CHAPTER I

INTRODUCTION

“THE CHILDHOOD SHOWS THE MAN,
AS MORNING SHOWS THE DAY “

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1.1 Background of the Study

Every human being wishes to have healthy children who would grow to be healthy adults and enjoy a long life. It is clear that in many countries this aim may be unachievable for number of years because many specific adult health problems have their origins in childhood. One such health problem is “Childhood Obesity”

All mothers want to have chubby babies so, increasing prevalence of obesity has become a most common and serious nutritional disorder in children. Many mothers believe that childhood fat is puppy fat, which children will lose as they grow up. But children who are obese before age five seem to have greater risk of adult obesity.

Childhood obesity has become a worldwide phenomenon cutting across regional and economic barriers. It has emerged as an epidemic not only in the developed countries but also in the developing countries that are in rapid epidemiological transition, and India is no exception (Yadav, 2001). According to Bhave (2004), school based data in India demonstrates prevalence of obesity in the range of 5-6% to 24% among children and adolescents. Children learn a lot from school, environment and experience. Whether a child is a member of our family or not, it is our responsibility to help the child to grow in a healthy way.
Childhood obesity has emerged recently in India, unlike in west, where it existed for long. Obesity in children as young as two years onwards has been reported from the Indian population (Sharma 2002).

Since ages, weight gain in children and adults has been considered as a sign of personal health, family wealth and as an indicator of socio-economic prosperity among societies. According to Shetty (1999) in developing countries, being thin has been equated with poor health and at being high risk of developing illnesses. As developing societies become industrialized and urbanized with increasing standards of life style, weight gain and obesity have begun to pose a growing threat to the health of the citizens.

It is observed that 30% of obesity begins in childhood and out of that 50 % to 80 % become obese-adults (Styne DM., 2001). In the Harvard study, morbidity from cardiovascular disease, diabetes, obesity related cancers and arthritis were 50-100% higher in obese individuals who were also obese as children (MUST A., et al., 1992).

The increase in childhood obesity worldwide has gained much recent attention, from healthcare professionals, health policy experts, children’s advocates, and parents. There is much concern that today’s overweight and obese children, will turn into tomorrow’s overweight and obese adults, with all the health problems and health care costs associated with obesity.

With the increase in obesity prevalence there is a parallel increase in obesity associated chronic diseases and their clinical onset even at younger ages. The obesity has reached an epidemic proportion in urban Indian population. If we allow this epidemic to continue we will reach the world top record in diabetes and coronary heart diseases
earlier than estimated. The cost of treating diabetes mellitus and associated disorders alone will consume a major chunk of our national resources, which we can ill afford. Only community based approaches can address such a large number of affected children.

Childhood obesity is rapidly emerging as a global epidemic which will have profound public health consequences, as noted earlier, many overweight children will become overweight adults (Bellizzi & Dietz 1999)

Fifty years from now, if current trends persist, obesity will be up there with climate change and water shortage as one of the biggest problems facing India. There is something very real about obesity-linked diseases and their prevalence in India. We have the world's largest population of diabetics and this number - already at 37 million - is set to more than double in the next 25 years, according to the World Health Organisation (WHO).

A study by a Canada-based professor of medicine warns that by 2010 nearly 60 percent of the world's heart patients will be in India. School surveys have shown that 30 percent of adolescents in our cities are already overweight. As these adolescents reach adulthood they will add to the spiralling numbers of diabetics, heart patients and hypertension sufferers. Imagine the impact of this on the healthcare system. Given that we have just marked World Diabetes Day (Nov 14) and India's eighth Anti-Obesity Day will be held Nov 26th, 2011, it is a good time to pause and consider how and what we eat today is shaping our nation's tomorrow. As a rapidly developing country, India has a poor prognosis for its growing obesity problem.
Prakash Shetty, of the Food and Agriculture Organisation (FAO), says lifestyle and food habits change as an economy develops. There is a significant increase in the consumption of fats, sugars and energy-dense foods. The main drivers behind changing lifestyle and food habits are rising incomes, urbanisation and globalisation.

