Original research

PARENTS' PERCEPTION ON CHILDHOOD OBESITY AND ITS PREVENTION; A POPULATION-BASED OBSERVATIONAL STUDY IN JAZAN, SAUDI ARABIA WITH INTENTION TO DEVELOP SELF INSTRUCTIONAL MODULE

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Abstract: Globally, Childhood obesity is one of the most serious public health challenges in the 21st century. In 2017, the Commission on Ending Childhood Obesity (ECHO) reported that worldwide obesity increased 10-fold among children and adolescents during the last 40 years. According to World Health Organization (WHO) & Childhood Obesity Surveillance Initiative (COSI) data, childhood obesity rates are highest in the Southern European Countries in the World. Childhood obesity is one of the most important public concerns due to increased incidence with a high morbidity rate. This study was intended to identify the parent's attitude on causes and its prevention of childhood obesity in Jazan province. With the Stratified Random sampling method, 100 obese children's parents were selected. Initially, personal information was obtained about a child and mother, and then "Google Form" 5-point Likert's scale was administered to assess parents' attitude on obesity and its prevention. It has four domains (General information on obesity - 2 questions, causes of obesity - 14, consequences of obesity - 4, and prevention of obesity - 10) with 30 questions. The results of the study are expressed as mean and standard deviation (mean percentage). The parent's attitude score was expressed in terms of obesity 5.86 ± 1.27 (58.6%), causes 38.75 ± 6.52 (55.36%), consequences 11.65 ± 2.36 (58.25%) and prevention 29 ± 5.15 (58%). The overall mean score and standard deviation were 86.67 ± 13.81 (54.84%). The parents had an average attitude score (64.57%) on the causes and prevention of childhood obesity. There was no association between attitude scores with the demographic variables, except the variable age associated with attitude scores. Obesity prevention requires effective intervention measures. The research study proposed that family education and impulse are essential for treating childhood obesity. Schools play a significant role in promoting healthy eating habits and physical activity.

Keywords: Parent's attitude, Childhood obesity, Prevention of obesity

INTRODUCTION Childhood obesity is global one of the most serious public health challenges in the 21st century. In 2017, the Commission on Ending Childhood Obesity (ECHO) reported that worldwide the obesity increased 10-fold among children and adolescents in the last 40 years. According to World Health Organization (WHO) Childhood Obesity Surveillance Initiative (COSI) data, childhood obesity rates are highest in the Southern European Countries. In countries like Cyprus, Greece, Italy, Malta, San Marino, and Spain, between 2015 and 2017, childhood obesity rates were highest, boys' rate was higher (18%-21%) and slower among girls. European Office for Prevention and Control of Non-communicable Diseases has stated that obese children are five to seven times more likely to be obese in adulthood than non-obese children [1].

The causes of overweight and obesity among children can be divided into genetic [6] and lifestyle factors, including physical activity and eating habits [7,8]. Several studies

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have shown that parents control children's lifestyles; and that childhood obesity is related to family variables [9-17].

A dramatic increase in the prevalence of obesity has happened mainly because of consumption of high calorie and high-density foods, unhealthy food choices, physical inactivity, unhealthy lifestyle practices, over stress, poor parenting, parent lifestyle influences, lack of playground, media, school society influences and genetic causes [2]. Childhood obesity has been correlated with other observable behaviours to include, too many hours watching television [3], diet, and exercise [4,5]. Another study concluded that causes of obesity were overeating, time on-screen, decreased outdoor play, ineffective breastfeeding during infancy, and junk food advertisements. Also, mothers have poor knowledge (94.40%) on childhood obesity [6]. Obesity-related behaviours of parents mainly influence childhood obesity; they are the role model for their child [7-9], particularly among children under the age of five. Health behaviours are very important, and it's difficult to change when the age progress [9] and tends to track into adulthood [10] but early childhood period is amenable [9]. However, the early childhood period is an auspicious time to intervene, and parents can play a vital role in carrying out intervention [11].

