



CODEN [USA]: IAJ PBB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

<http://doi.org/10.5281/zenodo.2630762>

Available online at: <http://www.iajps.com>

Research Article

KAP STUDY OF CHIDHOOD OBESITY: MOTHERS' PERSPECTIVE

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Article Received: February 2019

Accepted: March 2019

Published: April 2019

Abstract:

Introduction: BMI between 18.50kg/m² and 24.99kg/m² indicates normal weight An adult having a Body Mass Index of 30kg/m² or higher is considered obese whereas an adult who has a BMI between 25kg/m² and 29.9kg/m² is considered overweight. ^[2] A person is usually overweight due to fat deposition but may also be due to other causes for example fluid retention. Obesity is further classified as: Class I obesity: BMI ranging from 30kg/m² to 34.9kg/m²; Class II obesity: BMI ranging from 35-39.99kg/m²; class III obesity: BMI equal to or greater than 40kg/m².^[3] It is an outcome of lifestyle factors over a period of time and not a sudden occurrence. It has been on rise for years bringing with it many negative physical and emotional consequences for families.

Objectives: To determine the knowledge of mothers about childhood obesity and to determine the role of mother's attitude and practices in causing childhood obesity.

Materials and Methods: Cross-sectional study (non-interventional).

Setting: Community of Lahore City.

duration: 3 months after approval of synopsis.

Sample Size: A total of 100 cases will be taken in this study.

Sampling Technique: Simple random technique.

Results: A total number of 100 mothers having children up to 14 years were interviewed for this study. Minimum age of children was 3 and maximum was 14. 40% children had normal BMI whereas 60% had BMI higher than 25 and fell in the categories of overweight and obese. In terms of education 71% were educated while 29% were uneducated. Among all the mothers interviewed 38% were working mothers. 21% belonged to families of low socioeconomic status, 43% belonged to mediocre socioeconomic background, 29% to well off families and 7% belonged to high socioeconomic status. 55% of the mothers were ignorant about childhood obesity and its associated hazards and 48% refused to acknowledge their child as overweight or obese.

Conclusion: After a meticulous analysis of the results of our study it is concluded that more awareness is needed among mothers, even educated ones, regarding childhood obesity and its adverse effects on health in the long run. Most of the mothers refused to acknowledge their child as overweight or obese and did not regard childhood obesity as a serious health hazard. Maternal practices such as buying unhealthy food, allowing children to skip breakfast, stay up late at night, watch T.V for hours and not encouraging them enough to engage themselves in physical activities are at the heart of the problem of childhood obesity.

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Please cite this article in press Rana Muhammad Arslan Anwar et al., *KAP Study Of Chidhood Obesity: Mothers' Perspective.*, Indo Am. J. P. Sci, 2019; 06(04).

INTRODUCTION:

Obesity is defined as excess body fat or adipose tissue; it is this, not weight which is associated with co morbid conditions. Females having 30% fat and males having 20-25% fat are considered obese.[1] Obesity is expressed in terms of Body Mass Index. BMI between 18.50kg/m² and 24.99kg/m² indicates normal weight An adult having a Body Mass Index of 30kg/m² or higher is considered obese whereas an adult who has a BMI between 25kg/m² and 29.9kg/m² is considered overweight.[2] A person is usually overweight due to fat deposition but may also be due to other causes for example fluid retention. Obesity is further classified as: Class I obesity: BMI ranging from 30kg/m² to 34.9kg/m²; Class II obesity: BMI ranging from 35-39.99kg/m²; class III obesity: BMI equal to or greater than 40kg/m². [3] It is an outcome of lifestyle factors over a period of time and not a sudden occurrence. It has been on rise for years bringing with it many negative physical and emotional consequences for families. Childhood obesity has been growing at alarming rates and is the most common nutritional problem in developed as well as developing countries like Pakistan.