Being obese or overweight is determined by a percentile measurement of Body Mass Index (BMI), which uses height and weight to determine if a person is normal, underweight, overweight or obese. The BMI is an indirect estimate of body fat that is valid for most individuals. Since children grow in height as well as weight, the standards for children need to be matched for age and sex. A BMI of 95th percentile places the child in obese category and at the 85th percentile, is considered as overweight.

A child who’s weight at 95th percentile is advised to have an in-depth medical assessment since this amount of body fat is also associated with high blood pressure, elevated levels of lipids (fats) in the blood and an increased potential for obesity-related diseases that include type-2 diabetes, asthma, hypertension, high cholesterol, liver and gall bladder disease, bone and joint problems, and sleep apnea. It is also linked to a range of social and psychological issues including poor self-esteem, depression, withdrawal and poor peer relationships.

But as complex as the causes of childhood obesity are, the baseline equation is simple: Too few calories are being burned for the amount of calories being consumed. What's complicated is that this calculation is mediated by a host of behavioral, environmental and genetic factors.
Heredity

Heredity contributes a risk factor of 5 to 40 percent for obesity, and studies indicate that 50 to 70 percent of a person's BMI is determined by genetic influences (Epstein, 1998). If both parents are overweight, the children have a 75 percent chance of being obese. If one parent is obese, the probability is 25 to 50 percent. But while the connection between genetics and obesity has been established, the problem is usually caused by multiple genes interacting with environmental and behavioral factors. Given that the genetic characteristics of a population change slowly, the rapid weight increases in America show that skyrocketing obesity rates are probably due to behavioral and environmental factors combining with genetic factors, rather than genetic predisposition alone. The upside is that making some basic changes in lifestyle and nutrition can make a big difference.

TV Time

One of the biggest culprits is a sedentary lifestyle dominated by TV watching, computer activities and video games. It's estimated that American kids are spending 25 percent of their day watching television, and that those who log the most TV hours have the highest rate of obesity. First, because they're not burning enough calories, and second because they're usually eating unhealthy snacks while they're watching. What they're watching is also a factor. A March 2007 study (Gronback.H) found that kids age 2 to 7 see an average of 12 food advertisements every day, while kids of age 8 to 12 see 21 advertisements, and teens view up to 17 food advertisements daily. A 2006 study showed that for each additional hour of television viewing, kids consumed 167 extra calories. So
it's obvious that limiting TV time is one of the best health care decisions parents can make for their family.

**Nutrition**

A healthy focus on nutrition can't be underestimated. Hectic schedules, both for kids and parents, have resulted in a decline in breakfasts and an increase in dinners outside the home. Use of fast food restaurants with their high calorie, high salt and high fat and carbohydrate entrees, along with their super-sized, sugary soft drinks, is a big contributor to our current obesity epidemic, especially among the lower and middle socioeconomic groups.

Over the last decades, food has become more affordable to larger numbers of people as the price of food has decreased substantially relative to income and the concept of 'food' has changed from a means of nourishment to a marker of lifestyle and a source of pleasure.

Supervising mealtimes will help to control what the kids eat and create an opportunity to offer encouragement. It's also important to cut down on the snacking, as well as on processed, pre-prepared food. Making healthy foods easily accessible is key, so have fresh fruit washed and ready to eat in a big bowl where everyone can reach it. (Goran, M.I, 2001). Same with washed and cut vegetables and low-calorie dip. What parents eat is important, too, because kids develop preferences based on foods their parents eat.
Sleep

Shortened duration of sleep is associated with weight gain and obesity. So making sure to avoid sleep deprivation is an important step in combating overweight and obesity in children (Jeffery et al., 2005).

