whatever happens	8.1%	20.3%	71.5%

Table 11: Parental Perception of Obesity in Children and the Questionnaire Fillers.

Perception Levels	The Questionnaire Filler			Total	
	Father	Mother	Both		
Not perceive	count	38	118	8	164
	% of Total	3.5%	10.8%	.7%	14.9%
Semi perceive	count	123	245	14	382
	% of Total	11.2%	22.3%	1.3%	34.8%
Highly perceive	count	114	218	16	348
	% of Total	10.4%	19.9%	1.5%	31.7%
fully perceive	count	62	130	11	203
	% of Total	5.7%	11.9%	1.0%	18.5%
Total	count	337	711	49	1097
	% of Total	30.7%	64.8%	4.5%	100.0%

$\chi^2 = 6412, df = 6, p = 0.379$

Table 12: Fathers Perception Levels According to Their Age

Fathers Age Category		NOT AWARE	SEMI AWARE	HIGHLY AWARE	FULLY AWARE	Total
< 39 years	Count	9	38	44	23	114
	Expected Count	12.2	41.8	38.7	21.3	114.0
	% of Total	2.8%	11.6%	13.5	7.0	34.9%
40 – 59 years	Count	24	81	62	34	201
	Expected Count	21.5	73.8	68.2	37.5	201.0
	% of Total	7.3%	24.8%	19.0%	10.4%	61.5%
> 60 years	Count	2	1	5	4	12
	Expected Count	1.3	4.4	4.1	2.2	12.0
	% of Total	.6%	.3%	1.5%	1.2%	3.7%
Total	Count	35	120	111	61	327
	Expected Count	35.0	120.0	111.0	61.0	327.0
	% of Total	10.7%	36.7%	33.9%	18.7%	100.0%

$\chi^2 = 8.578, df = 6, p = .199$

Table 13: Mothers Perception Levels according to their Age

Mother Age Category		NOT AWARE	SEMI AWARE	HIGHLY AWARE	FULLY AWARE	Total
< 39 years	Count	67	169	150	82	468
	Expected Count	73.3	162.4	148.0	84.3	468.0
	% of Total	9.8%	24.7%	22.0	12.0	68.5%
40 – 59 years	Count	39	68	66	41	214
	Expected Count	33.5	74.3	67.7	38.5	214.0
	% of Total	5.7%	10.0%	9.7%	6.0%	31.3%
> 60 years	Count	1	0	0	0	1
	Expected Count	.2	.3	.3	.2	1.0
	% of Total	.1%	.0%	.0%	.0%	.1%
Total	Count	107	237	216	123	683
	Expected Count	107.0	237.0	216.0	123.0	683.0
	% of Total	15.7%	34.7%	31.6%	17.0%	100.0%

$\chi^2 = 7.905, df = 6, p = .245$

Table 14: Parental Perception of Obesity in Children and Parents' Nationalities.

Perception levels		Father's Nationalities						Total
		* 1	* 2	* 3	* 4	* 5	* 6	
Not perceive	count	115	17	9	7	16	0	164
	% of Total	10.5%	1.5%	.8%	.6%	1.5%	.0%	14.9 %
Semi perceive	count	221	32	47	34	47	1	382
	% of Total	20.1%	2.9%	4.3%	3.1%	4.3%	.1%	34.8 %
Highly perceive	count	194	29	42	35	44	4	348
	% of Total	17.7%	2.6%	3.8%	3.2%	4.0%	.4%	31.7
fully perceive	count	108	16	29	25	21	4	203
	% of Total	9.8%	1.5%	2.6%	2.3%	1.9%	.4%	18.5 %
Total	count	638	94	127	101	128	9	1097
	% of Total	58.2%	8.6%	11.6%	9.2%	11.7%	.8%	100 %
$X^2 = 27.354, df = 15, p = 0.026$								
Perception Levels		Mothers' Nationalities						Total
		* 1	* 2	* 3	* 4	* 5	* 6	
Not Aware	Count	112	16	8	8	19	1	164
	% of Total	10.2%	1.5%	.7%	.7%	1.7%	.1%	15.0%
Semi Aware	Count	222	29	45	33	50	3	382
	% of Total	20.3%	2.6%	4.1%	3.0%	4.6%	.3%	34.9%
Highly Aware	Count	190	30	37	41	46	3	347
	% of Total	17.3%	2.7%	3.4%	3.7%	4.2%	.3%	31.7%
Fully Aware	Count	105	14	33	28	22	1	203
	% of Total	9.6%	1.3%	3.0%	2.6%	2.0%	.1%	18.5%
Total	Count	629	89	123	110	137	8	1096
	% of Total	57.4%	8.1%	11.2%	10.0%	12.5%	.7%	100%
$X^2 = 26.974, df = 15, p = 0.029$								

