

**IMPACT OF FAST FOOD ON OBESITY AMONG  
CHILDREN IN SELECTED MATRICULATION SCHOOL  
AT MADURAI DISTRICT , TAMILNADU.**



**A DISSERTATION SUBMITTED TO THE TAMIL NADU  
DR.M.G.R. MEDICAL UNIVERSITY, CHENNAI IN  
PARTIAL FULFILMENT OF THE REQUIREMENT FOR  
THE DEGREE OF MASTER OF SCIENCE IN NURSING**

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**By**

**Mrs.M.ANURADHA**



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## CHAPTER –I INTRODUCTION

**“A Healthy body is the guest chamber of the soul, a sick, its prison”**

**- Francis Bacon.**

Fast food is the wide term, used for food that can be cooked and served in very less time. Most fast foods are delicious but there is several health issues related to consuming fast food. One serious concern is obesity amongst children. Ready to eat food items we know as fast foods are hugely popular today. Various restaurants and food joints serve delicious food items at relatively cheap prices which tempts consumers to try some. The biggest consumers of fast food are obviously the children mainly the school agers.

We often observe children persistently asking their parents to go out and have various kinds of fast foods rather than having home made foods. This is not unexpected because they are children and are more prone to the attractive advertisements of fast foods. Fast foods are basically high on starch, salts and fats which are served in large quantity in just a single serving. Children consuming much fat content food develop obesity. Obviously fast foods, which are rich in fat, more prone to cause obesity in children.

Fast food has become a prominent feature of the diet of children in India. Once upon a time childhood obesity was considered a problem of affluent countries. Nowadays even in developing countries this problem is found especially in urban population. Studies from metropolitan cities in India have reported a high prevalence of obesity among affluent school children.

Globally the prevalence of childhood obesity varies from over 30 % in USA to less than 2 % in sub-Saharan Africa. The prevalence of obesity in school children is 20 % in U.K and Australia, 15.8 % in Saudi Arabia, 15.6 % in Thailand, 10 % in Japan and 7.8 % in Iran. **(2004 – 2006)**

Overweight as the fifth most serious risk factor for both developed countries and low mortality developing countries. According to its report about 10% of the young people aged 5 to 17 years globally were overweight, among them 2- 3 % were obese. **World health report (2007)**

A study was conducted among 6212 children and adolescents 4 to 19 years old to examine the association of fast food consumption and measures of dietary quality in US. The result shows fast food consumption was highly

prevalent in both genders, all racial/ethnic groups and all regions of the country. Also it was observed that children ate more total energy but poorer diet quality on those days of consuming fast food (**Bowmen and Gortmaker , 2004**).

Obesity has reached epidemic proportions in India affecting 5% of the country's populations involving ten centre from different parts of the country (**Survey period 2001 -2003** ) shows overall prevalence of obesity in the age group 10-16 was 31% prevalence of overweight / obesity among adolescents has been reported from Delhi, Pune, Kerala and Tamil Nadu. Prevalence was higher among adolescent from Tamil Nadu (BMI>25) than Delhi. Prevalence in Delhi was 18% while in Tamil Nadu it was 20%.

A study by professor **B.R.Thapa of paediatric gastroenterology (2009)**, revealed that 15% of Indian school children are obese with Chennai leading at 22%,delhi 7.5% and Chandigarh coming close to the third slot with 7%.

A study in India in schools of Chennai shows 22% of school children are over weight and obese in affluent schools, while the picture is only 4.5% in less paid schools (**Ramachandran et al,2008**).

The **International Task Force on Obesity** has found out that 300 million people around the world are obese and about 750 million are overweight. Obesity may lead to diabetes, hypertension, higher cholesterol levels, arthritis and other complications. If these obese children grow up to obese adults the above mentioned complications may affect their life style seriously.

## **NEED FOR THE STUDY**

As we know a little bit of everything is always good while over exposure to that little bit is disastrous more often then not. Today teenage and childhood fast food obesity epidemic is growing around the world. In 1999 to 2000 national health and nutrition survey data indicated that 15 % of children and teen between 6 and 19 years were over weight.

Calorie –dense prepared snacks are available in many locations frequented by children. Eating at fast food restaurants is very common among school children's with 75% of 7<sup>th</sup> to 12<sup>th</sup> grade students consuming fast food in a given week. The fast food industry is also at fault for the rise in childhood obesity. Mc Donald's alone has thirteen websites that are viewed by 365,000 children each month.

In addition, fast food restaurants give out toys in children's meals, which help to entice children. 40% of children ask their parents to take them to fast food restaurants on a daily basis. To make matters worse, out of 3000 combinations created from popular items on children's menus at fast food restaurants, only 13 meet the recommended nutritional guidelines for young children. Some literature has found a relationship between fast food consumption and obesity including a study which found that fast food restaurants near schools increases the risk of obesity among the student population.

According to a report, about 155 million children worldwide were overweight more than 30 million of these overweight children were classified as obese. The increasing waistline of children was attributed primarily to fast foods and reduced physical activity. **International Obesity Task Force (IOTF) in April 2004.**

A literature says that adolescence eating habit is influenced by peers, mass media, social & cultural norms and lack of nutritional knowledge. During adolescence the influence of the family tends to make an adolescent eat more meals outside the home and family setting. Most of the studies on adolescent eating patterns come from industrial countries and suggest that adolescents are likely to eat snacks, meals of poor nutrient content, eat irregularly and eat fast (or) junk food. They are less likely to eat fruit and vegetables and often skip breakfast. Taste preferences are also a major determinant of food choices. This will influence the body weight of the child and leads to obesity (**O. P. Ghai - 2005**).

In New Delhi another study conducted among children of age group 5 -15 Years shows an amazing 60 pounds weight gain which was lot for them who were less than 5 foot tall. This shows that fast food consumption is responsible for the overweight kids in our society (**Jayashree Pakhare, 2007**).

As mentioned earlier, fast food meal contains low quality carbohydrates, high level of saturated fat, white bread and sugary soda and also has relatively low fiber content. Eating this kind of food leads to lot of health hazards mainly diabetes and cardiovascular disease.

Fast food obesity is one of the main causes of type II diabetes. If a person takes fast food often he puts his body to strain a lot to produce insulin and thereby in long run resulting in type II diabetes. Medical professional says that fast food obesity along with the sedentary life style may pave way to coronary disease.

Nowadays school canteens are run by outsiders mostly. Unfortunately most of the foods served here are sub standard items. Junk foods and oily, spicy foods of no nutritive value pose a big danger in increasing the cholesterol level leading to obesity and overweight problems among children. With most of the children nowadays having both their parents working are forced to consume canteen food in turn gets into unhealthy food practice which aggravate obesity problem.

Obese children face a lot of insults from their peer group which may in return affect their self esteem and may make them academically poor. Hence it become important to assess and assists the food habit of children in general More than 80 % of the children have got the habit of regular fast foods intake mainly in urban areas. Also it was thought that obesity prevalence rate was high in children studying in affluent schools. **(WHO 2004)**

Hence it become very important to assess the obesity prevalence rate among fast food consumers of the age group 13 -15, which seems to be the budding age group, through assessing their BMI level. It also becomes necessary to give proper advises to those children found obese.

An affluent school at Madurai , One of the Corporation of Tamil Nadu, has been selected as a study setting for the above mentioned assessment. This descriptive survey research may help children, teachers as well as parents to get a general awareness of the evil effects of fast food consumption and prevention of obesity and leading a healthy life style. The findings of the survey will help in formulation of strategies to prevent and control fast food based obesity among the target group.

## **PROBLEM STATEMENT**

A study to determine the impact of fast food on obesity among children in selected Matriculation school at Madurai.

## **OBJECTIVES**

- To identify the level of fast food consumption among children.

- To assess the level of obesity among fast food consuming children.
- To relate the children those who are consuming fast food and their level of obesity
- To associate the children those who are consuming fast food and their selected demographic variables such as Age, Gender , Religion , Type of family, Father's Education , Mother's Education, Father's Occupation , Mother's occupation, Family income, Number of sibling in family , Hours of play and Number of years of fast food consumption.
- To associate the level of obesity among children those who are consuming fast food and their selected demographic variables such as Age, Gender , Religion , Type of family, Father's Education , Mother's Education, Father's Occupation , Mother's occupation, Family income, Number of sibling in family , Hours of play and Number of years of fast food consumption.

## **HYPOTHESES**

- ❖ There will be a significant relationship between children consuming fast food and their level of obesity.
- ❖ There will be a significant association between children those who are consuming fast food and their selected demographic variables such Age,Gender,Religion, Type of family, Father's Education , Mother's Education, Father's Occupation , Mother's occupation, Family income, Number of sibling in family , Hours of play and Number of years of fast food consumption.

- ❖ There will be a significant association between the level of obesity of children those who are consuming fast food and their selected demographic variables such as Age, Gender , Religion , Type of family, Father's Education , Mother's Education, Father's Occupation Mother's occupation, Family income, Number of sibling in family , Hours of play and Number of years of fast food consumption

## **OPERATIONAL DEFINITION IMPACT**

In this study, it refers to the changes in weight among children caused by fast food consumption.

## **FAST FOOD**

It refers to the food prepared in a less time and consists of excessive oil, preservatives, less or no nutritive values and causing obesity in children those who are consuming it twice in a week for about more than one year such as pizza, burger, macaroni, channa masala, palak panir, masala poori, fried rice with sauce etc.

## **OBESITY**

It refers to the over weight of children and having the Body mass index  $\geq 30$ .

## **CHILDREN**

In this study it refers to the school wards studying in Eighth, Ninth and Tenth standard and ages between 13 to 15 years at Vikaasa Matriculation School at Madurai.

## **ASSUMPTIONS**

- Consumption of fast food will affect the health of the children and leads to obesity.

- The level of obesity may vary according to the amount of fast food consumption.

## **LIMITATIONS**

- ❖ Study period is limited to six weeks.
- ❖ Only 13 to 15 years old children are included in this study.
- ❖ Sample size is limited to 100.

## **PROJECTED OUTCOME**

- The findings will help the researcher to know the impact of fast food consumption.
- This study finding will help to improve the awareness of the children, their parents and teachers regarding the effects and impact of fast food consumption.
- These study findings will help the children to adopt correct dietary practices.

## **CONCEPTUAL FRAME WORK**

A conceptual frame work is an interrelated concept or abstractions that are assembled together in some rational scheme by virtue of their relevance to common theme (**Polit and Hungler, 1995**)

Conceptual framework for a particular study is the abstract and logical structure that enables researcher to link findings to the body of knowledge in Nursing. It is developed from the existing theory and helps in identifying and defining the concept and interest and proposing relationship among them. The models give direction for planning research design, data collection and interpreting the findings. The present study is based on **Rosenstock's and Becker and Health Belief Model (1974)**.

**Rosenstock's and Becker's Health Belief Model (1974)** addresses the relationship between a persons belief and behaviours. It provides a way of behaviour in relation to their health and how they will comply with health care therapies.

The first component of this model involves the individual perception. In this study the individual is a school child of age group 13 -15 years. This component consist of demographic variables such as Age, Gender,Religion, Type of family, Father's Education, Mother's Education,Father's Occupation,Mother's occupation,Family income,Number of sibling in family, Hours of play and Number of years of fast food consumption.

The second component of this model consist of modifying factors. It includes identifying the fast food consumers, assess the level of fast food consumption, level of obesity and find out the impact of fast food consumption and cues to action such as to prevent the childhood obesity by preventing or reducing the fast food consumption.

The third component of the model consists of likelihood of taking action. It includes perceived benefits of adopting preventive measures of childhood obesity by decrease the level of fast food consumption and decrease the level of obesity by avoiding the fast food consumption

**CHAPTER – II**  
**REVIEW OF LITERATURE**

A literature review involves a systematic identification, location, scrutiny and summary of written material that contains information on research problems.

**- Polit and Beck (2009)**

Review of literature deals with related literature that was reviewed to broaden the understanding and to gain insight into the selected area under study. Therefore literature was reviewed and relevant extract pertaining to the present study was presented under the following area.