At Home

Parents should be a role model, not a nag. They should set themselves as a model in eating healthy and doing lots of exercise. The family will follow the lead. Should introduce healthy changes gradually. Go from serving whole milk to two percent, and then to skim milk. Keep portion sizes moderate, eat from smaller plates and skip seconds. Instead of frying, better to grill, steam or bake. And try to establish a regular eating schedule for the whole family.

Wojcicki JM, Heyman MB, (2010) expressed that there is broad consensus that pediatric obesity can be prevented by correction of dietary and lifestyle habits and increased physical activity, which should begin from pregnancy and infancy onward. However, no comprehensive strategy to encourage family members, in particular children, exists. There is no simple solution, and he has proposed that a country’s programs must focus on primary prevention with structured programs for lifestyle modifications. Parents must take responsibility for their children’s health by modifying their own lifestyle and ensuring healthy lifestyles for their children, encouraging more physical activity and less television and computer viewing.
1.2 Need for the Study

Parents are the keys to develop a home environment that foster healthy eating and physical activity among children and adolescents. Parents have responsibility to shape their children’s dietary practices, physical activity, sedentary behaviors and ultimately their weight status in many ways. Parent’s knowledge over nutrition, their influence on food selection, meal structure, and home eating patterns; their modeling of healthful eating practices; their levels of physical activity; and their modeling of sedentary habits including television viewing are all influential in their children’s development of lifelong habits that contribute for normal weight to overweight and obesity.

So parents’ role at home in promoting healthful eating practices and levels of physical activity are so critical in preventing obesity. They should also take central to collective efforts to combat the nation’s childhood obesity epidemic.

As researchers continue to analyse the role of parenting both in the development of childhood over weight and in obesity prevention, studies on child nutrition and growth are detailing the ways in which parents affect their children’s development of food and activity related behaviours. Ann Lindsay, Katerina Sussner, Juhee Kim and Steven Gostmaker (1999) argue that interventions aimed at preventing childhood obesity should involve parents as an important forces for change in their children’s behavior.

As a consequence of the rising incidence of obesity, and concern about the long-term implications for population health and the impact of the obesity epidemic on healthcare systems, there has been an increased focus internationally on the prevention of obesity. While childhood obesity has received a great deal of attention from health
authorities and within the mass media, less is known about parents’ concerns and beliefs about this important issue. However, parents are likely to play a key role either directly by providing support for physical activity and healthy eating, or by more indirect means such as modeling of activity or eating behaviours. It is therefore important to have an understanding of parental concerns about childhood obesity and their views as to how to prevent it.

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. In another US study, only one in 10 parents of overweight 4–8-year-olds recognised their child to be overweight. In research on parents in the UK, only one in four parents of 7-year-olds recognized overweight in their child, while only 2% of parents of overweight 3–5-year-olds and 17% of parents of obese 3-5-year-olds saw their child as overweight.

Similarly a recent Australian study of primary-school children found that 40% of parents of obese children, and 80% of parents of overweight children, were unconcerned about their child’s weight. Only 12% of all parents in that study expressed concern about their child’s weight, even though almost twice as many were classified as overweight or obese, and parental concerns did not vary according to parental body mass index (BMI), parental education or the child’s gender.

Eating dinner together as a family has been associated with healthy weight and consumption of healthy foods. Gillman et al., (2001) found that intake patterns among children and older adolescents when eating dinner with their parents resulted in
consumption of more fruits and vegetables, less fried food and soda, and less saturated and *trans* fat; lower glycemic loads; and more fiber and more micronutrients from food. Aside from the social context of the family, health similarities among family members make the family a good candidate for being the “unit” of health promotion intervention. In addition to the influence of genetic factors, fitness and health can be linked to the familial environment. Studies of eating habits, exercise routines, food and activity preferences, blood pressure levels, body weight, body composition and adiposity, and physical activity have found that parents tend to share these characteristics.