Previous studies have shown that parenting style is a contributing factor to obesity. For instance, Arredondo et al (2006) found that in **California (America)** parents' use of appropriate disciplinary styles was positively related to children's healthy eating and therefore decreased chance of obesity in them. Mothers who had authoritative parenting styles were 4 times less likely to have an overweight child (Rhee et al, 2006). More mothers are working outside the home which means less supervision in what children eat and more eating out. (Crister, 2003)[5] **Australian** participants attributed their child's obesity to factors such as slow metabolism, sedentary lifestyle, familial or cultural factors, genetics, eating habits such as not drinking enough water, or not chewing food adequately.[6] In a large multiethnic sample of mothers of 4-year-olds living in **Sweden**, we found that parental food controlling practices were influenced by the child's weight status, reported and perceived, as well as directly by the parents' education and foreign origin.[7] According to a research in **Sheffield (U.K)** restriction of children's eating has most frequently and consistently been associated with child weight gain. Parents may inadvertently promote excess weight gain in childhood by using inappropriate child feeding behaviors. [8] The most important goal of family based interventions deduced by a study in **Hertfordshire (U.K)** is to improve children's eating behaviors. For one reason or the other parent's increased knowledge is translated into child's

behavioral response because children learn behaviors from the individuals who control the majority of the rewards and punishments. [9] Another study in **Tehran** reveals that less well-educated mothers are expected to have more overweight children than high-educated mothers. Consumption of greater amounts of soft drinks in children of less educated mothers is related to childhood obesity. [10] Another study in **America** undertook the relation between mothers' child feeding practices and children's adiposity. Two subscales of child feeding questionnaires, pressure to eat and concern for child's weight, explained 15% of the variance in total fat mass in both African American and white boys and girls (P<0.001) after correction for total lean mass and energy intake (which explained 5% of the variance in total fat mass).[11] a thesis on childhood obesity prevention in **China**, using qualitative and cross-sectional studies, highlights the importance of environmental factors (especially family environment) in shaping the behavior of children and key adults that associate with them, in relation to promoting childhood obesity.[12] A research published in **International Journal of Obesity (2005)** concluded that only 1.9% of parents of overweight children and 17.1% of parents of obese children described their child as overweight. The odds of parents perceiving their child as overweight were increased for overweight and obese children compared with normal weight children. These findings suggest that parents of 3-5 years old show poor awareness of their child's current weight status.[13] An article on Parent's perception of overweight in 3-5 years old, published in **Pediatrics Journal (2006, Vol # 117)**, explored parents' perception about their child's health. Among parents of overweight and at risk of overweight children only 26% were worried about their child's weight and 70% of the parents selected a middle or heavier sketch for their children.[14]

Previous systemic reviews regarding childhood obesity prevention have predominantly focused on school age children and have involved quantitative studies, in particular, randomized controlled trials (RCTs) of intervention (17-20 years). In view of increasing concerns about childhood obesity presenting in younger children (15-16 years), it is considered timely to focus on the views of parents about health promoting behaviors for the children since birth. Also most of the research in this regard has been done in European countries with no significant knowledge about this in Pakistan and other South Asian countries which are equally affected by this menace.

Our research will clarify the associations between parenting practices and children's weight status as well as perception of childhood obesity by mothers. This study will be helpful in forming effective liaisons between health professionals and parents, drawing attention towards this arising problem of childhood obesity that leads to children morbidity and mortality. It can act as a guide for mothers to control their child's weight by taking effective lifestyle interventions.

OBJECTIVES:

- To determine the knowledge of mothers about childhood obesity.
- To determine the role of mother's attitude and practices in causing childhood obesity.

MATERIALS AND METHODS:

STUDY DESIGN: Cross-sectional study (non-interventional)

SETTING: Community of Lahore City

DURATION: 3 months after approval of synopsis.

SAMPLE SIZE: A total of 100 cases will be taken in this study.

SAMPLING TECHNIQUE:

Simple random technique.