- Literature related to childhood obesity.
- Studies related to childhood obesity.
- Studies related to fast food and childhood obesity.

## **LITERATURE RELATED TO CHILDHOOD OBESITY**

World Health organization (WHO) statistics (2004) on obesity shows that over 22 million children below the age of five are obese and this figure increases with older children and seen among kids in Africa , middle east, U.S and Caribbean.

Developed and developing economies are witnessing increasing Obesity rate amongst its population. Obesity has become a global issue so much a Special Task Force called the International Obesity Task Force has been formed to study the implications on obesity in children and to control the issue worldwide.

World statistics on childhood obesity shows more startling facts as follows

- 28% overweight in 2006, while it was 16% to 18 % overweight in 2004.
- 25% of all white children overweight in 2001.
- Hospital costs associated with obesity has risen from 47 million in 2002 to 127 million in 2008.
- One in four overweight children suffer from type – 2 diabetes
- 60% of children who are obese have one risk factor for heart disease.

Another childhood obesity statistics found obesity in children aged 6-11 years in the year 1980 was 6.5% which has increased to 19.6% in 2008.

Obese kids aged between 12-19 years accounted for only 5% in 1980 which has now increased to 18.1% in 2008. It shows clearly that childhood obesity has increased three times more than what it was 30 years ago.

The world health organization (WHO) describes overweight and obesity as one of today's most important public health problems, which is escalating as a global epidemic. It is also increasingly recognized as a significant problem in developing countries and countries undergoing economic transition. The problem of overweight and obesity is confined not only to adults but also being reported among the children and adolescents of developed as well as developing countries. Since adolescence is a period of transition from childhood to adulthood, it assumes critical position in the life cycle of human beings, characterized by exceptionally rapid rate of growth. The prevalence of overweight and obesity among children and adolescents has increased significantly in developed countries during the past two decades and similar trends are being observed even in the developing world.

This trend is of major concern, given the consequences that are associated with adolescent obesity, which include increased incidence of coronary artery diseases & hypertension, diabetes, obstructive sleep apnoea, esophageal reflux & gastric emptying disturbances, osteoarthritis & flat feet, psychological dysfunction, self esteem & social isolation, dyslipidaemia and overall increase in morbidity and mortality in later life.

## **STUDIES RELATED TO CHILDHOOD OBESITY**

**S.Kumar., et al (2009)** assessed the prevalence of obesity in two affluent school children of Davangere city studying between 5<sup>th</sup> and 10<sup>th</sup> standard aged between 10 and 15 years were enrolled and data on family history of obesity, diet, snacking habits and physical activity was collected. Out of 1496 children 86 were obese. Prevalence of obesity was 5.74%. Prevalence of obesity was more in girls (8.82%) than boys (4.42%). Prevalence of obesity increased with age in both boys and girls. Family history of obesity, snacking of high energy foods and lack of physical activity were the important influencing factors of obesity.

**Asmaa Al-osaimi (2009)** conducted a study on how one's lifestyle induces obesity among 422 Kuwaiti high school children. Self-administered questionnaires were used to assess socio-demographic characteristics, physical activity, dietary habits and monitoring of health status in relation to body mass index. They found that physical activity levels, reading food labels, milk consumption, fatty foods, soft drink consumption and amount of television viewing were significantly associated with BMI. Multi-variant

analysis showed that the risk of obesity was higher among those who practiced no or less physical activity and those who did not read food labels.

**Ramesh K Goyal (2008)** examined 5664 children among the age group of 12 to 18 years from different schools. They were screened for their height, weight and body mass index. Out of 5664 children 3231 (57%) were boys and 2433 (43%) were girls. The prevalence of obesity was found to be 14.3% among boys and 9.2% among girls. He revealed that eating habit like fast food, chocolate, eating outside, physical activity like exercise, sports, sleeping habits in afternoon having remarkable effect on prevalence on overweight and obesity.

**Hellmich., et al (2007)** surveyed 609 parents of children between the ages of 5 and 17. Only 4% of parents indicated their children were obese. But it was found 20% of the participants children fell into this category according to calculated body mass index. Some of the Parents does not know whether their children were overweight or not. Many parents were denial about their children's weight because they don't want to change their own eating and exercise habits.

**Mehta., et al (2007)** conducted a cross sectional study to assess the prevalence and type of obesity in 414 affluent school girls aged 12 to 18 years. Body mass index and waist hip ratio were calculated for all the girls. Prevalence of obesity and over weight amongst the study subjects was 5.3% and 15.2% respectively.

**Mozaffari (2007)** held a study on the prevalence of overweight and obesity among 1800 Iranian school children aged between 12 to 16 years. Height and weight was measured and related socioeconomic information was collected. BMI was calculated. The overall percent of overweight and obesity was 13.3% and 7.7% respectively. The statistical analysis of the data revealed a significant and inverse correlation ( $r=0.03, p=0.04$ ) between maternal education and occurrence of overweight and obesity in children. He revealed that advanced age, lack of physical activity, low economical factors and maternal educational status could be risk factors for obesity in children.

**Janssen., et al (2005)** compared the results estimating the prevalence of overweight and obesity in school aged children from 34 countries and to examine the association between overweight and selected dietary, level of physical activity and hours of television viewing. It was found that high fat diet, lower physical activity level and longer hours of television viewing among overweight children than normal weight children.

**Centres for disease control (CDC) (2005)** found that, more hours of spending in sedentary activities such as watching television, playing computer or video games and the availability of high fat and sugar fast food at hands rises the rate of obesity among youth. Also it was found that childhood obesity was influenced more at urban sprawl and in families where both parents were working outside the home, particularly mother.

**Choudbath and Kislure (2004)** made a comparative study about the prevalence of Obesity among 3000 affluent and 3000 non affluent school children between the ages of 8 – 12 years. The degree of obesity was found as 30.19% in all subjects, in affluent schools 50.47% and non affluent schools 19.92%.

**Mohan., et al (2004)** conducted a study to evaluate the prevalence of obesity in apparently healthy school children in rural and urban areas of Ludhiana using standard criteria. A total of 2467 apparently healthy adolescent school children aged between 11-17 years from urban area and 859 students from rural area were taken as subjects. Overweight population was significantly higher in urban area than rural area.

**Riar., et al (2004)** conducted a cross sectional study among 2008 school children aged 9 to 15 years. Approximately half of the subjects belonged to well to do families while the rest belonged to schools from middle and lower socioeconomic background. The prevalence of obesity as well as overweight was higher in boys as compared to girls. Prevalence of obesity decreased with age, significantly more children from higher socioeconomic status were obese and overweight than those from lower socioeconomic groups.

**Subramanian., et al (2003)** conducted a study on prevalence of obesity and overweight in adolescent girls between 10 – 15 years of age among the affluent families in Chennai. The students are compared using BMI as parameters. The first study was done in 1981 and was compared with the second study in 1988. Obesity and overweight was denoted by BMI above 95<sup>th</sup> and 85<sup>th</sup> percentile respectively. Result showed a 9.6% prevalence of overweight and 6% prevalence of obesity in both studies.

**Hood., et al (2000)** conducted a study with 92 school children and their parents to indicate how parents' dietary habits and physical activity patterns affect their children's risk of obesity. They were asked to complete a questionnaire including measures of dietary restraint, dietary disinhibition and perceived hunger. At the end of six years the researcher determined that the children's body fat was positively related to parent dietary restraint and

concluded that parents with disinhibited eating patterns along with dietary restraint may have children along with a higher risk for obesity.

## **STUDIES RELATED TO FAST FOOD AND CHILDHOOD OBESITY**

Lot of studies were conducted to find out the relation between fast food consumption and childhood obesity. With fast food giants gaining amazing popularity it becomes necessary to develop healthy food habits in children with the help of an expert nutritionist.

**Lorna.K.Fraser (2010)** revealed in a study that the availability of food high in fat, salt and sugar through fast food is implicated in the casual pathway for the obesity epidemic. Fourteen studies showed a positive association between availability of fast food outlet and increasing deprivation .Another 13 studies also included overweight or obesity data and showed convincing results between obesity/overweight and fast food outlet availability.

**Pitan (2009)** did a study on over weight of children & consumption of confectionary fast food stuffs and soft drinks .They inspected 434 school children between 7-18 years old based on BMI. They used food frequency questionnaire. The result shows that confectionary fast food stuffs and soft drinks are more popular than other food stuffs. At the same time it was determined that mean significance BMI was reliable above for children who used confectionary fast food stuffs and soft drinks frequently.

**Harrington.S (2008)**, carried out research on the role of sugar sweetened beverage consumption in adolescent obesity .He expressed that soft drink consumption has increased by 30% in the past 20 years and 56% to 86% of children in school consume atleast one soft drink daily .The odds ratio of becoming obese among children increases 1.6 times for each additional can or glass of sugars sweetened drink consumed beyond their used daily intake of the beverage.

**Ayala Rogers., et al (2008)**, conducted a study on away from home food intake and risk for obesity .They examined 108 school children and their parents dietary intake and weight status . Parents were asked through a questionnaire about the frequency with which they eat meals away from home and the restaurant frequently visited most often. The height and weight of the parent and their children were measured to calculate BMI. They concluded consuming food atleast once a week from relatives/neighbours/friends homes was associated with children dietary intake and children risk for obesity.

**National health and nutrition examination survey (2007)** analysis shows fast food to be high in fat, saturated fat, energy density, fructose and glycemic index yet poor in fiber, vitamins A and C and calcium. A typical fast food meals contains 1400 kcal, 85% of recommended daily fat intake, 73% of recommended saturated fat but only 40% of recommended fiber and 30% of recommended calcium.

**Ding., et al (2007)** carried out a study on fast food and body weight among 15,686 students aged 10 to 15 years. The data were based on cross sectional survey approach. Research indicated that after adjusting for co- variates, participants with high fast food consumption were statistically significantly associated with overweight. This study also suggests that parental education is an important key factor in keeping adolescents healthy.

**Rani Shetty (2007)** conducted study on coronary artery disease risk factors among adolescents ages between 13 – 18 years, a structured questionnaire and body mass index was measured and recorded. The total sample size was 591 among them 23 – 29 were over weight and few samples were obese .They interpreted that one of the main risk factors causing obesity and coronary heart disease is fast food intake .In that 71% of the samples consumed fast food daily. The commonly consumed food items are were vada (82%) potato chips (60%) samosa (56%) kurkure (85%), pav bhaji (52%), noodles (30%) ,burger (29%), pizza (23%), and pop corn (5%), cool drinks(58%), fruit juice(30%). Majority of the parents were not aware about the intake of fast food of the children .It leads to obesity and have a great risk to get coronary artery disease in future year.

**Philippas (2005)** conducted a study on childhood obesity, its etiology prevention and treatment among 2115 school children in Boston USA. The study result revealed that macro nutrient content of diet (22% to 33%), television viewing (33%),lack of physical activities (36%) and intake of fast foods and soft drinks (60%) as potential contributing factors in the obesity epidemic.The children should be helped to develop healthy nutrition and exercise habit early since intervention are most effective when behaviours are still being formed.

**Vinyard B.T.(2004)** conducted study on fast food consumption of adolescents its impact on energy level and over weight status .The study shows atleast one in four adolescents eating fast food. They interpreted that a small. But significance positive association was seen between fast food consumption and overweight status. Fast food consumption was associated with a diet high in energy and energy density and low in essential micro

nutrient density frequent fast food consumption may contribute to weight gain.

**Dibley Michael (2004)** explored the association between dietary habits and overweight and obesity in 1804 adolescents from 30 junior high schools .Weight and height was measured and eating habits assessed using a self administered questionnaire .They found that consumption of food and beverages outside and potato chips was more popular in boys than in girls white girls consumed more fried foods and soft drinks than boys .In boys an increased consumption of soft drink was associated with increased risk of overweight and obesity. In girls having breakfast outside the home and an increased energy dense foods was associated with increased risk of obesity. The consumption of breakfast outside the home ,soft drinks ,energy dense foods were positively associated with overweight and obesity in adolescents.