Although it has been argued that, for successful child obesity treatment, the primary agent of change should be the parent, it is clear that the family environment plays a critical role in both the development and reduction of obesity. Parental influence is a critical determinant of children’s food preferences. Though the data are limited, research does suggest that some food preferences developed in early childhood persist into adulthood. Evidence indicates that direct involvement of at least one parent improves a child’s weight management. Parental support has been reported as a determinant of children’s involvement in physical activity. In addition, parental involvement has been identified as an important determinant influencing young girls to be physically active.

Parental feeding practices and family mealtime behaviors have been linked to overweight in children. Birch and Fisher (2000) found in an assessment of parent-to-child weight status that heavy mothers tend to have heavy daughters and that daughters’ weight status was affected by mothers’ feeding practices. Mothers often exert influence over their daughters’ dietary intake, which has been shown to negatively impact self-control over energy intake. Birch and Fisher also reported that among preschool children, efforts
by mothers to use control and restrictive feeding practices produced the unintended consequence of poor self-control over food intake. Parent food purchasing and mealtime behaviors have also been correlated with poor dietary intake.

Golan and colleagues (2001) argue that to effectively combat child obesity, it is essential to create a family or home environment that promotes healthy family habits. Part of that environment involves the establishment of effective parenting behavior, which includes parents being informed about both appropriate nutrition and eating habits and adopting a physically active lifestyle that includes regular exercise. Epstein (1998) reported that, in treating obese children, involving at least one parent as an active participant in the weight loss process improves short- and long-term weight regulation of children. He concluded that improved outcomes occur because factors in the shared family environment are targeted for change. In a 7-year follow-up, Golan and Crow (2004) reported a significant mean reduction in percentage of overweight among members of the parent-focused group compared with members of the child-focused group. Robinson (1999) notes that one of the keys to successful treatment of childhood obesity is improved parenting behavior relating to goal setting, reward immediacy, use of praise, appropriate modeling, and limit setting.

Lindsay et al (2006) write, parents play a critical role at home preventing childhood obesity, with their role changing at different stages of their child’s development. By better understanding their own role in influencing their child’s dietary practices, physical activity, sedentary behaviors, and ultimately weight status, parents can learn how to create a healthful nutrition environment in their home, provide opportunities for physical activity, discourage sedentary behaviors such as TV viewing, and serve as
role models themselves. Obesity-related intervention programs can use parental involvement as one key to success in developing an environment that fosters healthy eating and physical activity among children and adolescents.

Because parents are often key to the development of a home environment that fosters healthful eating and participation in physical activity, their role is likely critical to most solutions to combating obesity. They reinforce and support healthy eating and exercise behaviors and may be best able to provide the necessary rewards to effect and maintain positive behavior change.

A recent global survey by Light Speed Research revealed that nearly 3 out of every 4 respondents blamed parents for the rise in obesity in children, while advertisers and food manufacturers were blamed by 13% of respondents. The government, schools, and restaurants were felt to be the least to be blamed, each receiving only 1% of the votes.

The poll, which ran in 8 countries around the world, asked respondents to identify who they felt was most responsible for the rise in obesity in kids. In the total, 71% of the 99,109 respondents felt that parents were the most to be blamed, with the highest level of blame shown in Sweden (81%), Great Britain (78%) and Australia (75%). On the contrary Italy blamed parents the least (57%). However, almost a quarter of respondents in Italy blamed advertisers (24%) for the rise in child obesity. Interestingly, the global perception of blame was very low on schools (1%) and the government (1%).
The following question was asked to the respondents of the survey i.e., whom do you think is most responsible for child obesity? ("Child" is defined as those under the age of 17).

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<td>Food Manufacturers</td>
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The Poll was conducted in Great Britain, France, Germany, Italy, Netherlands, Spain, Sweden and Australia among 99,109 respondents in June 2006.