* 1=UAE. * 2=GCC, Yemen and Iraq. * 3=Palestine, Jordan, Syria and Lebanon. * 4=Egypt and Sudan.
 * 5=India, Pakistan, Iran, Bangladesh, Philippines and Afghanistan. * 6=Somalia, Algeria, USA, Canada and Serilanca.

Table 15: Parental Perception of Obesity in Children and the Parents' Educational Level.

Perception Levels		Fathers' Education Level				Total
		Preparatory or less	High school or above	Bachelor	Master and PhD	
Not Aware	count	78	53	15	3	149
	% of Total	7.5%	5.1%	1.4%	.3%	14.2 %
Semi Aware	count	138	118	86	21	363
	% of Total	13.2%	11.3%	8.2%	2.0%	34.7 %
Highly Aware	count	102	121	95	20	338
	% of Total	9.7%	11.6%	9.1%	1.9%	32.3 %
Fully Aware	count	55	72	48	21	196
	% of Total	5.3%	6.9%	4.6%	2.0%	18.7 %
Total	count	373	364	244	65	1046
	% of Total	35.7%	34.8%	23.3%	6.2%	100.0%
$X^2 = 44.556, df = 9, p = 0.001$						
Perception Levels		Mothers' Education Level				Total
		Preparatory or less	High school or above	Bachelor	Master and PhD	
Not Aware	Count	89	49	15	0	153
	% of Total	8.3%	4.6%	1.4%	.0%	14.3%
Semi Aware	Count	155	141	71	7	374
	% of Total	14.4%	13.2%	6.6%	.7%	34.9%
Highly Aware	Count	113	118	100	13	344
	% of Total	10.5%	11.0%	9.3%	1.2%	32.1%
Highly Aware	Count	64	84	45	8	201
	% of Total	6.0%	7.8%	4.2%	.7%	18.8%
Highly Aware	Count	421	392	231	28	1072
	% of Total	39.3%	36.6%	21.5%	2.6%	100%
$X^2 = 51.827, df = 9, p = 0.001$						

Table 16: Parental Stress Level and the Questionnaire Filler.

Parental Stress Levels		The Questionnaire Filler			Total
		Father	Mother	Both	
Very low parental stress	Count	82	119	4	205
	% of Total	7.5%	10.8%	.4%	18.7%
Low parental stress	Count	122	199	15	336
	% of Total	11.1%	18.1%	1.4%	30.6%
High parental stress	Count	99	238	15	352
	% of Total	9.0%	21.7%	1.4%	32.1%
Very high parental stress	Count	34	155	15	204
	% of Total	3.1%	14.1%	1.4%	18.6%
Total	Count	337	711	49	1097
	% of Total	30.7%	64.8%	4.5%	100.0%
$X^2 = 37.209, df = 6, p = 0.001$					