**Anderson., et al (2002)** conducted a study on the relationship between mother's employment outside the home and childhood obesity found a direct casual relationship between more intensive material work hours and over weight children .Mothers who work more hours per week were more likely to have an overweight child .This trend was particularly evident for children of educated mother, high income mothers .Since the 1970's material employment has more than doubled, and childhood obesity has more than tripled .The researchers theorized that time constraints for working families may lead them to rely more on prepared or fast foods, which are more likely to be high calorie .Children in child care setting may learn to eat on time schedule rather than when they are naturally hungry. Children who are unsupervised when they come home from school may eat less nutritious snacks and spend more time watching television or playing computer games.

**Spear (2002)** found out in a research that adolescent are facing greater risks for chronic diseases that are related to unhealthy eating patterns .These eating patterns include rapid eating of food and eating food away from home that consist of high fat ,high sugar , and high salt food .These foods are obtained from fast food restaurants ,convenience stores and vending machines that are readily available in mass schools .These eating patterns have lead to increased of obesity.

**Hannan et al., (2001)** examined 4746 adolescence in grades 7 – 12 from 31 secondary schools. Dietary intake was assessed using a food frequency questionnaire and the fast food restaurant use survey .Restaurants use was positively associated with intake of energy from fat .These studies about the importance of the environment in which adolescents consume their

food reflect their perception of convenience ,lack of time and food preference .

**Ludwing., et al (2001)** found in a study that there is a relationship between the consumption of sugar sweetened drink and obesity among 500 school children with the age of 11-17 years .

**Coves., et al (2001)** describes the association of fast food consumption with BMI , energy intake and diet quality in spanish children aged between 12-17 years . Dietary intake was assessed using fast frequency questionnaire that included typical fast food items .Height and weight measured among the population 10.1% reported eating fast food atleast once per month .They interpreted that the consumption of fast food more than once per week increased the risk of overall diet quality ( $P<0.001$ ) .BMI was directly associated with fast food consumption expressed in g/d ( $P=0.025$ ) and in kg/d ( $P=0.017$ ) .The risk of being obese increased with the frequency of fast food consumption ( $P=0.046$ ).Fast food consumption was associated with higher energy intake ,poor diet quality and higher BMI .

**Wilson., et al (2001)** conducted a study to determine the influence of advertisement about food consumption on television. He found that food advertisement aimed at children and reflected a dietary pattern that was conducive to the development of overweight .

**USDHHS (2000)** revealed that more than 80% of adolescents reported eating snacks between meals that usually consisted of processed “Junk food” and high fat “fast food”. This snacks account for one third of adolescents daily food intake .Based on this trend in eating patterns, excess and imbalance in food intake have contributed to an increase in weight in children older than 6 years. The consumption of fast foods can lead to over weight and put an adolescent at great risk for chronic diseases such as diabetes ,heart diseases and hypertension later in life.

**Drummond., et al (2000)** conducted a study to find out the relationship between food habit and obesity .It shows that there is a increasing prevalence of over weight and obesity found in children who used the prepacked and readily available take away food items.

**Jonides (2000)** saw in his study that school age children forget or ignore their meals in their school or play activities. When they are hungry they are often likely to fill up with nutritionally poor, caloric value junk or fast foods mainly they are attracted to eat them on seeing television

commercials to which they are exposed daily. These children often do not exercise as much as children of average weight.

### **CHAPTER III**

## **RESEARCH METHODOLOGY**

The Methodology of research indicates the general pattern to gather empirical data for the problem under investigation.

This chapter comprises the methodology for the study, research approach, research design, settings of the study, population, sample and sample size, sampling technique, criteria for selection of samples, selection of tool, development of tool, description of tool, testing of the tool, pilot study, data collection procedure, plan for data analysis and protection of human rights. The present study aimed at determining the impact of fast food obesity among the children in selected Matriculation school at Madurai.

### **RESEARCH APPROACH**

Quantitative research approach was used to determine the impact of fast food on obesity among children in selected Matriculation school at Madurai.

### **RESEARCH DESIGN**

The research design adopted for this study was descriptive research design.

### **SETTING OF THE STUDY**

The study was conducted in Vikaasa matriculation school at Ponnagaram, Madurai. It is situated 50 K.M away from Matha college of

Nursing Manamadurai. The total students strength of this school is 1200. The school comprises of various sections from L.K.G to 10<sup>th</sup> standard. Eighth to Tenth standard have 13 sections each sections consisted of Minimum 22 students and Maximum 30 students. Totally there are 332 students were found in the age group of 13 to 15 years. Rating scale was used to find out the children those who are consuming fast food. Out of 332 students 170 students were having the habit of consuming fast food. Among 170 students, 100 students were obtained by convenient sampling techniques as samples and children those who fulfill the inclusion criteria were included in this study.

### **POPULATION**

The target population of the study was a group of children aged between 13 -15 years.

### **SAMPLE SIZE**

Sample size consisted of 100 children those who are consuming fast food.

### **SAMPLING TECHNIQUE**

In this study convenient sampling technique was used to select the samples.

### **CRITERIA FOR SAMPLE SELECTION**

#### **INCLUSION CRITERIA**

- ❖ Children who were willing to participate in the study.
- ❖ Children age group between 13 to 15 years
- ❖ Children those were having the practice of fast food consumption at least twice in a week for more than 1 year.
- ❖ Both male and female children.
- ❖ Children studying Eighth, Ninth, Tenth were included.

#### **EXCLUSION CRITERIA**

- ❖ Children who were not willing to participate in the study.
- ❖ Children less than 13 years and above 15 years.
- ❖ Children with any chronic illness and hormonal imbalances.

### **DESCRIPTION OF THE TOOL**

The tool consists of three sections.

#### **SECTION –I**

Deals with demographic data of children such as Age, Gender , Religion, Type of family, Father's Education, Mother's Education, Father's Occupation, Mother's occupation, Family income, Number of sibling in family, Hours of play and Number of years of fast food consumption.

## **SECTION –II**

It consists of rating scale used to identify the children those who are consuming fast food.

## **SECTION – III**

It consists of instruments to assess the level of obesity among children those who consuming fast food.

### **PART -A**

Monitoring the weight by using **Adult Weighing Scale**.

### **PART -B**

Monitoring the Height by using **Stadiometre**.

### **PART -C**

Calculation of Body mass index by using **Quatelet's Scale**.

## **SCORING PROCEDURE**

### **SECTION –II**

It consists of twenty statements related to fast food. Each statement consists of four alternatives according to the fast food consumption. The maximum score is 60.

The subjects were grouped into two categories, based on their scores.

- (i) Non fast food consumers - 0 - 30
- (ii) Fast food consumers - 31- 60

In this study researcher preferred to select only the fast food consumers and they were categorize into three levels based on their scores.

- (i) Low level fast food consumers - 31 - 40
- (ii) Moderate level fast food consumers - 40 - 50
- (iii) High level fast food consumers - 51- 60

### **SECTION –III**

Calculation of Body Mass Index by using Quatelet's scale. And they were categorize in to four based on their BMI level.

- (i) Under weight - < 18.5
- (ii) Normal - 18.5 TO 24.9
- (iii) Overweight or pre obese - 25 TO 29.9
- (iv) Obesity -  $\geq 30$

## **TESTING OF THE TOOL**

### **VALIDITY**

The validation of the tool was obtained by submitting the modified rating scale to five experts in the field of Child Health Nursing and one expert from the medical field. The language, content and format of the tool were revised based on their suggestions.

### **RELIABILITY**

Spearman split – half method was used to find out the reliability of the tool. Correlation Co- efficient was found to be  $r= 0.82$  at 0.05 level of significance for rating scale. So the tool was accepted as reliable.

### **PILOT STUDY**

The pilot study was conducted with the view of assessing the feasibility of the study, to determine major flaws in the study design and to decide plan for data analysis. Before conducting the pilot study, administrative permission was obtained. The study was carried out on 10 subjects who fulfilled the inclusion criterion. The samples were selected by using convenient sampling technique. Pilot study was done in TVS Matriculation School situated at Madurai. Data collection and analysis was done. During the pilot study the investigator did not face any problem. The study was found to be feasible. The subjects included in the pilot study were excluded in the main study.

## **DATA COLLECTION PROCEDURE**

The duration of data collection was 6 weeks. Prior to the data collection the investigator obtained the formal permission from the management and principal of Vikaasa Matriculation school at Madurai in order to conduct the study. The investigator visited the school on given date and introduced by the principal to the students and teachers. The purpose of the study was explained to the study group and their consent was obtained. The main study was conducted in Vikaasa Matriculation school at Madurai. Initial step of data collection was done through survey method by administering Rating scale to find out the fast food consumers. Totally there are 332 students were found in the age group of 13 to 15 years. Rating scale

was used to find out the children those who are consuming fast food. Out of 332 students 170 students were having the habit of consuming fast food. Among 170 students, 100 students were obtained for final study by convenient sampling techniques as samples based on their scores of fast food consumption and those who fulfill the inclusion criteria.

The investigator collected data from Monday to Saturday between 2 to 4 P.M except Sunday. Each day 3 to 4 samples were taken. The data collection procedure was terminated. Finally the investigator gave thanks to the participants and teachers. The investigator found satisfaction during data collection.

### PLAN FOR DATA ANALYSIS

Data were collected, tabulated and analyzed by using statistical methods. Descriptive and inferential statistics was used to analyze the data. Frequency, percentage, chi-square and correlation co-efficient were used to assess the level of obesity on fast food consumers.

The statistical analysis was arranged as follows.

| Sl. No. | Data Analysis          | Methods                   | Remarks   |
|---------|------------------------|---------------------------|---|
| 01.     | Descriptive Statistics | Frequency and Percentage. | Used to identify the fast food consumption among children.<br>Used to assess the level of obesity among fast food consuming children. |
| 02.     | Inferential statistics | Correlation co-efficient. | Used to relate the children those who are consuming fast food and their level of obesity.   |
|         |                        | Chi - square              | Used to associate the children those who are consuming fast food and their selected demographic variables.                            |
|         |                        |                           | Used to associate the level of obesity among children those who are consuming fast food and their                                     |

|  |  |  |                                 |
|--|--|--|---------------------------------|
|  |  |  | selected demographic variables. |
|--|--|--|---------------------------------|

## **PROTECTION OF HUMAN RIGHTS**

The research proposal was approved by the dissertation committee prior to the pilot study. The permission was obtained from the principal and head of the department of Child Health Nursing in Matha college of Nursing and the permission was obtained from the Principal, Vikaasa Matriculation school for conducting the study. A pilot study as well as the main study was conducted after seeking permission from all authorities. Assurance was given to each subject selected for the study that confidentiality and anonymity would be maintained.

## **CHAPTER – IV**

### **ANALYSIS AND INTERPRETATION**

**Abdella and Levine (1979)** have stated that the interpretation of tabulated data can bring to light the real meaning of the findings of study. The data collected through planned schedule were analyzed by using descriptive and inferential statistics.

This chapter deals with analysis and interpretation of the data collected from 100 fast food consumers age between 13 -15 years studying in Vikaasa Matriculation School, Madurai.

### **OBJECTIVES**

- To identify the level of fast food consumption among children.
- To assess the level of obesity among fast food consuming children.
- To relate the children those who are consuming fast food and their level of obesity.
- To associate the children those who are consuming fast food and their selected demographic variables such as Age, Gender, Religion, Type of family, Father's Education, Mother's Education, Father's Occupation, Mother's occupation, Family income, Number of sibling in family, Hours of play and Number of years of fast food consumption.
- To associate the level of obesity among children those who are consuming fast food and their selected demographic variables such as Age, Gender, Religion, Type of family, Father's Education , Mother's Education, Father's Occupation, Mother's occupation, Family income, Number of sibling in family, Hours of play and Number of years of fast food consumption.

### **PRESENTATION OF DATA**

The data is organized, analyzed and presented in the following sections.

#### **Section – I**

Frequency distribution and percentage of samples according to their demographic variables.

#### **Section – II**

Frequency distribution and percentage of fast food consumers according to their level of fast food consumption.