Children spend much of their time in two places, home and school; which makes their two most influential groups of people, parents and teachers. Parents’ beliefs about the nutritional needs of their children foster a significant difference in the child’s weight. Parents model either active or inactive lifestyles. They determine what food is brought into the home and decide how often the family will dine outside of the home and where that meal will be eaten.
Although a great deal of research has been done on how parents shape their children’s eating and physical activity habits, surprisingly only few high quality data exist on the effectiveness of obesity prevention programmes for children that focus on parental involvement in the western countries itself. The researcher could not find any studies related to parental role in prevention of childhood obesity from India.

The 2002 World Health Report lists overweight as the fifth most serious risk factor for both developed and developing countries. According to the report of International Obesity Task Force (IOTF, 2000), about 10% of the young people aged between 5-17 years were globally overweight; among whom 2-3% were obese. In a recent review from developed countries, prevalence of overweight youth (10-16 years) was >15% in North America (Canada, USA), Great Britain and some south western European countries. Data from developing countries is limited especially for older children (>5 years old) and adolescents. Similarly in Egypt 14% of adolescents and 25% of 6-11 year old children in Cyprus were reported to be overweight or obese. According to a report from urban South India, 21.4% of boys and 18.5% of girls aged between 13-18 years were overweight or obese. Childhood obesity is a problem because it is an important predictor of adult obesity. About one third of obese preschool children become obese adults, and one-half of obese school-age children become obese adults.

The researcher had noticed from her experience that children with more passive behaviors such as TV viewing, addiction to computer games and talking on the phone incessantly are more prone for obesity. Eating habits such as consuming more fatty or sugary foods are also factors causing obesity among children. Life style changes again reflect parent’s anxieties regarding their children’s future which results in children being
ferried to and fro to school in cars and being discouraged from active outdoor play after coming from the school because of the fear of injuries. They are again encouraged by parents to sit and study for some more coaching classes after school hours. All these factors contribute again to reduce physical activity levels while dietary intake is not restricted in a growing child.

Health teaching about problems arising out of obesity needs to be given routinely in well baby clinics. School health education programme, in obstetric outpatient clinics, and also when the child gets discharged from the hospital, parents are need to be educated about what is healthy in terms of weight and regarding the concept of nutritive balanced food intake for their children from as early as newborn period itself. Parents have a very important role in maintaining their children’s lifelong dietary and exercise patterns.

Most health behaviors are initiated in childhood, influencing the health behavior of individuals when they are children is reasonable and practical. It is well recognized that eating habits developed in childhood and adolescence may be difficult to change. Consequently, effecting behavior change when individuals are children is critical. The parents shapes children’s dietary intake and eating habits and their physical activity patterns. Parental influences also are present in the development and control of weight problems in children and adults.

Parents are a highly suitable target for health promotion intervention because it provides many options and opportunities to communicate positive health behavior messages and change family member attitudes and behavior. Within the family context, meal planning, food shopping, meal preparation, eating, snacking, family recreation, and
sedentary behaviors are all opportunities for intervention. The family provides the primary social learning environment for children and the primary setting for exposure to food choices, eating habits, and involvement in opportunities for play and other physical activity. Parental health behavior guides the development of health practices in children, and children can influence these same behaviors of their parents and siblings.

Parents need to learn how to talk with their children about exercising and eating well and how to encourage them to be more active. Many parents refuse to acknowledge that their children are obese. Some parents believe that actions that could help their children lose weight are ill-advised, so they refuse to support their engaging in strenuous activity or reducing their food consumption. In other cases cultural or familial factors affect parents’ assessment of their children’s weight and body image. As noted earlier, eating behaviors and physical activity habits must change, and if parents or children do not support such changes then weight of those at risk or already obese will likely not be well controlled (Eckstein KC, et al, 2006).

