

# Management of Obesity in Ghanaian Children: Voices of Health-workers and Parents

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## Abstract

Obesity has been described by the World Bank as a “ticking time bomb” which has significant potential devastating economic and health effects, for the poor, and low-and-middle-income country dwellers. However, obesity is thought of as a challenge only among the rich, urban, and high-income country inhabitants. This study was conducted in Ghana to gain in-depth understanding of the determinants and management of obesity in children among health-workers and parents. A qualitative case-study in design, data were collected with an in-depth interview guide from five doctors, seven nurses and eighteen parents purposively selected from the paediatric department of the 37 Military Hospital. Recorded interviews were transcribed, coded manually, and analyzed using the principles of Grounded Theory. Obesity in children is on the ascendancy with inadequate management. Determinants are both familial and environmental with detrimental health and psychological consequences. Some healthcare providers need to be trained in the assessment, diagnosis, proper interpretation, and management of the condition. There is also the need for mass education of the public especially parents, by relevant stakeholders to reduce the incidence of obesity in children and its attendant problems in Ghana.

**Keywords:** Ghana; Health-workers;  
Management; Obesity in children; Parents

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## INTRODUCTION

Obesity in children has been recognized as a significant national and international government health crisis (Wang & Lobstein 2006). A child is regarded to be influenced by obesity, if his or her body mass index-for-age (or BMI-for-age) percentile is equivalent to or higher than 95% (Kelishadi, 2007; Ogden *et al.*, 2014). BMI-for-age percentiles have been created as the preferred technique for measuring weight status in children. This technique calculates the age and BMI-based weight category of the child, which is a weight and height calculation. BMI is also plotted on the CDC growth chart for children between 2 and 19 years of age to check for the corresponding percentile related to age and sex (Ribeiro, *et al.*, 2010).

Obesity in children is triggered by the imbalance between calorie consumption and calorie use (De Onis, & Lobstein, 2010), implying that, when intake of food exceeds expenditure consistently over some period of time, there is the incidence of obesity. The incidence of obesity in children tends to have adverse effects such as premature mortality as well as adult physical morbidity and is usually linked to impaired childhood health (De Onis, & Lobstein, 2010). Furthermore, obesity in adolescence can lead to several health risks, including type 2 diabetes mellitus, early metabolic syndrome, dyslipidaemia, coronary artery disease, and obesity in adulthood (De Onis, & Lobstein, 2010; Ribeiro, *et al.*, 2010).

Though there have been claims that complications of obesity in children do not become apparent for years, the metabolic effects of obesity may already be apparent in young children. The child with obesity may develop gallstones, hepatitis and sleep apnoea before adulthood, and other social effects like teasing, discrimination, victimization and clustering of cardiac risk variables as well as psychological issues such as anxiety and depression, low self-esteem, and low self-reported quality of life (Peltzer, & Pengpid, 2011; Reilly, 2007). They are also likely to experience chronic disease-affected health, contributing to increased private and health care expenses (Chaput, *et al.*, 2011). Children who are affected tend to experience negative outcomes in adulthood such as limited productivity and excessive medical costs both at home and the

workplace. A good course of weight in children is therefore necessary, and this is where height and weight change are proportionate as children grow (WHO, 2015).

Childhood-related obesity is a growing problem for the health and well-being of the child (Reilly, 2007). Genetic, behavioural, and environmental factors are the elevators of obesity in children. These factors include altered nutritional habits, sedentary lifestyles, enhanced access to low-cost high-fat, high-energy products, and a simultaneous decrease in physical activity (Reilly, 2007). In certain instances, the appetite of children may tend to increase through certain medical circumstances, such as hormone disorders or low thyroid function, and some medications, including steroids or anti-seizure medications which may result in weight gain. Many a time, obesity in children (and obesity in general) is regarded as an issue for high-income countries, yet low- and middle-income nations are also facing this challenge, and Ghana is no exception. For this reason, the world bank has described obesity in low-and-middle-income countries as a “ticking time bomb” with significant potential devastating economic and health effects on these countries (World Bank Report, 2020).