Childhood obesity and overweight is conjecture to adult obesity, increasing plausibility of morbidity (chronic diseases like diabetes, hypertension, heart disease, orthopaedic problems, and lack of self-confidence and poor self-esteem) among adults [12-18]. Along with parental influences, television viewing is widely reported as influencing adolescent eating behaviours, such as eating insufficient fruits and vegetables, increased soft-drink and fat intake [19]. Perception is a complex expression that is highly influenced by any person's knowledge, cultural practices, and beliefs [20,21]. Mothers are primary caregivers. Therefore, their perceptions about child health highly influence children's nutrition and physical activity. They play a vital role in sculpting their children's knowledge, behaviour, and attitudes at early ages [22,23]. They help them in developing eating behaviour, energy intake, and food preferences [24]. The primary prevention involves good obesity-related knowledge by parents and proper attitudes leading to efficient practices [25,26].

Among the family variables, parental perceptions and attitudes regarding childhood obesity have been associated with their child's overweight or obesity [12,18-20]. A previous study reported that parents of overweight children do not recognize their child as overweight and are not aware of their overweight status [18]. Thus, low parental perceptions of their child's overweight or obesity are unlikely to provide a healthy lifestyle or environment for their children [12]. Although some studies have been conducted on parental perceptions of their child's body types or weight [19,20], little is known about the relationship between parental perceptions on childhood obesity and their child's overweight or obese status. If associations between parental perceptions on childhood obesity and the child's overweight/obesity status are revealed, this evidence may help prevent childhood overweight/obesity. Therefore, it is important to assess the levels of parental perceptions on childhood obesity and evaluate the association between parental perceptions and their child's overweight status.

The research findings revealed that parents had a weak attitude towards overweight; also, there was a gap between nutrition knowledge and attitude, particularly on causes of overweight and its prevention [27]. Nearly 65% of preschool-aged children's mothers were not aware of childhood obesity as a health problem. This lack of knowledge on childhood obesity challenges any intervention because an underlying cause of poor health (like obesity) might be perceived as a manifestation of good health [28]. Management of obesity requires behaviour change, including diet and physical activity. Health Care Professionals can provide adequate support to parents by showing them healthy lifestyles among children and help parents recognize obesity. This will have a substantial impact on growing epidemic of obesity among children [6]. Research studies proposed that family education and impulse are essential for treating childhood obesity [29], school plays a significant role in promoting healthy eating habits and physical activity [30]. This study aimed to assess parents' attitudes about the causes and prevention of childhood obesity, which may help the parents have proper attitudes towards healthy lifestyle practices among children.

MATERIALS AND METHODS

Research Approach: Quantitative Research Approach.

Research Design: Descriptive population-based observational design.

Population: children were studying primary and secondary level education in schools of Jazan province.

Samples: students from primary and secondary level education between the age group of 6-12 years.

Sampling Technique: Used Probability sampling technique. The schools' zone was selected through the random sampling technique, and then the students with obesity were selected through the stratified sampling technique.

Sample Size: 150
The setting of the Study: Schools in Jazan, KSA.
Development and description of the tool: A web-based descriptive survey study was conducted using a "Google Form" 5-point Likert's scale developed to assess the attitude of mothers about causes and prevention of childhood obesity. Likert's scale consists of five responses, namely (a) strongly disagree, (b) disagree, (c) neither agree nor disagree, (d) agree, and (e) strongly agree. The numerical score assigned against each response is strongly disagreed - score 1, disagree - 2, neither agree nor disagree - 3, agree - 4, and strongly agree -5. The attitude scale has four domains (General information on obesity - 2 questions, causes of obesity - 14, consequences of obesity - 4, and prevention of obesity - 10) with 30 questionnaires developed by the investigator. The attitude score ranked as poor (0- 50%), moderate (51 - 75%) and good (76 - 100%).
Data Collection Procedure: A Web-based descriptive population-based observational study was carried out to assess parents' attitudes about childhood obesity and its prevention. Formal permission was obtained from the authorities of primary & secondary education, with the random sampling method as Zone 1 has chosen in Jazan province and obtained permission from a Head of the institution of concerned school, children with the age group of 6-12 years screened for obesity through BMI. By Stratified random sampling method, 100 obese children's parents were informed on the significance of the study and consent obtained for willingness to take part in the study through online. Initially, personal information was obtained about the child and mother, and then "Google Form" 5-point Likert's scale was administered to assess parents' attitude on obesity and its prevention. After data collection, education was given about causes, complications, and preventive measures of obesity through web-based lectures.