SAMPLE SELECTION CRITERIA

INCLUSION CRITERIA:

1. Mothers having children aged between 3-14 years.
2. House wives as well as working mothers will be included.
3. Mothers belonging to high, middle or low socioeconomic status will be included.
4. Mothers having at least one obese child will be included in the study.

EXCLUSION CRITERIA:

1. Mothers having obese children less than 3 years.
2. Mothers of children of age greater than fourteen years.
3. Mothers who are doctors by profession will not be included.

DATA COLLECTION PROCEDURES:

Data will be collected by all team members by pre-tested questionnaire.

DATA ANALYSIS:

Data will be analyzed on SPSS version 20.

OUTCOME UTILIZATION:

This study will help us to establish relation between mothers' knowledge, attitudes and practices and childhood obesity.

Proposed Analysis

PHASE	WORK	DURATION
First	Synopsis	Initial
Second	data collection	2 months
Third	Data entry in SPSS and Analysis	1 month
Fourth	Result Deduction	2 weeks

RESULTS:

A total number of 100 mothers having children up to 14 years were interviewed for this study. Minimum age of children was 3 and maximum was 14. 40% children had normal BMI whereas 60% had BMI higher than 25 and fell in the categories of overweight and obese. In terms of education 71% were educated while 29% were uneducated. Among all the mothers interviewed 38% were working mothers. 21% belonged to families of low

socioeconomic status, 43% belonged to mediocre socioeconomic background, 29% to well off families and 7% belonged to high socioeconomic status. 55% of the mothers were ignorant about childhood obesity and its associated hazards and 48% refused to acknowledge their child as overweight or obese. Results of all the variables assessed in this study including the socio-demographic parameters are as following.

Socio-demographic parameters:

VARIABLES	FREQUENCIES	PERCENTAGE
Age of subject (in years)		
3-5	20	20
6-9	35	35
10-14	45	45
Weight of subject (in pounds)		
30-60	24	24
61-90	46	46
91-120	36	36
Height of subject (in inches)		
30-50	43	43
51-60	37	37
61-70	20	20
BMI (in kg/m ²)		
18.5-24.99	40	40
25-29.99	57	57
30 and above	03	03
Education of mother		
Educated	71	71
Uneducated	29	29
Knowledge of childhood obesity and risks involved due to it		
Yes	45	45
No	55	55
Reading of any articles/research regarding childhood obesity		
Yes	24	24
No	76	76
Delayed developmental milestones of child		
Yes	13	13
No	87	87
Consideration of child as obese		
Yes	52	52
No	48	48
Concerned about child being overweight		
Yes	48	48
No	52	52
Monitoring of child's weight and height on regular basis		
Yes	31	31
No	69	69
Usage of formula milk instead of breastfeeding		
Yes	40	40
No	60	60
Weight of mother during childhood		
Underweight	14	14
Normal	69	69
Overweight	14	14
Obese	03	03
Weight of mother during adolescence		
Underweight	07	07
Normal	73	73
Overweight	15	15
Obese	05	05

Weight of mother during 20s		
Underweight	00	00
Normal	62	62
Overweight	32	36
Obese	06	06
Weight of mother at present		
Underweight	02	02
Normal	38	38
Overweight	38	38
Obese	22	22
Consideration of mother of herself as obese		
Yes	49	49
No	51	51
Any measures taken by mother regarding her weight		
Yes	39	39
No	61	61
Grocery stores near house where child can go alone		
Yes	67	67
No	33	33
Awareness regarding harmful effects of bakery products		
Yes	65	65
No	35	35
Child's preference of junk food over home cooked food		
Yes	68	68
No	32	32
Allowing child to eat junk food		
Yes	60	60
No	40	40
Eating of breakfast daily and in adequate amount by child		
Yes	56	56
No	44	44
Giving lunch to child for school on regular basis		
Yes	64	64
No	36	36
Giving vegetables and pulses to child for dinner usually		
Yes	63	63
No	37	37
Fatty meal for dinner usually		
Yes	56	56
No	44	44
Buying of junk food for child		
Never	18	18
Seldom	41	41
Often	24	24
Frequently	17	17
Bouts of eating by child		
Yes	47	47
No	53	53
Awareness of importance of physical activity		
Yes	79	79
No	21	21