Table 17: Fathers Stress Levels According to Their Age

Fathers Age Category		VERY LOW PARENTAL STRESS	LOW PARENTAL STRESS	HIGH PARENTAL STRESS	VERY HIGH PARENTAL STRESS	Total
< 39 years	Count	31	36	34	13	114
	Expected Count % of Total	28.2 9.5%	40.8 11.0%	33.5 10.4	11.5 4.0	114.0 34.9%
40 – 59 years	Count	48	79	56	18	201
	Expected Count % of Total	49.8 14.7%	71.9 24.2%	59 17.1%	20.3 5.5%	201.0 61.5%
> 60 years	Count	2	2	6	2	12
	Expected Count % of Total	3.0 .6%	4.3 .6%	3.5 1.8%	1.2 .6%	12.0 3.7%
Total	Count	81	117	96	33	327
	Expected Count % of Total	81.0 24.8%	117.0 35.8%	96.0 29.4%	33.0 10.1%	327.0 100.0%

$\chi^2 = 6.007, df = 6, p = .422$

Table 18: Mothers Stress Levels According to Their Age

Mothers Age Category		VERY LOW PARENTAL STRESS	LOW PARENTAL STRESS	HIGH PARENTAL STRESS	VERY HIGH PARENTAL STRESS	Total
< 39 years	Count	67	134	153	114	468
	Expected Count % of Total	76.1 9.8%	133.6 19.6%	155.5 22.4	102.8 16.7	468 68.5%
40 – 59 years	Count	44	61	73	36	214
	Expected Count % of Total	34.8 6.4%	61.1 8.9%	71.1 10.7%	47.0 5.3%	214.0 31.3%
> 60 years	Count	0	0	1	0	1
	Expected Count % of Total	.2 .0%	.3 .0%	.3 .1%	.2 .0%	1.0 .1%
Total	Count	111	195	227	150	683
	Expected Count % of Total	111.0 16.3%	195.0 28.6%	227.0 33.2%	150.0 22.0%	683.0 100.0%

$\chi^2 = 9.423, df = 6, p = .151$

Table 19: Parental Stress Levels and Parents' Nationalities.

Parental Stress Levels	Fathers' Nationalities						Total
	* 1	* 2	* 3	* 4	* 5	* 6	
Very low parental stress count	86	18	34	16	47	4	205
% of Total	7.8%	1.6%	3.1%	1.5%	4.3%	.4%	18.7%
Low parental stress count	164	32	41	40	59	0	336
% of Total	14.9%	2.9%	3.7%	3.6%	5.4%	.0%	30.6%
High parental stress count	230	25	42	36	16	3	352
% of Total	21.0%	2.3%	3.8%	3.3%	1.5%	.3%	32.1%
Very high parental stress count	158	19	10	9	6	2	204
% of Total	14.4%	1.7%	.9%	.8%	.5%	.2%	18.6%
Total count	638	94	127	101	128	9	1097
% of Total	58.2%	8.6%	11.6%	9.2%	11.7%	.8%	100%

$$X^2 = 1.198, df = 15, p = 0.001$$

Parental Stress Level	Mothers' Nationalities						Total
	* 1	* 2	* 3	* 4	* 5	* 6	
Very low parental stress count	83	15	33	18	50	5	204
% of Total	7.6%	1.4%	3.0%	1.6%	4.6%	.5%	18.6%
Low parental stress count	162	33	40	38	62	1	336
% of Total	14.8%	3.0%	3.6%	3.5%	5.7%	.1%	30.7%
High parental stress count	225	30	38	40	17	2	352
% of Total	20.5%	2.7%	3.5%	3.6%	1.6%	.2%	32.1%
Very high parental stress count	159	11	12	14	8	0	204
% of Total	14.5%	1.0%	1.1%	1.3%	.7%	.0%	18.6%
Total count	629	89	123	110	137	8	1096
% of Total	57.4%	8.1%	11.2%	10.0%	12.5%	.7%	100.0%

$$X^2 = 1.215, df = 15, p = 0.001$$

* 1=UAE. * 2=GCC, Yemen and Iraq. * 3=Palestine, Jordan, Syria and Lebanon. * 4=Egypt and Sudan.