### Section – III

Frequency distribution and percentage on level of obesity according to their Body Mass Index.

### Section – IV

Relationship between the children those who are consuming fast food and their level of obesity.

### Section – V

Association between the children those who are consuming fast food and their selected demographic variables.

### Section – VI

Association between the level of obesity among children those who are consuming fast food and their selected demographic variables.

## SECTION –I

**TABLE - 1 FREQUENCY DISTRIBUTION AND PERCENTAGE OF SAMPLES ACCORDING TO THEIR SELECETED DEMOGRAPHIC VARIABLES.**

**(N=100)**

| <b>Sl.No.</b> | <b>Demographic Variables</b> | <b>Frequency</b> | <b>Percentage</b> |
|---------------|------------------------------|------------------|-------------------|
| <b>1</b>      | <b>Age</b>                   |                  |                   |
|               | (a) 13 years                 | 51               | 51%               |
|               | (b) 14 years                 | 34               | 34%               |
|               | (c) 15 years                 | 15               | 15%               |
| <b>2</b>      | <b>Gender</b>                |                  |                   |
|               | (a) Male                     | 55               | 55%               |
|               | (b) Fe male                  | 45               | 45%               |
| <b>3</b>      | <b>Religion</b>              |                  |                   |
|               | (a) Hindu                    | 78               | 78%               |
|               | (b) Muslim                   | 03               | 3%                |
|               | (c) Christian                | 19               | 19%               |
|               | (d) Others                   | 0                | 0%                |
| <b>4</b>      | <b>Type of family</b>        |                  |                   |
|               | (a) Nuclear                  | 68               | 68%               |
|               | (b) Joint                    | 30               | 30%               |

|           |                                     |    |     |
|-----------|-------------------------------------|----|-----|
|           | (c) Extended                        | 02 | 2%  |
| <b>5</b>  | <b>Father's Education</b>           |    |     |
|           | (a) Illiterate                      | 0  | 0%  |
|           | (b) Primary Education               | 04 | 4%  |
|           | (c) Secondary Education             | 16 | 16% |
|           | (d) Under Graduate                  | 30 | 30% |
|           | (e) Post Graduate                   | 50 | 50% |
| <b>6</b>  | <b>Mother's Education</b>           |    |     |
|           | (a) Illiterate                      | 0  | 0%  |
|           | (b) Primary Education               | 04 | 4%  |
|           | (c) Secondary Education             | 21 | 21% |
|           | (d) Under Graduate                  | 57 | 57% |
|           | (e) Post Graduate                   | 18 | 18% |
| <b>7</b>  | <b>Father's occupation</b>          |    |     |
|           | (a) Self Employment                 | 45 | 45% |
|           | (b) Govt. Employee                  | 20 | 20% |
|           | (c) Professional                    | 35 | 35% |
| <b>8</b>  | <b>Mother's occupation</b>          |    |     |
|           | (a) Self Employment                 | 10 | 10% |
|           | (b) Govt. Employee                  | 20 | 20% |
|           | (c) Professional                    | 16 | 16% |
|           | (d) House wife                      | 54 | 54% |
| <b>9</b>  | <b>Family Income</b>                |    |     |
|           | (a) 5000 – 10,000 /Month            | 13 | 13% |
|           | (b)10,001 – 15,000 /Month           | 15 | 15% |
|           | (c)Above 15,001Month                | 72 | 72% |
| <b>10</b> | <b>No of Sibling in Family</b>      |    |     |
|           | (a) 0                               | 17 | 17% |
|           | (b) 1                               | 66 | 66% |
|           | (c) 2                               | 14 | 14% |
|           | (d) 3 and Above                     | 03 | 3%  |
| <b>11</b> | <b>Hours of Play</b>                |    |     |
|           | (a)1 -2 Hours per day               | 50 | 50% |
|           | (b)2-3 Hours per day                | 36 | 36% |
|           | (c)Above 3 Hours per day            | 14 | 14% |
| <b>12</b> | <b>Number of years of fast food</b> |    |     |

|  | <b>consumption</b>   |    |     |
|--|----------------------|----|-----|
|  | (a)1 Year            | 19 | 19% |
|  | (b)2 Years           | 18 | 18% |
|  | (c)3 Years and above | 63 | 63% |

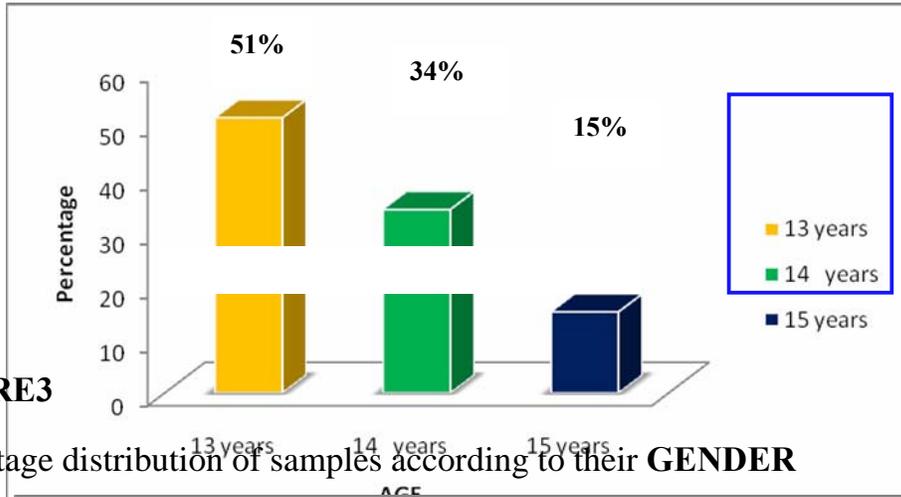
**Table – 1** shows that regarding age of the children 51 (51%) were 13 years, 34 (34%) were 14 years 15 (15%) were 15 years. Out of 100 samples 55 (55%) children were males, 45 (45%) were females. Regarding religion 78 (78%) belongs to Hindu, 3 (3%) were Muslims, 19 (19%) were Christians.

Regarding the type of family 68 (68%) children belongs to nuclear family, 30 (30%) were in joint family, 2 (2%) of them were from extended family. Father's education revealed that 4 (4%) had primary education, 16(16%) had secondary education, 30(30%) were undergraduates, 50(50%) were post graduates. Mother's education revealed that 4(4%) had primary education, 21(21%) had secondary education, 57(57%) were undergraduates, 18(18%) were post graduates. Regarding the Father's occupation 45(45%) were self employed, 20(20%) were employed in the government, 38(38%) were professionals.

Mother's occupation shows 10(10%) were self employed, 20(20%) were government employed, 16(16%) were professionals, 54(54%) were housewife's. Out of 100 samples regarding the family income 13(13%) Earns Rs.5000 to Rs.10000 per month, 15(15%) earns Rs.10, 001 to Rs.15,000 per month , 72(72%) earns above Rs.15001 per month. Among the total samples 17(17%) has no siblings, 66(66%) has only one sibling, 14(14%) has 2 siblings and 3(3%) has 3 or more siblings. Out of 100 children 50 (50%) play 1 -2 hrs per day, 36 (36%) play 2-3 hrs per day, 14(14%) play more then 3 hrs per day. Regarding fast food consumption 9(9%) children were consume fast food around 1 year, 18 (18%) consumes around 2 years, 63(63%) consumes 3 and more years.