Global statistics indicate that in about 5 decades beginning the 1970s, prevalence of obesity has nearly tripled. In 2016, about 1.9 billion adults aged 18 years and above were classified as overweight, from which 650 million were obese. More than 340 million children and adolescents between the ages of 5 and 19 years were overweight or obese, and 41 million children younger than age 5 years were also overweight or obese (WHO, 2018), 25% of these children representing 10.25 million were found in Africa (WHO, 2018).

A systematic review of overweight and obesity in Ghana in 2016 revealed consistent elevations in the prevalence of overweight and obesity for 18 consecutive years (1998-2016). This review indicated that almost 43% of sampled adult Ghanaians across all regions were either overweight or obese. The national prevalence of these variables were estimated as 25.4% and 17.1% respectively, with higher figures among urban dwellers than rural dwellers (27.2% against 16.7% for overweight) and 20.6% against 8.0% for obesity). Regional analysis

labelled 55.2% of residents of the Greater Accra Region as overweight or obese alongside the level of urbanization (Ofori-Asenso, Agyeman, Laar, & Boateng, 2016). With regard to overweight and obesity in children, a study in urban Ghana among school children aged 5-16 years has also indicated that about 47% of these children were overweight, and 21.2% were obese with higher prevalence of obesity in children in private school (26.8%) than in public school (21.4%) (Ganle, Boakye & Baatiema, 2019). Other empirical evidence in Ghana shows that almost 19% of Ghanaian children are either obese or overweight, and this represents a public health challenge. More females are found to be overweight or obese than males (Ofori-Asenso, Agyeman, Laar, & Boateng, 2016; Ganle, Boakye & Baatiema, 2019; Akowuah & Kobiah-Acquah, 2020)

In other studies, obesity determinants have been found to be complicated and diverse, hence it is not feasible to focus on a single course of action to prevent obesity in children (Chaput, *et al.*, 2011). In the same vein, childhood interventions to avoid overweight and obesity in low- and middle-income countries have been effectively introduced through several pilots, however, obesity in children remains a threat (Crothers, *et al.*, 2009). There are some existing preventive measures both by health facilities and the government of Ghana such as health portion education on the causes of obesity and healthy eating, but these are inadequate to effectively control or manage obesity in children.

In addition to contributing to the literature on obesity in children in Ghana and low-and-middle income countries in general, this study is deemed timely and important because previous studies in the country have concentrated only on parents with children suffering from obesity with quantitative methods (Lindsay, *et al.*, 2006), this study included health workers and some Ghanaian parents regardless of their children's weight status, and was conducted to unravel in-depth information on the determinants and management of obesity in children from their perspectives and from a qualitative study angle to better inform obesity prevention and management programmes in Ghana. Health workers were included in the study to ascertain the factors that influence obesity in

children and what the health system has put in place to manage the problem. Also, parents with and without obese children seeking care for their ill children in the study facility were sampled because they were all parents and had a common goal of seeking the treatment for some health problem(s) for their children and were accessible in the study facility.

## METHODOLOGY

### Study Area, Design, and Sampling

The research was a case study conducted at the 37 Military Hospital in Accra. The 37 Military Hospital was selected purposively for its known status as the second largest hospital in Ghana and its role as the National Health Facility for Disaster and Emergency Response. The hospital is a specialist military-based hospital located in the South-Eastern part of the Greater Accra Region of Ghana. It is located some few metres from the Jubilee House which is the seat of Government in Ghana. It is supported by many Medical Reception stations in the various military garrisons across the country. The hospital caters for both military personnel and civilians throughout Ghana. It has a mix of staff, both military and civilians, thus, provides health care to soldiers, their dependents and over the years incorporated the provision of health services to the public. The hospital has a staff strength of about 3,500 with an estimated outpatient attendance of 30,200 and 13,209 inpatients yearly. Additionally, the hospital has been touted as one of the best hospitals in the country, where patients can access many different specialized services at a time, thus, serving as an abode for patients with diverse medical conditions. Access to eligible participants was therefore easier.