* 5=India, Pakistan, Iran, Bangladesh, Philippines and Afghanistan. * 6=Somalia, Algeria, USA, Canada and Serilanca.

Table 20: Parental Stress Level and Parents' Educational Level.

Parental Stress Levels	Father's Education Level				Total
	Preparatory or less	High school or above	Bachelor	Master and PhD	
Very low parental stress count % of Total	61 5.9%	64 6.1%	55 5.3%	16 1.5%	196 18.7%
Low parental stress count % of Total	89 8.5%	104 9.9%	98 9.4%	30 2.9%	321 30.7%
High parental stress count % of Total	123 11.8%	123 11.8%	72 6.9%	15 1.4%	333 31.8%
Very high parental stress count % of Total	100 9.5%	73 7.0%	19 1.8%	4 .4%	196 18.7%
Total count % of Total	373 35.7%	364 34.8%	244 23.3%	65 6.2%	1046 100%
$X^2 = 59.862, df = 9, p = 0.001$					
Mothers' Parental Stress Levels	Mothers' Educational Levels				Total
	Preparatory or less	High school or above	Bachelor	Master and PhD	
Very low parental stress count % of Total	72 6.7%	70 6.5%	53 4.9%	6 .6%	201 18.8%
Low parental stress count % of Total	112 10.4%	121 11.3%	80 7.5%	15 1.4%	328 30.6%
High parental stress count % of Total	142 13.2%	127 11.8%	68 6.3%	6 .6%	343 32.0%
Very high parental stress count % of Total	95 8.8%	74 6.9%	30 2.8%	1 .1%	200 18.7%
Total count % of Total	421 39.3%	392 36.6%	231 21.5%	28 2.6%	1072 100.0%
$X^2 = 24.032, df = 9, p = 0.004$					

Table 21: Parental Perception and Children Gender (Crosstabs chi-square).

Parent Perception Level		Children Gender		Total
		Male	Female	
Not Aware	Counts	91	73	164
	% of Total	8.3%	6.7%	14.9%
Semi Aware	Counts	195	187	382
	% of Total	17.8	17.0 %	34.8 %
Highly Aware	Counts	177	171	348
	% of Total	16.1%	15.6%	31.7%
Fully Aware	Counts	95	108	203
	% of Total	8.7%	9.8%	18.5%
Total	Counts	558	539	1097
	% of Total	50.9%	49.1%	100.0%
$X^2 = 2.751, df = 3, p = 0.432$				

Table 22: Parental Perception Level and Children Gender (t-test).

	N	Mean	Std. Deviation	Std. Error Mean
Male	558	2.49	.958	.041
Female	539	2.58	.957	.041

Levene's Test for Equality of Variances		t-test Equality of Mean							
	F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std. error difference	95% confidence interval of difference	
								Lower	upper
*	.000	.992	-1.520	1095	.129	-.088	.058	-.201	-.026
**			-1.520	1.094	.129	-.088	.058	-.201	-.026

* Equal variances assumed

** Equal variances not assumed

Table 23: Parental Stress and Children Genders (t-test).

	N	Mean	Std. Deviation	Std. Error Mean
Male	558	2.4910	1.91643	.04303
Female	539	2.5213	.97982	.04220

Levene's Test for Equality of Variances		t-test Equality of Mean							
	F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std. error difference	95% confidence interval of difference	
								Lower	upper
*	1.592	.207	-.502	1095	.616	-.03030	.06031	-.14863	-.08804
**			-.503	1.095	.615	-.03030	.06027	-.14856	-.08796

* Equal variances assumed

** Equal variances not assumed

Table 24: Parental Stress Level and Children Gender

Parental Stress Level		Children Gender		Total
		Male	Female	
Very low parental stress	Count	112	93	205
	% of Total	10.2%	8.5%	18.7%
Low parental stress	Count	166	170	336
	% of Total	15.1%	15.5%	30.6%
High parental stress	Count	174	178	352
	% of Total	15.9%	16.2%	32.1%
Very high parental stress	Count	106	98	204
	% of Total	9.7%	8.9%	18.6%
Total	Count	558	539	1097
	% of Total	50.9%	49.1%	100.0%

$\chi^2 = 1.839, df = 3, p = 0.606$

Table 25: Parental Stress Level and Children Age.