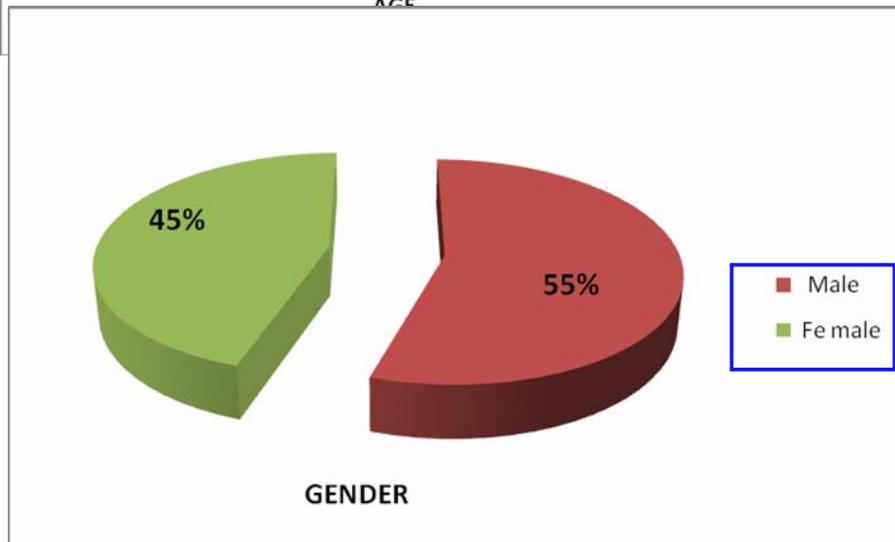
## **FIGURE2**

Percentage distribution of samples according to their **AGE**



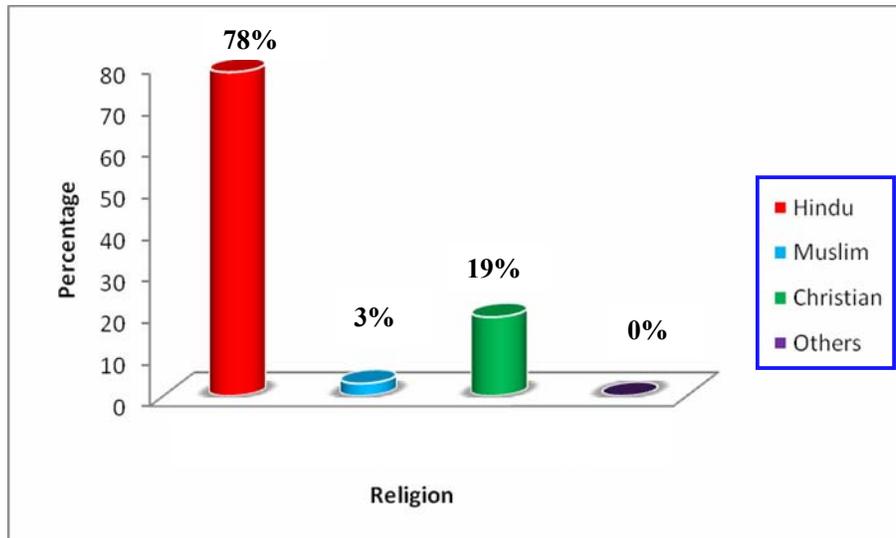
**FIGURE3**

Percentage distribution of samples according to their **GENDER**



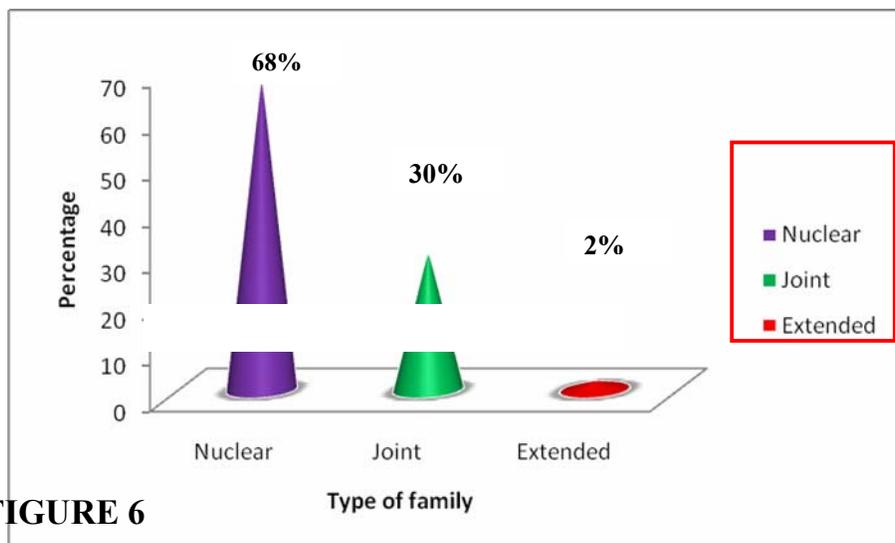
**FIGURE 4**

Percentage distribution of samples according to their **RELIGION**



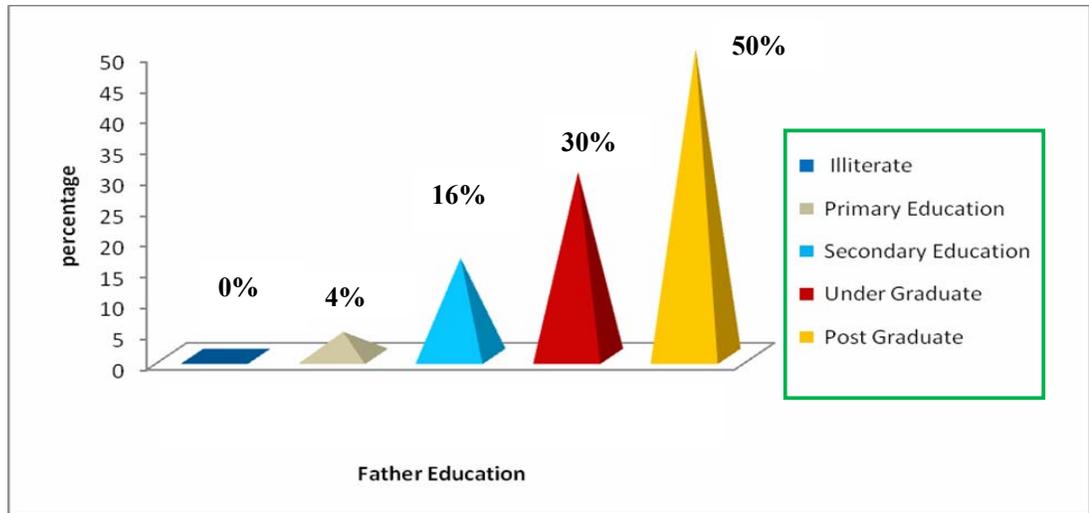
**FIGURE 5**

Percentage distribution of samples according to their **TYPE OF FAMILY**



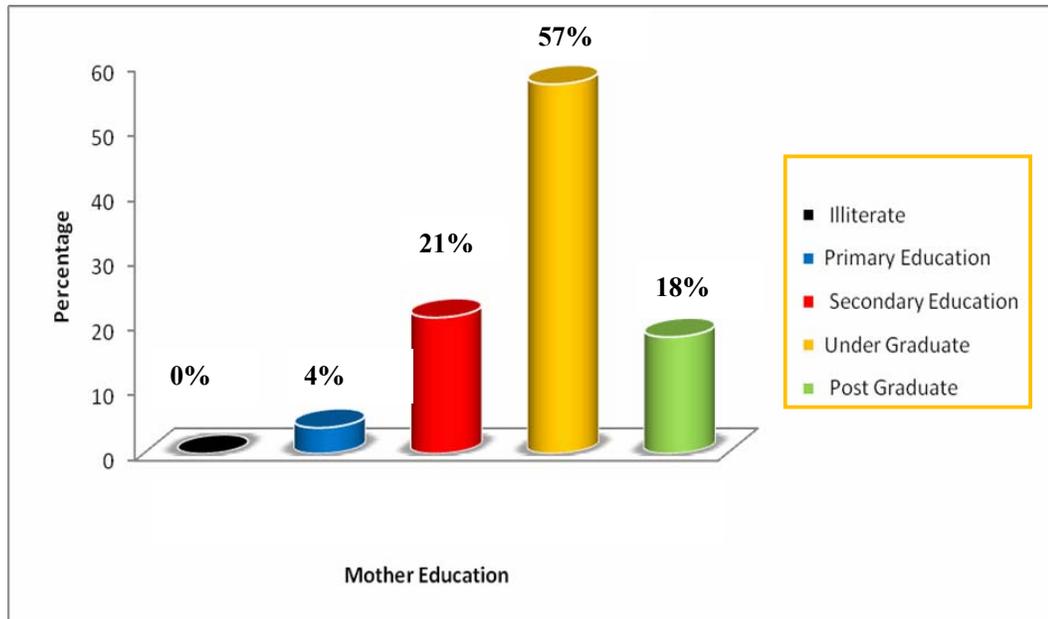
**FIGURE 6**

Percentage distribution of samples according to their **FATHER'S EDUCATION**



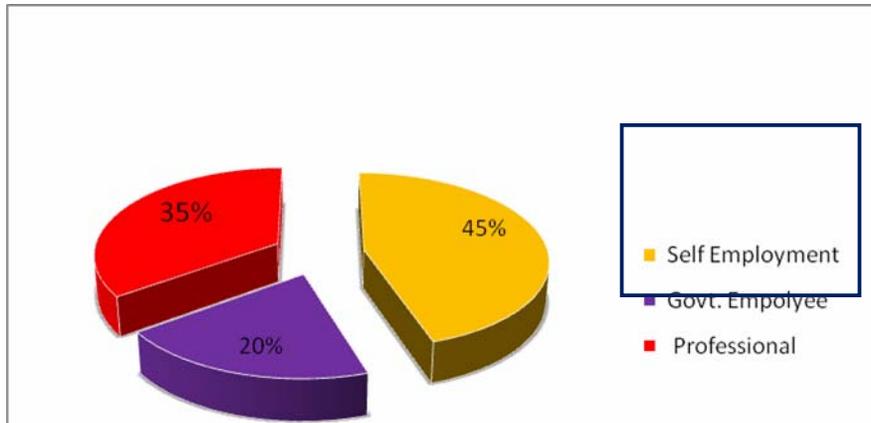
**FIGURE7**

Percentage distribution of couples according to their **MOTHER'S EDUCATION**



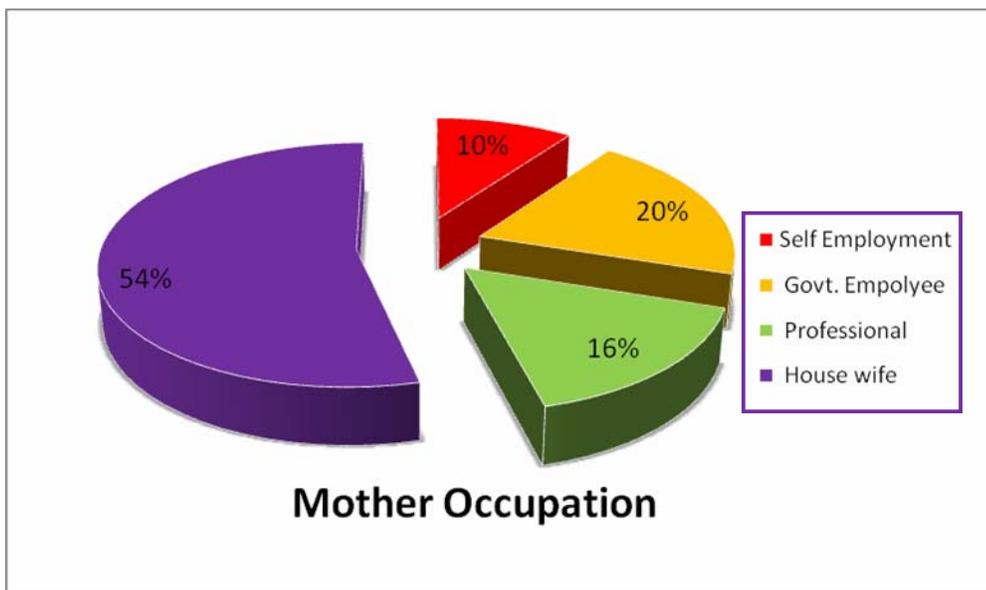
**FIGURE 8**

Percentage distribution of samples according to their **FATHER'S OCCUPATION**



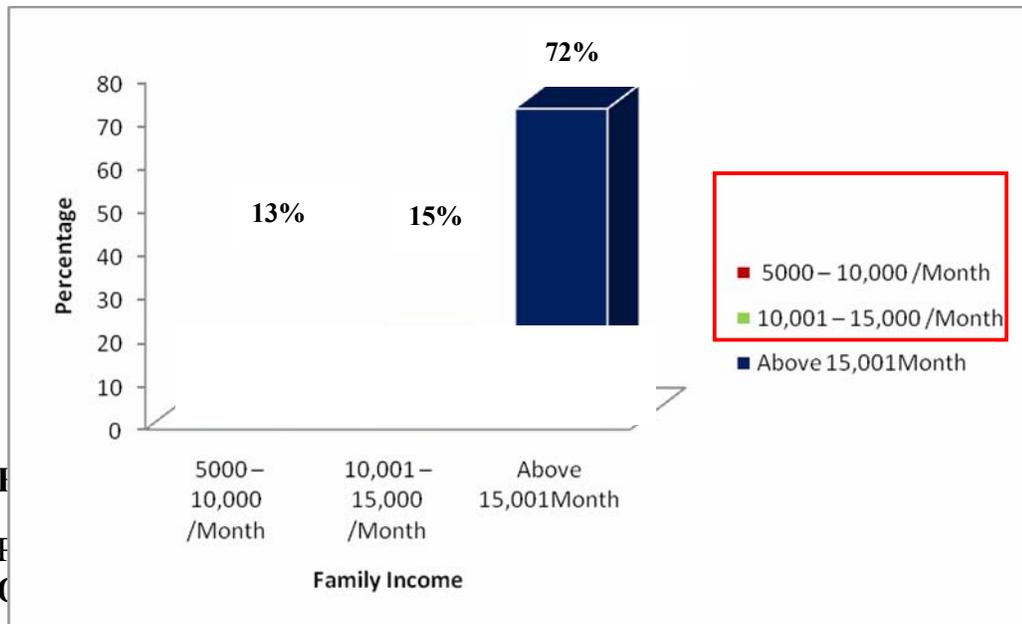
**FIGURE 9**

Percentage distribution of samples according to their **MOTHER'S OCCUPATION**



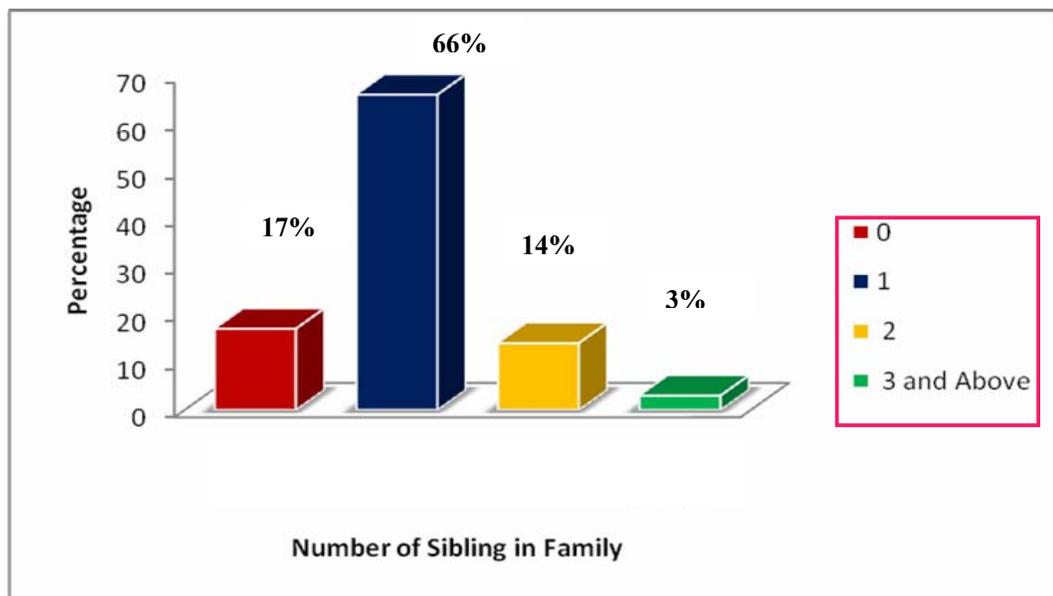
**FIGURE 10**

Percentage distribution of samples according to their **FAMILY INCOME**



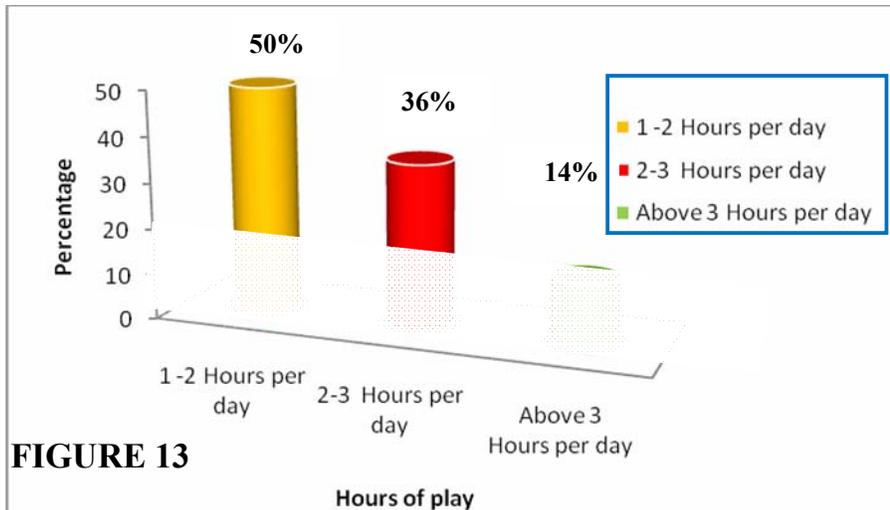
F  
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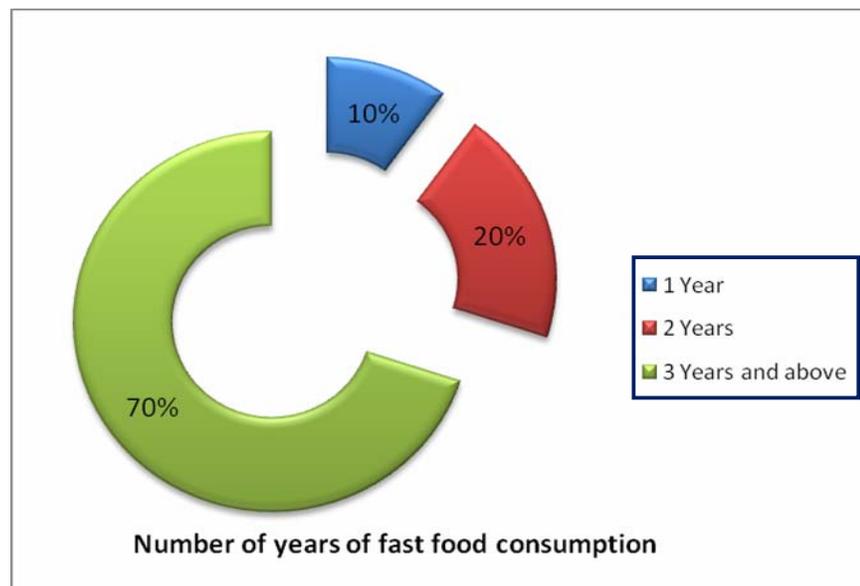
**FIGURE 12**

Percentage distribution of samples according to their **HOURS OF PLAY**



**FIGURE 13**

Percentage distribution of samples according to their **NUMBER OF YEAR OF THE FAST FOOD CONSUMPTION**



**SECTION –II**

**TABLE - 2 FREQUENCY DISTRIBUTION AND PERCENTAGE OF SAMPLES ACCORDING TO THEIR LEVEL OF FAST FOOD CONSUMPTION.**

(N=100)

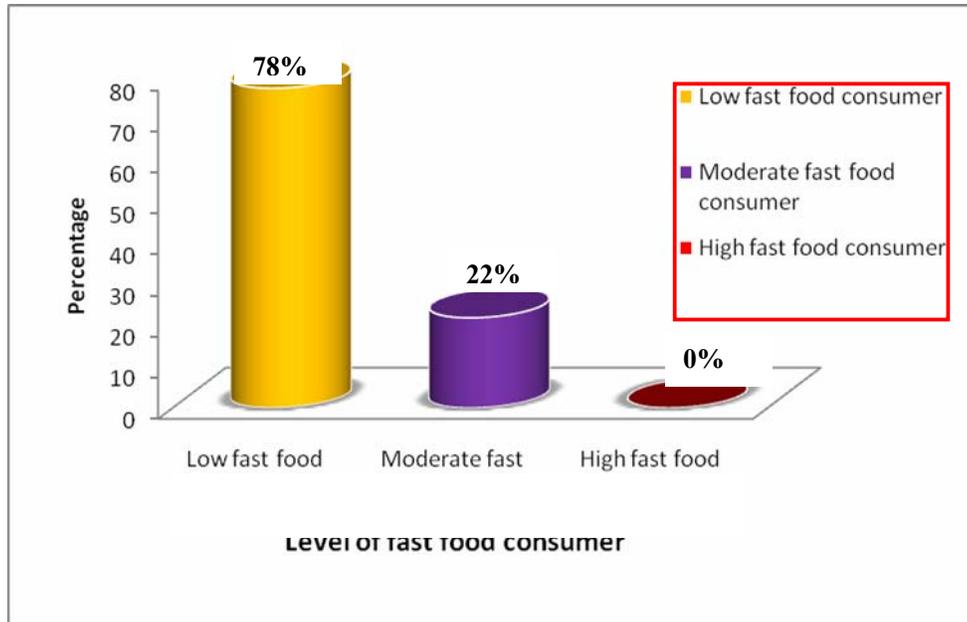
| Sl.No | Level of fast food consumption | Frequency (F) | Percentage (%) |
|-------|--------------------------------|---------------|----------------|
|       |                                |               |                |

|    |   |    |    |
|----|---|----|----|
| 1. | Low level fast food consumer<br>(score 31 - 40 )    | 78 | 78 |
| 2. | Moderate level fast food<br>consumer (score 41 -50) | 22 | 22 |
| 3. | High level fast food consumer<br>(score 51-60)      | 0  | 0  |