The study population were healthcare workers and parents attending hospital with their ill children. To ensure inclusion of eligible participants, and to ascertain their willingness to participate in the study, all participants were contacted before data collection began. Purposive sampling was thus, employed to select 5 doctors out of a total of 7, and 7 nurses out of a total of 20, all at the paediatric unit of the hospital who were willing to be part of the

study. Convenience sampling was used to recruit 18 parents visiting the hospital at different times into the study. Out of the 18 parents, 3 of them, had children who were affected by obesity, and the others had children living with other medical conditions and frequented the hospital. A total of 30 participants were thus, involved in the study. The sample size for each category of participants was determined during the interviews, when data saturation was realized, and interviews were discontinued ((Langdridge, 2007).

### **Study Instruments and Data**

The qualitative data consisted of responses from interviews. An interview guide was developed in tandem with the research questions to gather general and specialist views and information on risk factors, preventive approaches and measures that had been proven effective in dealing with obesity in children from doctors, nurses and parents. The interview guide was pre-tested in a clinic in the Adentan District of the Greater Accra Region. This was to ensure that the questions were clear without traces of ambiguity and elicited clear and appropriate responses. All participants were invited to take part in face-to-face in-depth interviews. To ensure collection of high-quality data, all the interviews were conducted in English as all the participants could clearly express themselves in the English language and thus, preferred it as the medium of communication for the interviews. Also, the interviews were facilitated by the second and third authors who hold master's degrees from the University of Ghana and have the requisite training, skill and experience in qualitative research data collection.

For all the participants, core topics were the same, but probes were added so that the specialists which in this case were the doctors could give a medical opinion on some of the issues regarding obesity in children. Prompts and probes were used throughout the interviews to ensure adequate stimulation of the discussions.

### **Ethical Considerations**

Ethical approval was granted by the Ethics Committee of Humanities (ECH), University of Ghana, as well as the 37 Military hospital with the study protocol before the commencement of the

study. Each participant was informed about the purpose of the study, the voluntary nature of their participation and their ability to terminate the interview at any stage without any negative consequence before their engagement in the study. Their signed written informed consent which additionally contained permission to publish findings of study with anonymous quotes from participants was also obtained.

### **Data Processing and Analysis**

The interviews were digitally recorded, and field notes were taken as well. The transcripts and the original recordings were reviewed several times. The audio recorded interviews and notes taken were transcribed verbatim in a word processing application. The data were analyzed using the principles of Grounded Theory as a guide by the first and second authors independently. They then came together to compare notes and built consensus. Manual coding labels were assigned to the main themes that emerged from the data on determinants and management of obesity in children. Quotes were then selected to represent the themes and slightly modified to enhance readability. The letters 'D', 'N' and 'P' were used to denote quotes from Doctors, Nurses and Parents respectively.

## **FINDINGS**

The findings of the study are presented under the main themes of: Socio-demographic characteristics of respondents; What is obesity in children? determinants of obesity in children; effects of obesity in children; and prevention and management of obesity in children as follows:

### **Socio-demographic characteristics of respondents**

As shown in Table 1, 73.3% (22/30) of respondents were females and the remaining 26.7% (8/30) were males. The majority of respondents (60%; 18/30) were between the ages of 25 and 45 years whilst 40% (12/30) were 46 years and older. Sixteen out of 30 (53.3%) were married, 12 (40%) had never married before and the rest, 6.7% (2/30) had no spouses because they were divorced. Whilst

only 8.3% (1/12) of health-worker respondents had been employed for 1-12 months in the health

facility, the majority (41.7%; 5/12) had worked in the health sector for more than 10 years.