Child's interest in playing sports		
Yes	58	58
No	42	42
Encouraging child to participate in sports		
Yes	76	76
No	24	24
Duration of watching tv/playing video games by child		
1-2 hrs	26	26
2-4 hrs	28	28
4-6 hrs	31	31
8-10 hrs	15	15
Frequency of going outdoors to play		
Never	25	25
Twice a week	34	34
Four times a week	15	15
Everyday	26	26
Awareness of adverse effects of sleep deprivation		
Yes	58	58
No	42	42
Fixed bedtime of child every night		
Yes	60	60
No	40	40
Allowing child to stay up late at night		
Yes	38	38
No	62	62
Hours of sleep of child		
4-6 hrs	08	08
6-8 hrs	44	44
8-10 hrs	43	43
10-12 hrs	05	05
Taking of nap by child during day		
Yes	39	43.3
No	51	56.7
Sleeping immediately after dinner		
Yes	53	53
No	47	47
Awareness of diseases causing childhood obesity		
Yes	22	22
No	78	78
Noticing anything different in child's physical or mental health		
Yes	28	28
No	72	72
Presence of any of the following symptoms in child Puffy face, body swelling, pallor, shortness of breath o exertion, Frothy urine, white lines on nails		
Yes	17	17
No	83	83
Presence of any of the following symptoms in child Obesity of early onset and massive appetite		
Yes	21	21
No	79	79

Presence of any of the following symptoms in child Sleep a lot, feel lazy, have constipation and delayed development of permanent teeth Yes No	23 77	23 77
Giving of following drugs to child at any time Steroids, antidepressants, diabetic drugs, anti-epileptics Yes No	04 96	04 96
Presence of any of the following symptoms Unusually fair skin, feeding problems, mental retardation, small stature, small hands and feet Yes No	04 96	04 96
Child's thorough examination by skilled medical professional Yes No	29 71	29 71
Working lady Yes No	38 62	38 62
Hiring of nanny for child Yes No	15 85	15 85
Financial status Poor Average Well off Rich	21 43 29 07	21 43 29 07
Atmosphere of house Pleasant Stressed	72 28	72 28

DISCUSSION:

This study assesses the knowledge, attitude and practice of mothers regarding childhood obesity. In our research, as per the mothers themselves at present 2% were underweight, 38% normal, 38% overweight and 22% obese thus linking mother's weight status to that of child (overweight or obese mothers tend to have obese children). These results are partially supported by the study conducted in Sweden in which 2.2% of the mothers were underweight, 59% normal 21.5% overweight and 6.7% obese. Almost one third of the mothers were overweight or obese. This correlation between mother and child weight might be due to a genetic predisposition to being overweight or these children are not raised to understand and appreciate the advantage of healthy nutrition and physical activity, or they feel that there is nothing wrong with being obese since they love and respect their children.

Our research revealed that only 45% of the mothers had knowledge of childhood obesity, only 28% of

them had read articles regarding childhood obesity and 48% of them acknowledged that their child had a weight problem whereas another research conducted by University of California on Latina mothers revealed that almost all i.e. 100%, had knowledge about childhood obesity and the risks involved e.g increased risk of Type II Diabetes however only 21.8% mothers regarded their child as obese.

Giving formula milk instead of breastfeeding the child after birth is also a major cause of childhood obesity linked to faulty maternal practices. In our study 40% of the mothers used bottled milk. This is supported by research done by Gillman published in The Journal of Pediatrics which reveals that breastfeeding is related to decreased risk of obesity later in life. The odds ratio ranged from 0.75 to 0.84. Children who had been breastfed for at least 7 months were less likely to be overweight than those who had been breastfed for 3 months or less. Researchers believe that breastfed children learn to regulate their energy intake whereas parents using

formula milk make their child drink the whole bottle even when his appetite has been satiated.