**Table –2** shows that the level of fast food consumption among school children according to their fast food consumption score in that 78 (78%) were low fast food consumers, 22 (22%) were moderate fast food consumer and there was no high fast food consumers.

**FIGURE 14**

Percentage distribution of samples according to their **LEVEL OF FAST FOOD CONSUMPTION**



### SECTION –III

**TABLE - 3 FREQUENCY DISTRIBUTION AND PERCENTAGE OF SAMPLES ACCORDING TO THEIR LEVEL OF OBESITY AMONG FAST FOOD CONSUMERS.**

**(N=100)**

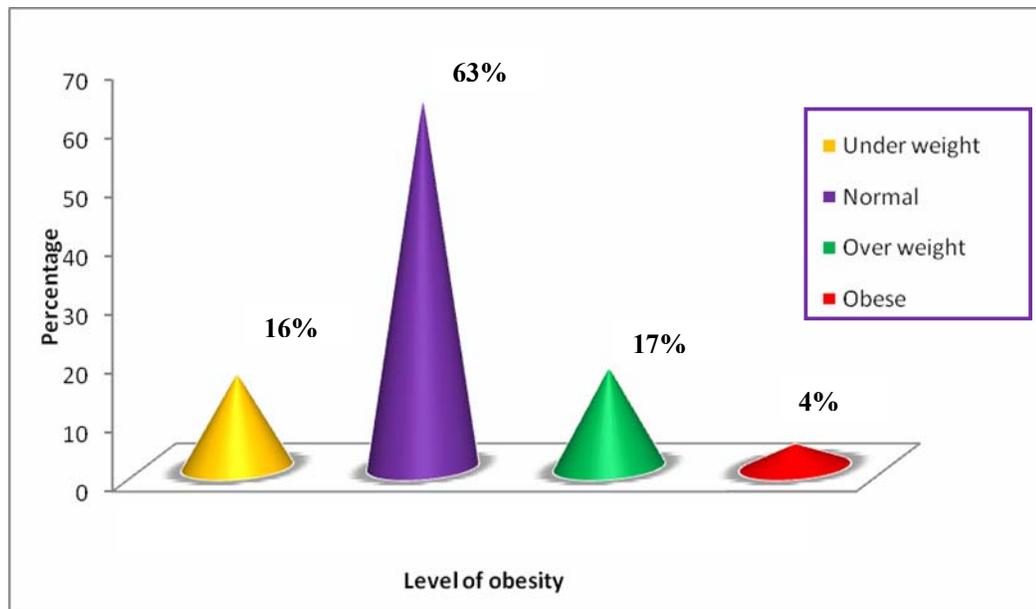
| Sl.No | Level of obesity based on Body mass index | Frequency F | Percentage % |
|-------|---|-------------|--------------|
| 1     | Under weight                              | 16          | 16           |
| 2     | Normal                                    | 63          | 63           |

|   |             |    |    |
|---|-------------|----|----|
| 3 | Over weight | 17 | 17 |
| 4 | Obese       | 4  | 4  |

**Table – 3** shows that the level of obesity according to their body mass index among the school children in that 16 (16%) were under weight, 63 (63%) were in normal weight, 17 (17%) were overweight, 4 (4%) were obese.

**FIGURE 15**

Percentage distribution of samples according to their **LEVEL OF OBESITY** based on Body Mass Index.



#### SECTION -IV

**Table –4 RELATIONSHIP BETWEEN THE CHILDREN THOSE WHO ARE CONSUMING FAST FOOD AND THEIR LEVEL OF OBESITY.**

(N=100)

| Sl.No | Variables                      | Mean (x) | Standard deviation (S.D) | Co- Efficient of Co-Relation (r) | Table value of 'r' |
|-------|--------------------------------|----------|--------------------------|----------------------------------|--------------------|
| 1     | Level of fast food consumption | 36.41    | 4.8                      | 0.30                             | 0.256 **           |
| 2     | Level of obesity               | 22.24    | 3.86                     |                                  |                    |

**\*\* - Significant at 1 percent level**

Table 4 reveals that the table value of 'r' at 1% level of significant is 0.256. Since the calculated 'r' value is greater than table value 'r', so the relationship between fast food consumption and obesity was highly significant. It indicated that the fast food consumption and obesity were positively or directly co-related.