Table 1: Socio-Demographic Characteristics of Respondents

| Attribute  | Number of Respondents | Percent |
|--|-----------------------|---------|
| <i>Age (Years)</i>   |                       |         |
| 25-34  | 14                    | 46.7    |
| 35-45  | 4                     | 13.3    |
| 46+  | 12                    | 40      |
| <i>Sex</i>   |                       |         |
| Male   | 8                     | 26.7    |
| Female   | 22                    | 73.3    |
| <i>Marital Status</i>  |                       |         |
| Married  | 16                    | 53.3    |
| Never married before   | 12                    | 40      |
| Divorced   | 2                     | 6.7     |
| <i>Number of years worked in the facility (Health-workers)</i> |                       |         |
| 1 – 2  | 1                     | 8.3     |
| 3 – 5  | 3                     | 25      |
| 6 +  | 8                     | 66.7    |

N = 30; n (health-worker) = 12

### What is obesity in Children?

The doctors and nurses were generally knowledgeable on what obesity is. They defined it as a condition in which a child has excess body fat, or a child is equal or above the 95<sup>th</sup> percentile of the Body-Mass-Index for age.

Obesity in children is a medical condition that affects children and adolescents making their body to store too much fat above the normal weight for their age and height. A child is affected by obesity when his or her BMI is above the 95th percentile.... [D1]

A child is said to be affected by obesity when he/she has excess body fat.... “[N1]

When the weight for height of children is above normal for their age, we usually say the child has been affected by obesity [D2]

The parents also understood what it meant to say that a child is affected by obesity. Obesity to them

is the excessive weight gain in children usually coupled with health problems.

Obesity is when a child is fat and his/her weight exceeds the normal weight for a child when you compare him or her to their age mates [P1]

It's obvious to identify a child who is affected by obesity because that child looks fat or fleshy than his friends and age mates [P3]

### Factors Influencing Obesity in Children

#### *Genetic characteristics*

The role of genetics is a very common cause of obesity mentioned by all the health worker participants. Some of them stressed that, genetic make-up is the main predictor of a child's weight. Some of the participants indicated that certain medical conditions can also lead to babies being born overweight, thus,

Usually, babies are born with excess body fat or weight when their parents, especially the mother is overweight, and also when the mother has certain health conditions like diabetes (D4)

A child is affected by obesity when family factors usually overshadow other physical or environmental causes, for this, control is quite difficult (N6)

Some parents also believed that obesity among children was associated with genetic factors. According to one parent:

Sometimes you feed your children the same amount of food and engage them in similar activities yet one is affected by obesity, taking after a fat person in the family (P5).

However, some of the parent participants indicated that some parents are to be blamed for their children becoming affected by obesity.

Some of us parents allow our children to eat the food they're not supposed to be eating and these children tend to gain weight excessively, but we interpret it as having genetic origin because some family members are overweight.(P6)

### *Environmental and Behavioral factors*

The healthcare workers believed that Ghanaian diet is a major cause of excess weight among the children. They stated that many of the foods are high in fatty oils, starch, and carbohydrate and lack enough protein and minerals. They also mentioned lack of exercise and physical activities for children as well as social and psychological factors being causes or determinants of obesity in children in Ghana.

Ghanaian foods are mainly starchy foods like cassava, flour, maize, yam and cocoyam, and these form the bulk of our daily meals. Thus, we feed our children with these foods that are high in energy and the expend little energy by way of exercising. [D5]

We have been socialized to consume what is available and cheaper, however, these tend to make us grow fat. Ghanaian foods like fufu and banku are all loaded with high calories, our children eat large portions of these almost every day and some end up being affected by obesity. [D3]

For me, when my child does not add bread to his breakfast, I feel he would go hungry soon, so I always insist on he eating a huge portion, but I have now realised that it's too much and not good for him because of the frequency and size P13]

Diet, lack of exercise, psychological conditions such as looking thin meaning poverty and being fat connoting good living are some of the factors associated with obesity in children [N3]

Here in Ghana, people look at your fat child and say, she is looking nice and that it is a sign of good living, and this motivates you to overfeed the child [P10].

### **Effects of Obesity in Children**

The healthcare workers identified health effects of obesity in children to include serious medical conditions such as cardiovascular diseases, sleep apnea and diabetes.