In our research 68% of the children preferred junk to home cooked food and 60% of the mothers bought junk for their child. This is consistent with the results obtained from the research conducted in Mumbai by Avinash De Souza. Children belonging to the obese group went out to eat more frequently (Mean (SD): 9.71 (3.14)) than normal (3.7 (1.3) children and consumed more soft drinks per week (9.36 (5.49)) as compared to non-obese children (5.72 (2.33)). Mothers who do not regularly give adequate breakfast to their children contribute to their child's obesity. Our study revealed that 44% of the children did not consume breakfast on a daily basis. This is supported by a research conducted in Saudi Arabia, Al Hazzaa et al documented that between 15-49% of adolescents skip breakfast.

In our research, 25% of the children never went out to play, 49% went two to four times a week and 26% went daily whereas in the research regarding parents' perception of their child's weight and height conducted in Children's Hospital Chicago revealed that 38% played every day, 49% went 3-5 times a week which supports our data and 13% went 0-2 times a week.

The same study as mentioned above also reveals that duration of watching TV also plays a significant role in childhood obesity with the obese children watching TV for 4.5 hours(mean) and normal children for 2.6 hours. Our study supports this as our results show that 31% of obese children watched 4-6 hours of TV/play video games and 15% watching 8-10 hour of TV.

In a study conducted in Mumbai regarding maternal, child and family factors in childhood obesity, obese children were found to sleep less (Mean 6.66 hours, SD 1.3) than normal children which co relates with our study in which 44% of the children sleep 6-8 hours.

According to an article Childhood Obesity, Prevalence and Prevention published in Nutrition Journal in September 2005 by Merchant, Dehghan and Akhtar-Danesh in only a small number of cases childhood obesity is due to genes such as leptin deficiency or medical causes such as hypothyroidism and growth hormone deficiency or side effects due to drugs (e.g steroids) as supported by our results which reveal that only 4% of the children suffer from growth hormone deficiency and 4% are obese as a side effect of certain drugs.

In our study 71% of the mothers were educated (at least matric pass) and 38% of them were working women (school teachers, nurses etc) whereas in a Study conducted on 4 year olds in Sweden almost 90% mothers were educated but similar to ours one-third (33.33%) were working women thus supporting our results that educated women are in ignorance regarding the severity of childhood obesity and that working women have higher proportion of obese children as they keep less check on their child's diet.

Atmosphere at home also plays a role in causing childhood obesity. In order to relieve stress food intake of children increases. In our study 28% of the mothers admitted that the environment in their house was stressful. This is supported by a study conducted by University of Illinois and Iowa state University linking psychosocial stressors to childhood obesity. Another study conducted in Mumbai reveals mothers of obese children have a high score on the DASS (Depression Anxiety Stress Scale).

In our study 21% of the mothers were of a low socio economic status, 43% came under average, 29% well off and only 7% rich thus indicating that low socioeconomic status contributes to obesity. This is supported by the study on Latina mothers which provided insight into this matter. Low income families tend to not buy healthy foods (fruits, vegetables, dairy products, fish) because of higher prices. Blisard et al (2004) found that about 19% of all low-income families did not buy any fruits and vegetables on any given week compared to 10% of higher income households.

CONCLUSION:

After a meticulous analysis of the results of our study it is concluded that more awareness is needed among mothers, even educated ones, regarding childhood obesity and its adverse effects on health in the long run. Most of the mothers refused to acknowledge their child as overweight or obese and did not regard childhood obesity as a serious health hazard. Maternal practices such as buying unhealthy food, allowing children to skip breakfast, stay up late at night, watch T.V for hours and not encouraging them enough to engage themselves in physical activities are at the heart of the problem of childhood obesity.

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