Parental Stress Level	Children Age						
	6	7	8	9	10	11	12
Very low parental stress count	21	36	41	36	29	32	10
% of Total	1.9%	3.3%	3.7%	3.3%	2.6%	2.9%	.9%
Low parental stress count	26	35	59	64	68	54	30
% of Total	2.4%	3.2%	5.4%	5.8%	6.2%	4.9%	2.7%
High parental stress count	18	37	59	69	68	71	30
% of Total	1.6%	3.4%	5.4%	6.3%	6.2%	6.5%	2.7%
Very high parental stress count	4	24	24	50	44	29	29
% of Total	.4%	2.2%	2.2%	4.6%	4.0%	2.6%	2.6%
Total count	69	132	183	219	209	186	99
% of Total	6.3%	12.0%	16.7%	20.0%	19.1%	17.0%	9.0%

$X^2 = 44.079, df = 18, p = 0.001$

Table 26: Parental Perception of Obesity in Children and Schools Categories.

Perception levels	School Category		Total
	Government	Privet	
Not Aware count	120	44	164
% of Total	10.9%	4.0%	14.9%
Semi Aware count	229	153	382
% of Total	20.9%	13.9%	34.8%
Highly Aware count	187	161	348
% of Total	17.0%	14.7%	31.7%
fully Aware count	108	95	203
% of Total	9.8%	8.7%	18.5%
Total count	644	453	1097
% of Total	58.7%	41.3%	100.0%

$X^2 = 20.481, df = 3, p = 0.001$

Table 27: Parental Stress Level and Schools Categories.

Parental Stress Level	School Category		Total
	Government	Privet	
Very low parental stress count	89	116	205
% of Total	8.1%	10.6%	18.7%
Low parental stress count	174	162	336
% of Total	15.9%	14.8%	30.6%
High parental stress count	220	132	352
% of Total	20.1%	12.0%	32.1%
Very high parental stress level count	161	43	204
% of Total	14.7%	3.9%	18.6%
Total count	644	453	1097
% of Total	58.7%	41.3%	100.0%

$X^2 = 62.891, df = 3, p = 0.001$

Table 28: Parental Perception of Obesity in Children and Parents Different Cultures.

(Parental Perception Level)		Fathers Nationalities	Mothers Nationalities
Fathers' nat.	Correlation	1.000	.914**
	Significance (2-tailed)		.000
	df	0	1093
Mothers' nat.	Correlation	.914**	1.000
	Significance (2-tailed)	.000	
	df	1093	0

** Correlation is significant at the 0.01 and *Correlation is significant at 0.05 (2-tailed).

Table 29: Parental Stress and Parents Different Cultures.

(Parental Stress Level)		Fathers Nationalities	Mothers Nationalities
Fathers' nat.	Correlation	1.000	.908**
	Significance (2-tailed)		.000
	df	0	1093
Mothers' nat.	Correlation	.908**	1.000
	Significance (2-tailed)	.000	
	df	1093	0

** Correlation is significant at the 0.01 and *Correlation is significant at 0.05 (2-tailed).

إدراك الوالدين للسمنة والإجهاد النفسي الناتج عن سمنة أطفالهم في دولة الإمارات العربية المتحدة