We have seen many children who come here and are suffering from heart diseases and high blood pressure due to their weight. Diabetes is also very common among such children [D2]

When a child finds himself suffering from obesity, there is the likelihood of having difficulty in sleeping well, blocked arteries and a lot of painful conditions [D3]

A child who has obesity is very likely to suffer from heart related diseases even as a child, he or she may later develop more complications in adulthood if not much is done about it, and ultimately meet his/her death [D5]

Though parents had a fair idea of the health effects that obesity had on children, the social and psychological effects such as low self-esteem and

ridiculing were what they were mostly concerned about. Parents with children who are affected by obesity indicated that in such situations they are also affected psychologically and emotionally.

Sometimes children who are fat are teased by their friends at school and so they refuse to go to school on some days, this affects their schoolwork and therefore their future [P17]

People tend to frown at abnormal looks, especially when a child is too big for his/her age, this child is stared at by people wherever they find themselves in the public. This may create psychological effects such as low self-esteem for the child and the child may withdraw from social activities [P10]

There was a party being organized for children in my neighborhood, and my child went there. He later came back home crying that they were telling him not to come and finish the food because he was fat, I became very disturbed as a parent. [P2]

### **Prevention and Management of Obesity in Children**

Healthcare worker participants enumerated health promotion activities such as education on causes and effects of obesity in children among the general public, healthy eating for all and adequate physical activity and exercises as the main preventive activities that can curb or control obesity in children. They however, indicated that the manner in which some of these activities are carried out makes it ineffective in controlling the prevalence of obesity in children.

Some health education is given to mothers if they come for weighing. Measures are not effective, and this is because they lack knowledge about the effects of obesity in children [N2]

We educate mothers on child feeding but I don't think it's really effective because we say it in passing when they come for weighing and we don't really monitor. Also, during the first few visits after

children are born, we look for weight gain in children and encourage parents to feed their children well. When this is carried into the future without caution, then the problem of obesity sets in [N1]

With regard to the management of obesity in children in the facility, healthcare worker participants stated that they prescribe healthy eating, encourage increase in physical activity, and prescribe appropriate medications when the children have accompanied morbidities, and provide them with counselling services as well.

I usually refer my patients especially parents with children who are malnourished to our in-house dieticians to advise them on how to manage their diet. We also have health workers counsel parents. [D3]

The doctors and nurses also established that some of the recommended approaches in dealing with obesity in children should include the provision of the necessary information through mass education on the right nutrition for children. They also suggested that parents should seek professional help to identify effective ways of dealing with the factors that can easily lead to obesity in children.

More sensitization of the general public about obesity in children being a serious condition would help in the prevention of obesity in children. More education to be given at child welfare clinics about the condition as well [D1]

Metropolitan, District and Municipal Assemblies ensuring that there is the provision of play-grounds or recreational areas in various communities in the country would help. These can serve as a means of exercising the body and expending more calories [D3]

There should be public health education on risk factors associated with obesity. Local government should support gym services to make it cheaper so as to encourage patronage. Keep fit sessions should be encouraged regularly in various communities to cultivate a pattern of

physical exercise in citizens and their children and physical education should be incorporated in various schools' curriculum [D4]

For parents with children suffering from obesity, they need to draw up health food menus and they must strictly comply with them, there should be less cholesterol food, they should eat foods with more fibre, fruits and vegetables. Parents should help their children to exercise and also adhere to their diet plan [D5]

Parents with children who are affected by obesity particularly stated that they try to control the intake of the children, as a way of managing their condition, but do not have much control over foods advertised and sold to the children outside the home, especially when they are in school. Some parents also did not feel well equipped to distinguish between healthy and non-healthy foods considering great exposure and availability of the various foods that they have been socialized with.

I try to discourage eating of snacks while in school as a way of controlling my son's weight, but because I'm there not with him, I can't enforce that [P3]

Hmmm, at times, it's very difficult to select from the many high calorie foods that we're used to, and that makes it difficult to control the weight of the children [P10]

Parents also reported on the need for strategies to encourage their children to eat healthy foods as unhealthy food tasted good and irresistible to the children. Parents also recognized that the absence of playgrounds in schools and communities led to children's low physical activity levels. They therefore pleaded that schools should incorporate more physical activities in the school curriculum to assist children to become more physically active as it is difficult for them to oversee to physical activities of the children in the home. They also expressed the need for parents to allow their children to engage in vigorous activities outdoor even when they get dirty because it is healthy.