Data Analysis Analysis was performed by using IBM Statistical Package for the Social Sciences (SPSS) version 16 and Software for Statistics and Data Science (STATA) version 10, and Statistical Software
for Epidemiology (Epi info) Version 3.5.1. Child and mother's personal data were given in frequencies with their percentages. Attitude scores were given in mean and standard deviation.

RESULTS Regarding personal information on children and parents, a greater number of female children (52.50%) with the age of 10-12 years (38.74%) studying class four (25%) identified as obese.75% of families has three child norms with the child-birth order of two (50%). Fathers are high education graduates (26.03%), and employment status as a government employee (38.66%), 79.17% of mothers is a homemaker, and they completed higher school education (42.50%). All children consume non-vegetarian, and the frequency of consumption was thrice a week (54.46%). The parents' attitude on causes and prevention of childhood obesity on all questions were expressed in mean, standard deviation (SD), and mean percentage listed in Table 1. On each question in the attitude scale, parents' attitudes were classified as strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree. The parent's attitude on the listed questions was that 36.57% of parents strongly disagree that obese children were healthy, whereas 29.27% agreed. Only 38.67% of the parents agreed that obesity was the major health problem, 45.33% disagreed that obese parents had obese children, and 42% disagreed that breastfeeding infant had less prevalence of obesity. Parents neither agree nor disagree on skipping breakfast (52.37%), physical inactivity and lengthy screen time (41.83%), lack of sleep (44.57%), which may increase obesity. Also, they agreed that faulty food habits (39.43%), unhealthy lifestyle practices (52.83%), and parent dietary behaviour (40.17%) were associated with obesity.

The attitude of the parent's neither agreed nor disagreed to accept the truth of obesity that increased intake of carbonated drinks (37%) might increase the risk of obesity. Still, they agreed that a high intake of sweet (42.68%) and chocolates (48.27%), ice creams (51%), fried foods (52.23%) induce obesity. Thirty seven percent of the parents accepted that media influence a child's eating behaviour. The parents acknowledged that musculoskeletal problems (37.87%), and diabetes, kidney, and cardiovascular problems (35.67%) were common among obese children. But they disagreed with psychological problems (36.53%) and decreased cognitive thinking ability (36%) not because of obesity. About 58.50 % of parents strongly agreed that obesity was cured and prevented. Parents agreed with parent role in the change of lifestyle practices (56%), parent role modelling (48.21%), daily physical activity (52.57%), and physical education classes (46.33%), diet restriction (60%) might decrease the risk of obesity. Whereas they are confused with food advertisement (44.33%), consumption of required quantity of fruits and vegetables (35.17%), avoid eating while watching television (45.83%) may influence obesity. The domain-wise attitude means score, mean percentage, and standard deviation were given in Table 2.