As a consequence of the rising incidence of obesity, and concern about the long-term implications for population health and the impact of the obesity epidemic on healthcare systems there has been an increased focus internationally on the prevention of obesity. While childhood obesity has received a great deal of attention from health authorities and within the mass media, less is known about parents’ concerns and beliefs about this important issue (Hardus PM, van Vuuren CL, Crawford D, Worsley A. Public, 2003). However, parents are likely to play a key role either directly by providing support for physical activity and healthy eating, or by more indirect means such as modelling of activity or eating behaviours (Davison KK, Birch LL, 2001). It is therefore
important to have an understanding of parental concerns about childhood obesity and their views as to how to prevent it.

Obesity and its health consequences are expected to increase proportionately in developing countries like India, particularly in the industrialized and urbanized areas. Overweight and obesity in children can no longer be considered as reflecting the economic development and the accessibility and availability of food in developing countries. Therefore, childhood obesity is fast becoming a public health problem and we have to deal with it seriously in the new millennium. There is an urgent need to address the problem and the time to act is now. As the old dictum goes, “Prevention is better than cure” (Shetty, 1999).

Childhood obesity is today a global health problem. (Wang & Lobstein, 2006; James, 2008). Concerted efforts by providers, parents and the children themselves are needed to control and prevent the problem from escalating. So, the researcher felt the need to conduct this study to increase awareness among parents about childhood obesity as an increasing problem being faced currently.

1.3 Statement of the Problem

“A study to assess the effectiveness of Information, Education and Communication on knowledge, attitude and compliance of childhood obesity among parents of obese children” in selected home settings at South West Chennai.

1.4 Objectives of the Study

1.4.1. Assess the knowledge among parents of obese children on childhood obesity before and after administration of IEC
1.4.2. Assess the attitude among parents of obese children on childhood obesity before and after administration of IEC

1.4.3. Assess the compliance among parents of obese children on childhood obesity before and after administration of IEC

1.4.4. Effectiveness of IEC on knowledge, attitude and compliance on childhood obesity among parents of obese children

1.4.5. Correlate between knowledge, attitude and compliance on childhood obesity among parents of obese children.

1.4.6. Associate between socio-demographic variables of parents whose children are obese and their knowledge, attitude and compliance on childhood obesity before and after IEC

1.5. **Operational Definitions**

1.5.1. **Effectiveness**

   It is a change that is brought out by the IEC interventions on childhood obesity.

1.5.2. **Information, Education and Communication (IEC)**

   IEC is a public health approach aiming at changing or reinforcing health-related behaviours. In this study the IEC interventions includes components like knowledge on childhood obesity, predisposing factors, causes, problems, complications, measures to control obesity and importance of follow-up. So, in this study IEC is aiming at changing or reinforcing health related behaviours on childhood obesity.

   IEC materials used are, a combination of interpersonal communication, Booklet and Educational PowerPoint Presentation (PPT) (One to one basis) on childhood obesity.
1.5.3. Childhood Obesity

Refers to boys and girls between the ages of 5 to 17 years and the BMI of the child is more than 95th percentile for his / her expected BMI for the age.

1.5.4. Parent

Mother of an obese child.

1.5.5. Knowledge

Range of information and level of understanding on childhood obesity as measured by a questionnaire on knowledge.

1.5.6. Attitude

Expressed feelings and beliefs of mothers towards childhood obesity as measured by an attitude scale.

1.5.7. Compliance

The extent to which the mothers adhere to the prescribed instructions given to reduce the weight of their children as measured by a questionnaire on compliance.

1.6 Hypotheses

H1: There is a significant difference in the level of knowledge, attitude and compliance regarding childhood obesity among parents of obese children who had IEC interventions than the parents who do not.
H2: There is a significant association between knowledge and attitude who receives the IEC and who do not.

H3: There is a significant association between knowledge and compliance who receives the IEC and who do not.

H4: There is a significant association between attitude and compliance who receives the IEC and who do not.

H5: There is a significant association of childhood obesity with selected demographic variables.

1.7 Assumptions

1. High calorie high fat diet intake can be a reason for childhood obesity.

2. More than 60% of the obese children come from families of high economic status.

3. Working mothers find readymade foods easy and convenient rather than cooking at home.