إعداد

سلمى عمر سببب النعيمي

المخلص

السمنة حالة مرضية تحدث عندما يكون استهلاك الجسم للطاقة أكثر من احتياجه تتحزن على هيئة دهون في الأنسجة الدهنية مما ينتج عنها زيادة في عدد وحجم الخلايا الدهنية. كان يعتقد أن السمنة تخص الدول المتقدمة، لكن الدراسات الإحصائية والوبائية أثبتت أن انتشار السمنة يزداد في الدول المتقدمة والنامية على حد سواء.. إن العناية بطفل مصاب بالبدانة يتطلب قدرا من الوعي الصحي لمشكلة السمنة، كما قد يكون لذات الموضوع أثرا نفسيا لولي أمر الطفل والمحيطين به، لذا تهدف هذه الدراسة الى التعرف على مدى إدراك الوالدين للسمنة عند الأطفال والضعف النفسي لديهم من وجود طفل بدين في العائلة حيث أن السمنة وزيادة الوزن أصبحت مشكلة متزايدة عند الأطفال.

دراسة وصفية أجريت على 1097 من أولياء أمور أطفال مصابون بالبدانة (إما بداية بدانه أو بدانة مفرطة) بمدينة العين بدولة الإمارات العربية المتحدة، تم جمع البيانات لهذه الدراسة بواسطة ثلاثة استبيانات باللغة العربية والانجليزية، الأول استبيان لقياس مستوى الوعي الصحي للسمنة لدى الأطفال والخصائص الديموغرافية للأسره، الثاني لقياس مستوى إدراك الوالدين لسمنة لدى أطفالهم، والثالث لقياس مستوى الضغوط النفسي لدى الوالدين الناتج جراء وجود طفل بدين في الأسرة.

بلغ معدل الوعي الصحي للسمنة في مرحلة الطفولة لدى أولياء الأمور مستوى متوسط. أثبتت الدراسة أن معظم أولياء الأمور مهتمون جدا بشأن أوزان أطفالهم، كم أن أغلب الوالدين قد لاحظوا أن أطفالهم يكتسبون زيادة في الوزن ولكن في نفس الوقت الأغلبية لم يتمكنوا من إدراك أن طفلهم مصاب بالبدانة.

كما أظهرت الدراسة بأنه لا توجد علاقة بين الدخل الشهري للعائلة وأوزان الأطفال، بينما هناك علاقة بين المصروف اليومي للطفل و وزنه، كما لم تشر الدراسة بوجود علاقة بين وزن الطفل وكون والدته موظفة. علاوة على ذلك ارتبط معدل وزن الأطفال بأعمار الآباء و الأمهات و بالعدد الإجمالي للأطفال في الأسرة وترتيب الطفل بين إخوته وأخواته، أو ما إذا كان الطفل الوحيد للأسره.

كما أظهرت الدراسة زيادة معدل الضغوط النفسي لدى الوالدين الناتج عن زيادة أوزان أطفالهم، حيث اختلف ذلك باختلاف جنسيات ومستويات تعليم الوالدين. الأمهات أظهرن أعلى معدل في الضغوط النفسي من الآباء، بينما أظهرت الدراسة أنه لا يوجد اختلاف في معدل الوعي الصحي بين الوالدين. من جهة أشارت الدراسة أنه لا يوجد علاقة بين اختلاف جنس الطفل ومعدل الوعي الصحي أو زيادة معدل الضغوط النقي لدى الوالدين، و من جهة أخرى أظهرت الدراسة أنه لا يوجد علاقة بين أوزان الأطفال و اختلاف جهة الدراسة (حكومي أو خاص)، بينما نسبة الوعي ومعدل الضغوط النفسي لدى الوالدين اختلف باختلاف جهة دراسة الأبناء.

يجب عمل دراسات أخرى لمتابعة هذه النتائج، هذه الدراسة تقترح إقامة برامج تطبيقية وتدريبية للكادر التمريضي الذي يتعامل مع أولياء أمور أطفال مصابون بالبدانة أو زيادة الوزن لتوعيتهم ولتقديم الدعم الكافي لهم.