N	Questionnaire	Mean	SD	Mean %
1	Obese children are healthy	2.63	1.17	52.6%
2	Obesity is major health problem	2.87	1.02	57.4%
3	Obese children parents are obese	2.82	1.09	56.4%
4	Breastfeed infant are less likely to be obese	2.24	0.95	44.8%
5	Skipping of breakfast increases the weight	2.55	0.81	51.0%
6	consumption of dairy products and Energy dense food increases the weight of the child	2.73	0.98	54.6%
7	Unhealthy Lifestyle practices & environment are important causes for obesity	3.02	0.98	60.4%
8	Physical in activity and longer television watching/ video gaming increases body weight	2.92	1.01	58.4%
9	Parent dietary behavior associated with child obesity	3.04	0.91	60.8%
10	lack of sleep induces obesity	2.84	0.95	56.8%
11	Increase intake of sweet will increase the risk of obesity.	2.61	0.79	52.2%
12	Increase intake of carbonated drinks increase the risk of obesity	2.79	1.07	55.8%
13	Increase intake of fried foods may increase the risk of obesity	2.56	0.8	51.2%
14	Increase intake of chocolates may increase the risk of obesity	2.45	1.1	49.0%
15	Increase intake of ice creams may increase the risk of obesity	2.38	0.87	47.6%
16	Mass media trigger the child to eat more unhealthy food	2.71	1.1	54.2%
17	Obesity results in diabetes, kidney disease, and cardiovascular diseases	2.48	1.04	49.6%
18	Obesity may induce the Musculo-skeletal problem	2.39	1.08	47.8%
19	Obese children have Psychological and emotional instability	2.63	1.01	52.6%
20	Obesity decreases the cognitive thinking ability in children	2.65	0.99	53.0%
21	Obesity can be cured and prevented	3.01	0.77	60.2%
22	Parent role in modification of children healthy lifestyle practices	2.73	0.99	54.6%
23	Parent should be a role model for their children (through actions on healthy dietary practices, nutritional snacks, and lifestyle)	2.54	0.96	50.8%
24	Regularize or restrict the television watching time reduces risk of obesity	2.39	1.14	47.8%
25	Daily physical exercises for 30 min to 1 hour reduces the risk of obesity	2.7	0.74	54.0%
26	Parent should discourage their children watching food advertisement	2.57	0.99	51.4%
27	Consumption of required quantity of fruits and vegetables in daily diet decreases the risk of obesity	2.65	1.09	53.0%
28	Avoid eating while watching TV will reduces the risk of obesity	2.51	0.98	50.2%
29	Physical education classes may increase the energy expenditure and reduce the risk of obesity	2.59	0.99	51.8%
30	Dietary restriction and physical activity may control obesity	2.55	0.93	51.0%
	Total	**2.65**	**0.98**	**53.0%**

Table 1. The parents' attitude on causes and prevention of childhood obesity on all questions (n=100)

The overall attitude score gained by the parents is shown in Figure 1.

S.No	Attitude Items	No. of Questions	Score (SA – 5)	Mean	SD	Mean %
1	General	2	10	5.86	1.27	58.6%
2	Causes	14	70	38.75	6.52	55.36%
3	Consequences	4	20	11.65	2.36	58.25%
4	Prevention	10	50	28	5.15	56%
	Total	**30**	**150**	**84.26**	**14.27**	**56.17%**

Table 2. Domain wise statistics on attitude of parent's regarding childhood obesity and its prevention (n=100)