#### SECTION -V

**TABLE -5 ASSOCIATION BETWEEN THE CHILDREN THOSE WHO ARE CONSUMING FAST FOOD AND THEIR SELECTED DEMOGRAPHIC VARIABLES.**

**(N=100)**

| Sl.No | Demographic Variables | Level of fast food consumption |    |                            |    |                        |   | Chi square |
|-------|-----------------------|--------------------------------|----|----------------------------|----|------------------------|---|------------|
|       |                       | Low level consumption          |    | Moderate level consumption |    | High level consumption |   | $\chi^2$   |
|       |                       | F                              | %  | F                          | %  | F                      | % |            |
| 1     | <b>Age</b>            |                                |    |                            |    |                        |   |            |
|       | (a) 13 years          | 48                             | 48 | 3                          | 3  | 0                      | 0 | 20.196*    |
|       | (b) 14 years          | 18                             | 18 | 16                         | 16 | 0                      | 0 |            |
|       | (c) 15 years          | 12                             | 12 | 3                          | 3  | 0                      | 0 |            |
| 2     | <b>Gender</b>         |                                |    |                            |    |                        |   |            |
|       | (a) Male              | 41                             | 41 | 14                         | 14 | 0                      | 0 | 0.985      |
|       | (b) Fe male           | 37                             | 37 | 8                          | 8  | 0                      | 0 |            |
| 3     | <b>Religion</b>       |                                |    |                            |    |                        |   |            |
|       | (a) Hindu             | 63                             | 63 | 15                         | 15 | 0                      | 0 | 4.039      |
|       | (b)Muslim             | 1                              | 1  | 2                          | 2  | 0                      | 0 |            |
|       | (c)Christian          | 14                             | 14 | 5                          | 5  | 0                      | 0 |            |
|       | (d)Others             | 0                              | 0  | 0                          | 0  | 0                      | 0 |            |
| 4     | <b>Type of family</b> |                                |    |                            |    |                        |   |            |
|       | (a)Nuclear            | 52                             | 52 | 16                         | 16 | 0                      | 0 | 1.501      |
|       | (b)Joint              | 25                             | 25 | 5                          | 5  | 0                      | 0 |            |
|       | (c)Extended           | 1                              | 1  | 1                          | 1  | 0                      | 0 |            |

|   |                           |   |   |   |   |   |   |       |
|---|---------------------------|---|---|---|---|---|---|-------|
| 5 | <b>Father's Education</b> |   |   |   |   |   |   | 6.149 |
|   | (a) Illiterate            | 0 | 0 | 0 | 0 | 0 | 0 |       |

|   |                            |    |    |    |    |   |   |       |
|---|----------------------------|----|----|----|----|---|---|-------|
|   | (b) Primary Education      | 4  | 4  | 0  | 0  | 0 | 0 |       |
|   | (c) Secondary Education    | 9  | 9  | 7  | 7  | 0 | 0 |       |
|   | (d) Under Graduate         | 25 | 25 | 5  | 5  | 0 | 0 |       |
|   | (e) Post Graduate          | 40 | 40 | 10 | 10 | 0 | 0 |       |
| 6 | <b>Mother's Education</b>  |    |    |    |    |   |   |       |
|   | (a) Illiterate             | 0  | 0  | 0  | 0  | 0 | 0 | 4.279 |
|   | (b) Primary Education      | 3  | 3  | 1  | 1  | 0 | 0 |       |
|   | (c) Secondary Education    | 14 | 14 | 7  | 7  | 0 | 0 |       |
|   | (d) Under Graduate         | 48 | 48 | 9  | 9  | 0 | 0 |       |
|   | (e) Post Graduate          | 13 | 13 | 5  | 5  | 0 | 0 |       |
| 7 | <b>Father's occupation</b> |    |    |    |    |   |   |       |
|   | (a) Self Employment        | 36 | 36 | 9  | 9  | 0 | 0 | 6.55* |
|   | (b) Govt. Employee         | 19 | 19 | 1  | 1  | 0 | 0 |       |
|   | (c) Professional           | 23 | 23 | 12 | 12 | 0 | 0 |       |

|   |                            |   |   |   |   |   |   |         |
|---|----------------------------|---|---|---|---|---|---|---------|
| 8 | <b>Mother's occupation</b> |   |   |   |   |   |   | 10.578* |
|   | (a) Self                   | 8 | 8 | 2 | 2 | 0 | 0 |         |

|    |   |    |    |    |    |   |   |         |
|----|---|----|----|----|----|---|---|---------|
|    | Employment                                      |    |    |    |    |   |   |         |
|    | (b) Govt. Employee                              | 19 | 19 | 1  | 1  | 0 | 0 |         |
|    | (c) Professional                                | 15 | 15 | 1  | 1  | 0 | 0 |         |
|    | (d) House wife                                  | 36 | 36 | 18 | 18 | 0 | 0 |         |
| 9  | <b>Family Income</b>                            |    |    |    |    |   |   |         |
|    | (a) 5000 – 10000 /Month                         | 10 | 10 | 3  | 3  | 0 | 0 | 15.388* |
|    | (b)10,001–15,000 /Month                         | 6  | 6  | 9  | 9  | 0 | 0 |         |
|    | (c) Above 15,001Month                           | 62 | 62 | 10 | 10 | 0 | 0 |         |
| 10 | <b>No of Sibling in Family</b>                  |    |    |    |    |   |   |         |
|    | (a) 0   | 14 | 14 | 3  | 3  | 0 | 0 | 1.227   |
|    | (b)1  | 50 | 50 | 16 | 16 | 0 | 0 |         |
|    | (c)2  | 11 | 11 | 3  | 3  | 0 | 0 |         |
|    | (d)3 and Above                                  | 3  | 3  | 0  | 0  | 0 | 0 |         |
| 11 | <b>Hours of Play</b>                            |    |    |    |    |   |   |         |
|    | (a)1-2 Hours per day                            | 41 | 41 | 9  | 9  | 0 | 0 | 1.004   |
|    | (b)2-3 Hours per day                            | 27 | 27 | 9  | 9  | 0 | 0 |         |
|    | (c)Above 3 Hours per day                        | 10 | 10 | 4  | 4  | 0 | 0 |         |
| 12 | <b>Number of years of fast food consumption</b> |    |    |    |    |   |   | 2.259   |
|    | (a) 1 Year                                      | 13 | 13 | 6  | 6  | 0 | 0 |         |



|   |                       |    |    |    |    |    |    |   |   |        |
|---|-----------------------|----|----|----|----|----|----|---|---|--------|
|   | (a)13 years           | 11 | 11 | 31 | 31 | 6  | 6  | 3 | 3 | 50.88* |
|   | (b)14 years           | 5  | 5  | 20 | 20 | 8  | 8  | 1 | 1 |        |
|   | (c)15 years           | 0  | 0  | 12 | 12 | 3  | 3  | 0 | 0 |        |
| 2 | <b>Gender</b>         |    |    |    |    |    |    |   |   |        |
|   | (a) Male              | 6  | 6  | 35 | 35 | 11 | 11 | 3 | 3 | 3.721  |
|   | (b) Female            | 10 | 10 | 28 | 28 | 6  | 6  | 1 | 1 |        |
| 3 | <b>Religion</b>       |    |    |    |    |    |    |   |   |        |
|   | (a) Hindu             | 11 | 11 | 51 | 51 | 13 | 13 | 3 | 3 | 7.638  |
|   | (b)Muslim             | 2  | 2  | 0  | 0  | 1  | 1  | 0 | 0 |        |
|   | (c)Christian          | 3  | 3  | 12 | 12 | 3  | 3  | 1 | 1 |        |
|   | (d)Others             | 0  | 0  | 0  | 0  | 0  | 0  | 0 | 0 |        |
| 4 | <b>Type of family</b> |    |    |    |    |    |    |   |   |        |
|   | (a)Nuclear            | 9  | 9  | 42 | 42 | 14 | 14 | 3 | 3 | 3.962  |
|   | (b)Joint              | 7  | 7  | 19 | 19 | 3  | 3  | 1 | 1 |        |
|   | (c)Extended           | 0  | 0  | 2  | 2  | 0  | 0  | 0 | 0 |        |

|   |                            |    |    |    |    |   |   |   |   |       |
|---|----------------------------|----|----|----|----|---|---|---|---|-------|
| 5 | <b>Father's Education</b>  |    |    |    |    |   |   |   |   |       |
|   | (a)Illiterate              | 0  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 3.108 |
|   | (b)Primary Education       | 0  | 0  | 3  | 3  | 1 | 1 | 0 | 0 |       |
|   | (c) Secondary Education    | 2  | 2  | 11 | 11 | 3 | 3 | 0 | 0 |       |
|   | (d)Under Graduate          | 5  | 5  | 20 | 20 | 4 | 4 | 1 | 1 |       |
|   | (e) Post Graduate          | 9  | 9  | 29 | 29 | 9 | 9 | 3 | 3 |       |
| 6 | <b>Mother's Education</b>  |    |    |    |    |   |   |   |   |       |
|   | (a)Illiterate              | 0  | 0  | 0  | 0  | 0 | 0 | 0 | 0 | 8.194 |
|   | (b)Primary Education       | 0  | 0  | 3  | 3  | 1 | 1 | 0 | 0 |       |
|   | (c) Secondary Education    | 3  | 3  | 13 | 13 | 4 | 4 | 1 | 1 |       |
|   | (d)Under Graduate          | 10 | 10 | 38 | 38 | 7 | 7 | 2 | 2 |       |
|   | (e) Post Graduate          | 3  | 3  | 9  | 9  | 5 | 5 | 1 | 1 |       |
| 7 | <b>Father's occupation</b> |    |    |    |    |   |   |   |   |       |
|   | (a) Self Employment        | 5  | 5  | 32 | 32 | 5 | 5 | 3 | 3 | 6.014 |
|   | (b) Govt. Employee         | 5  | 5  | 11 | 11 | 4 | 4 | 0 | 0 |       |
|   | (c) Professional           | 6  | 6  | 20 | 20 | 8 | 8 | 1 | 1 |       |

|   |                            |    |    |    |    |   |   |   |   |       |
|---|----------------------------|----|----|----|----|---|---|---|---|-------|
| 8 | <b>Mother's occupation</b> |    |    |    |    |   |   |   |   |       |
|   | (a) Self Employment        | 1  | 1  | 8  | 8  | 0 | 0 | 1 | 1 | 9.423 |
|   | (b) Govt. Employee         | 1  | 1  | 12 | 12 | 5 | 5 | 2 | 2 |       |
|   | (c) Professional           | 3  | 3  | 10 | 10 | 3 | 3 | 0 | 0 |       |
|   | (d) House wife             | 11 | 11 | 33 | 33 | 9 | 9 | 1 | 1 |       |

|    |   |    |    |    |    |    |    |   |   |        |
|----|---|----|----|----|----|----|----|---|---|--------|
| 9  | <b>Family Income</b>                            |    |    |    |    |    |    |   |   |        |
|    | (a) 5000 – 10,000 /Month                        | 2  | 2  | 7  | 7  | 3  | 3  | 1 | 1 | 28.80* |
|    | (b) 10,001 – 15,000 /Month                      | 0  | 0  | 9  | 9  | 5  | 5  | 1 | 1 |        |
|    | (c) Above 15,001Month                           | 14 | 14 | 47 | 47 | 9  | 9  | 2 | 2 |        |
| 10 | <b>No of Sibling in Family</b>                  |    |    |    |    |    |    |   |   |        |
|    | (a)0  | 0  | 0  | 9  | 9  | 6  | 6  | 2 | 2 | 37.86* |
|    | (b)1  | 10 | 10 | 43 | 43 | 11 | 11 | 2 | 2 |        |
|    | (c)2  | 4  | 4  | 10 | 10 | 0  | 0  | 0 | 0 |        |
|    | (d)3 and Above                                  | 2  | 2  | 1  | 1  | 0  | 0  | 0 | 0 |        |
| 11 | <b>Hours of Play</b>                            |    |    |    |    |    |    |   |   |        |
|    | (a) 1-2Hours per day                            | 6  | 6  | 31 | 31 | 11 | 11 | 2 | 2 | 4.357  |
|    | (b) 2-3Hours per day                            | 6  | 6  | 24 | 24 | 4  | 4  | 2 | 2 |        |
|    | (c) Above 3 Hours per day                       | 4  | 4  | 8  | 8  | 2  | 2  | 0 | 0 |        |
| 12 | <b>Number of years of fast food consumption</b> |    |    |    |    |    |    |   |   |        |
|    | (a) 1 Year                                      | 2  | 2  | 10 | 10 | 6  | 6  | 1 | 1 | 35*    |
|    | (b) 2 Years                                     | 2  | 2  | 14 | 14 | 2  | 2  | 0 | 0 |        |
|    | (c) 3 Years and above                           | 12 | 12 | 39 | 39 | 9  | 9  | 3 | 3 |        |

\* - Significant at 0.05 level

The data presented in table 6 shows that the chi square test was carried out to find out the association between the level of obesity and their selected demographic variables. The results shows that their was a significant association between the level of obesity and age, number of sibling, family

income ,number of years of fast food consumption. There was no significant association between the level of obesity and gender, religion, type of family, Father's and Mother's education, Father's and Mother's occupation and hours of play.

## **CHAPTER – V**

### **DISCUSSION**

The aim of this study is to determine the impact of fast food on obesity among children in selected matriculation school at Madurai.

The research design used in this study was descriptive design. The setting of the study was Vikaasa Matriculation School at Madurai. The findings of the study have been discussed with reference to the objectives, frame work and hypotheses of this study.

#### **OBJECTIVES**

- To identify the level of fast food consumption among children.
- To assess the level of obesity among fast food consuming children.
- To relate the children those who are consuming fast food and their level of obesity.