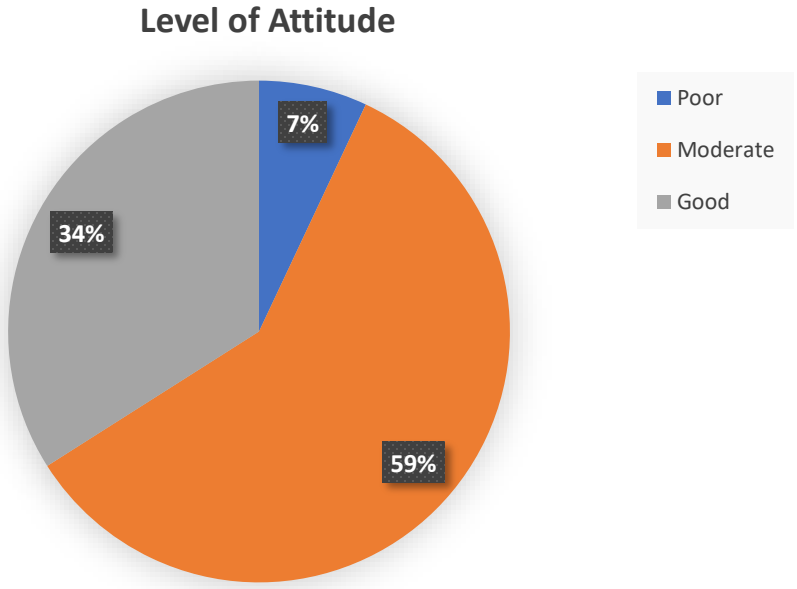

Figure 1. Parents' attitude on childhood obesity and its prevention

DISCUSSION The study aimed to assess the attitude of parents toward childhood obesity and its prevention. The study finding shows the prevalence of obesity was high in girls who were in line with research published. The Global burden of disease study found the prevalence of obesity in children and adolescents in developing countries was high among girls (13.4%) compared to boys (12.9%) [31]. In contrast, other research studies found that girls had a lower prevalence of obesity than boys [31]. In this study, parents' attitude on obesity was major health problem (37.67%) which agreed well with the research study, that 35.04% of respondents perceived childhood obesity could be a health problem for their children [28]. But, in Hossain et al. study more than half of the mothers perceived obesity as a sign of good health [28].

More than two-thirds of mothers are not aware of the consequences of obesity (68.6%); this result contradicts the study's finding [28]. Few studies show that though the mothers are knowledgeable about healthy eating habits and health risks of overweight and obesity, they cannot decide their own child's weight status. Many parents

believe that obesity is an inherited problem, a genetic cause that causes excess weight gain, and do not consider how their own eating habits and the surrounding environment affect the child [28]. Television advertisements on junk food that may influence obesity were neither agreed nor disagreed by mothers. Still, a similar study proved that 81.6% of mothers agreed that it alters the child-eating practice [32]. Hunt et al. addressed that 74% of their participants supported advertisements on junk foods needing a ban to tackle obesity [33]. Parent role-modeling is highly influencing the child's eating behaviors. Campbell et al. found that the parent's intake of high-energy fluids, sweet and savory snacks, and take-out foods were positively correlated with the children's intake of similar foods. These unhealthy foods in the home environment were further positively correlated with children's consumption of high-energy drinks, sweet and savory snacks [34].

Brown and Ogden parental modeling and its impact on a child's eating attitudes and behavior proved that there is a significant correlation between the unhealthy snack intake, such as chocolates, crisps, and sweets, with that of the parents and the children. There was also a significant positive correlation between the parent's and children's internal motivations for eating and body dissatisfaction [35]. Mushonga et al. found that 70% of parents agreed that overweight and obesity are risk factors for cardiac diseases [27], similar to the study findings. Parents' attitude on overweight was weak in Mushonga et al., but in this study, it was moderate. Our results are consistent with the study conducted by Olds et al. to assess the attitudes towards obesity among parents and their children, where lifestyle is a primary cause of obesity and considered a serious health problem [36]. Similarly, the study conducted by Njelekela et al. found that most schoolchildren agreed to do physical activities and disagreed that obesity is an indicator of good health [37].

CONCLUSION The prevalence of overweight and obesity is alarming the health care professional to act immediately on culminating this problem. Otherwise, the consequences of obesity increase morbidity and mortality among children and adults. Prevention is supreme focus; it starts at home, school, and community. Parents play a significant role in preventing childhood obesity because they are role models for their children. Parents' attitude towards obesity brings several intervention measures to eliminate obesity among children and adolescents. The study findings also proved that the mothers had a moderate attitude on obesity and its prevention. Their attitude reflects on the food choices and physical activities of their children. Though the children have adequate knowledge of obesity, their attitude shows negative, due to their parental influences. It signals that health care providers need to give certain interventions like counseling for both children and parents, family-based, school-based intervention programs on healthy lifestyle practices, and its importance.

Conflicts of Interests

The research received no specific grant from any funding agency in public, commercial or not-for-profit sectors. The author declared no conflicts of interest.

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