- To associate the children those who are consuming fast food and their selected demographic variables such as Age, Gender , Religion, Type of family, Father's Education , Mother's Education, Father's Occupation , Mother's occupation, Family income, Number of sibling in family , Hours of play and Number of years of fast food consumption.
- To associate the level of obesity among children those who are consuming fast food and their selected demographic variables such as Age, Gender , Religion , Type of family, Father's Education , Mother's Education, Father's Occupation , Mother's occupation, Family income, Number of sibling in family , Hours of play and Number of years of fast food consumption.

### **The results of the study were discussed below**

#### **Objective 1 To identify the level of fast food consumption among children.**

Table 2 shows that 78 (78%) were low fast food consumers , 22 (22%) were moderate fast food consumers and there was no high fast food consumers.

Hence, the researcher concluded that prevalence of fast food consumption found among children age group of 13 to 15 years.

The findings were supported by **Jaime Holguin (2003)** and it showed that everyday nearly one third of school children aged 13 – 19 years consumes fast food. He also reveals that current levels of fast food consumption probably are even higher because of increase in the number of fast food restaurants and in fast food marketing.

#### **Objective 2 To assess the level of obesity among fast food consuming children.**

Table -3 shows that out of 100 fast food consumers 17 % were overweight and 4% were obese.

Hence, the researcher concluded that consuming fast food frequently leads to overweight and if more frequently consumed it may lead to obese children.

The findings was supported by **Rosenheck (2008)**, According to him consumption of fast food which have high energy densities and increases the weight of the school children aged between 12 -16 years.

**Objective 3 To relate the children those who are consuming fast food and their level of obesity.**

Table -4 shows that there was a positive correlation between the fast food consumption and level of obesity at 1% level of significance. The calculated co-relation co-efficient (r) value was 0.30.

Hence, the research of concluded that the consumption of fast food will increase the level of obesity. So the researcher accept the research hypothesis and rejected null hypothesis.

The findings was supported by **Mc Crory et al (2002)**, He reported a positive link between body fatness and frequency of consuming fast food meals. This findings was also consistent with other reports of **Hulshof et al (2003)** and **Hassapidou et al (2006)** who showed that consuming the fast food or eating in a restaurant is associated with high energy intake.

**Objective 4 To associate the children those who are consuming fast food and their selected demographic variables such as Age, Gender,Religion,Type of family, Father's Education, Mother's Education, Father's Occupation , Mother's occupation, Family income, Number of sibling in family , Hours of play and Number of years of fast food consumption.**

Table 5 shows that there was a significant association between the fast food consumption and Age, Father's and Mother's occupation, Family income.

Hence, the researcher concluded that the prevalence of fast food consumption increases with Age, Both Father and Mother working away from home as well as with higher family income.

The findings was supported by **Neumark – Sztainer et al (2002)**, they found parental work schedules away from home can contribute to decreased supervision of children's eating habits there by allowing them to develop unhealthy eating patterns. Since mother have decreased time for meal preparation , the frequency of fast food consumption by children increases.

Other findings shows that there was no significant association between fast food consumption and Gender, Religion, Type of family, Father's and mother's education, Number of siblings, Hours of Play and Number of years of fast food consumption.

Hence, the researcher concluded that the samples were not equally distributed by Gender, Religion, Type of family, Father's and mother's education, Number of siblings, Hours of Play and Number of years of fast food consumption. So the researcher partially accepted research hypothesis and rejected null hypothesis.

**Objective 5 To associate the level of obesity among children those who are consuming fast food and their selected demographic variables such as Age, Gender , Religion , Type of family, Father's Education , Mother's Education, Father's Occupation , Mother's occupation, Family income, Number of sibling in family , Hours of play and Number of years of fast food consumption.**

Table -6 shows that there was a significant association between the level of obesity and Age, Number of Siblings, Family Income, Number of years of fast food consumption.

Hence, the researcher concluded that when the Family income is increased the level of obesity is also increasing. Also when the number of siblings in the family is less, the level of obesity increases. The researcher also found when the number of years of fast food consumption increases, the level of obesity also increases.

The findings was supported by **Ramesh K.Goyal et al (2006)** who stated that prevalence of overweight and obesity were higher in high socioeconomic status as compared to middle socioeconomic status. The prevalence of obesity as well as over weight in low socioeconomic status group was the lowest as compared to other groups.

The findings was also supported by **Kapil et al (2005)**, According to him children from affluent sections were frequenting fast food joints more often and are consuming costly fatty items and oil. They get into the habit of

consuming oily canteen stuffs for years. He found prevalence of overweight and obesity much higher in those children who consumes fast food for years.

Other findings shows that there was no significant association between the level of obesity and Gender, Religion, Type of family, Father's and Mother's education, Father's and Mother's occupation and Hours of Play.

Hence, the researcher concluded that the samples were not equally distributed by Gender, Religion, Type of family, Father's and Mother's education, Father's and Mother's occupation and Hours of Play. So the researcher partially accepted research hypothesis and rejected null hypothesis.

## **CHAPTER VI**

### **SUMMARY, RECOMMENDATIONS AND CONCLUSION**

This chapter deals with the summary, major findings, implications, recommendation of the study and conclusion. The implication are given for different areas like Nursing Education, Administration, Nursing practice and Nursing research.

#### **SUMMARY**

Obesity has been defined as an increase in body weight resulting from an excessive accumulation of body fat relative to lean body mass. According to the international obesity task force about 155 million children worldwide were overweight more than 30 million overweight children were obese.

One of the major reasons for the increase in the obesity rate among the children is the consumption of fast foods. It is a known fact that the children are more attracted to fast foods because of its taste.

A study was conducted to determine the impact of fast food on obesity among the children in selected affluent school at Madurai. The research design of the study used was descriptive design. Totally there are 332 students were found in the age group of 13 to 15 years. Rating scale was used to find out the children those who are consuming fast food. Out of 332 students 170 students were having the habit of consuming fast food. Among 170 students, Body mass index was calculated by using Quetelet's index formula. The obesity level was classified. The gathered analyzed. Descriptive and inferential statistics (Frequency, Percentage, Chi-Square, co-efficient correlation) were used for analysis.

#### **MAJOR FINDINGS OF THE STUDY**

- ❖ Totally 51% were 13 years of age, 34% were 14 years of age, 15% were 15 years of age.
- ❖ In Gender 55% male children and 45% female children were participated in this study.
- ❖ Regarding Religion 78% were Hindus, 3 % were Muslims and 19% were Christians.
- ❖ In family type 68% were belonged to nuclear family, 30% were belonged to joint family and 2% were in extended family.

- ❖ Regarding parent Education 4% had primary Education, 16% had secondary Education 30% had Under Graduation. 50% had Post Graduation.
- ❖ In parent occupation 45% were in self employment, 20% were Govt. employees and 35% were professionals.
- ❖ Regarding family income 13% earns 5000 -10000 per month, 15% earns 10,001 – 15,000 per month, 72% earns above 15,001 per month.
- ❖ Out of 100 samples 17% of children has no siblings, 66% of children has only one sibling, 14% has two siblings, 3% of there 3 or more siblings.
- ❖ Among the total samples 50% children Play 1-2 hrs. Per day, 36% of children Play 2-3 hrs per day, 14% of children were play more then 3 hrs per day.
- ❖ In general 19% of samples consume fast foods around one year, 18% of samples consumes fast food around 2 years 63% consume fast foods around 2 years, 63% consume fast foods around. 3 or more years.
- ❖ With regard to fast food consumption level, 78% were low consumers and 22% were Moderate consumers. There was no high fast food consumers.
- ❖ On comparing with BMI, Among the 100 samples 16% were under weight, 63% has normal body mass index, 17% were in over weight, 4% were obese.
- ❖ There was a positive co-relation between the fast food consumption and level of obesity of children
- ❖ There was a significant association between the fast food consumption and age, parent occupation, family income. There was no significant association between the fast food consumption and Gender, Religion,

Type of family, Parent Education, Number of sibling, Hours of play and Number of years of fast food consumption.

- ❖ There was a significant association between the level of obesity and age, number of sibling, family income, number of years of fast food consumption. There was no significant between the level of obesity and gender religion, type of family, parent education, occupation and hours of play.

## **NURSING IMPLICATIONS**

The findings of this study have implications in various areas of Nursing such as Nursing practice, Nursing education, Nursing administration and Nursing research.

### **IMPLICATION FOR NURSING PRACTICE**

- ❖ Nurses can teach the parents effectively about the effects of fast food consumption.
- ❖ Nurses can prepare the teaching modules and learning materials for parents and children regarding the fast food consumption and how it leads to obesity.
- ❖ Nurses can conduct periodical screening programs to the school children through health camps
- ❖ Nurses can provide health tips regarding the daily dietary practices through food exhibitions in rural and urban settings
- ❖ Nurses can identify the obesity related problems in school children through health survey during school health programmes.
- ❖ Community Nurses can create awareness regarding balanced diet through child guidance clinics to the public.

### **IMPLICATION FOR NURSING EDUCATION**

- ❖ Nurse educators can encourage the student Nurses to organize food exhibitions on balanced and Nutritious diet to school children.

- ❖ Health and nutrition education should be imparted regularly based on evidenced based practice in all Nursing curriculum.
- ❖ Nurse educators can motivate the student Nurses to arrange Nutritional demonstration for parents regarding the methods of preparing healthy meals in attractive way.
- ❖ Nursing curriculum should prepare Nurses to motivate the teachers to impart the student's knowledge regarding the ill effects of faulty dietary practices.
- ❖ This is the right time to include the content of fast food and obesity in nursing curriculum.

### **IMPLICATION FOR NURSING ADMINISTRATION**

- ❖ Nurse administrator can organize seminars on healthy food practices and selection of nutritious diet to the student Nurses.
- ❖ Nurse administrator can motivate the Nurses to organize health camp and quiz programs to the school children at least twice in a year
- ❖ Nurse administrator motivate the school authority to organize health programs in order to identify the children and parents those who practice the balanced diet in their routine life can be appreciated and awarded.
- ❖ Nurse administrator can create awareness to school children regarding the problems of childhood obesity.
- ❖ Nurse administrator can utilize the research knowledge into practice. So that the school children and their parents can be benefited.
- ❖ Nurse administrator can encourage the nurses to conduct health awareness programs and regular health visits to the school children.

### **IMPLICATION FOR NURSING RESEARCH**

- ❖ Extensive research can be conducted to find out the health problems of fast food consumption.
- ❖ The study can be conducted to determine the impact of junk food on obesity.
- ❖ The study can be conducted to identify the other influencing factors of childhood obesity.
- ❖ Research can be focused on behavioural modification of children regarding fast food consumption.
- ❖ Research can be conducted to improve the quality of life among obese children.

## **RECOMMENDATIONS**

- ❖ A comparative study can be conducted among fast food consumers and non fast food consumers and their level of obesity.
- ❖ A similar study can be conducted regarding the psychological aspects of the obese children.
- ❖ A comparative study can be conducted among the rural & urban school children.
- ❖ A similar study can be conducted with different age group of children.
- ❖ A study to determine the parent's perception on childhood obesity among school children can be conducted.
- ❖ A similar study can be conducted by using large samples.
- ❖ A similar study can be conducted to assess the knowledge and practice among mothers of school children regarding the healthy diet.

## **CONCLUSION**

Parents need to be educated on the effects of fast food for family meals and how to choose healthier, convenient family meals. Effective weight management is easy with a healthy diet and regular exercise.

Facilities at the schools should be made available to promote and regular monitoring weights of school children.

Prevention of childhood obesity is not possible by individual. It can be achieved by involvement of the parents, teachers and health professionals. The Governmental policies should emphasis the administrators to take steps to ban the fast foods and health inspectors must regularly visits to the restaurants, fast food stalls to control the sales of fast foods.

The investigator suggested that the children must be taught to make simple yet nutrition's meals at home, so that they need not resort to eating out when their parents come home late. Parents must be role models for children and must eat healthy foods themselves. Sweets and other sugary stuffs should not be given as a reward to obese children and they should be encouraged to try a variety of food mostly fresh vegetables and fruits.