My child has been suffering from obesity because of how I was feeding him, but

now I have changed his diet plan to help him reduce weight [P3]

Schools concentrate more on studying instead of physical education and physical activity. These must be incorporated into the schools' curriculum to assist with increased physical activity. [12]

I used to punish my children when they go out to play because they get themselves dirty, but now I allow them to engage in playing outdoor games like football and run around so they'll be healthy. [P15]

I think as parents, we should be well informed on all issues related to obesity in children. We need to encourage our children to exercise regularly and their diet has to be changed for healthier options [P7]

## Discussion

The impact of modern lifestyle behavior patterns in low-and-middle income countries has contributed significantly to the physical and dietary changes in recent years, resulting in the rise of the prevalence of obesity in children in these countries in the quiet (World Bank Report, 2020). The in depth understanding of the perspectives of both healthcare professionals and parents on obesity in children provides a useful framework for evaluating the complicated and intricate issues facing obesity among children in Ghana where attention on the issue is quite low just like any other low-and-middle income country.

Healthcare workers' perspectives on the risk factors and causes of obesity in children as found in this study concur with previous studies that described obesity to be excess body fat as a result of eating more calories than what the body expend (Reilly, 2007; WHO, 2015). As found in the study, the causes of obesity in children are diverse. They include unhealthy eating resulting from the availability of high-calorie local foods that are virtually the foods that the Ghanaian tongue is cultured to prefer. Additionally, cultural thinking of the optimal body size and perception of beauty has contributed to the growth of obesity in children as some of the findings of the study have revealed.



Ghanaians as a group of people were not very conscious of physical exercising as a way of preventing obesity in children as most children previously used to walk long distances to and from school. However, urbanization and modernization accompanied with improved economic conditions have influenced some changes to this situation. Children now find themselves going to school in vehicles and eating whatever they find palatable, especially in the urban areas.

The findings have indicated that knowledge on the causes, effects and prevention and management of obesity in children among healthcare workers is high and appreciable among parents, however, the general public needs to be more informed as these seem to be an 'emerging' public health issue in the country.

Existing evidence demonstrates that effective early childhood interventions specifically changes in the nutrition of a child by parents and other lifestyle changes can balance out the risk and protective factors, therefore, early intervention for obesity in children is important. The introduction of healthy methods such as plant-based foods and fruits consumption and the inclusion of exercises and active lifestyle have been identified as the cornerstones of obesity in children prevention programmes (Barlow, *et al.*, 2002). However from the study, it was realised that the scope of educational services and the environment in which children find themselves did not provide the opportunity to be engaged in lifestyle changes such as conscious healthy eating, physical activities in schools and homes and general obesity prevention efforts. Therefore, there is the call for schools and the government to provide recreational environment, as a base for obesity intervention strategies by healthcare professionals and parents.

The finding pertaining parents believing that healthcare professionals could provide the necessary directions on healthy lifestyle changes, provides a unique opportunity for healthcare workers to point parents and other institutions in the right direction to expose children to healthy behaviour. This is particularly relevant for children who may have the risk factors for obesity. For example, many parents in this study believed that whatever the children enjoyed irrespective of the

caloric content was acceptable since they looked well-fed and catered for, and thus, acceptable by society. Measures could be put in place to ensure that parents are taught how to plan healthy meals at home for their children, and caterers in schools also taught how to provide portion-controlled and balanced meals for children in schools. Further measures in schools could include providing playgrounds and gadgets for physical exercises through Parent-Teacher Associations. This suggestion is in relation to studies that have shown the importance of involving parents in school activities in measures necessary for child wellbeing (Phillips & Shonkoff, 2000).

The successful interventions for the prevention and management of obesity in children have involved important people in the lives of children. These include parents, community members and teachers (Ofori-Asenso *et al.*, 2016; Ng *et al.*, 2014; Shepherd *et al.*, 2002). Clearly apparent in this study is the need for healthcare professionals and other relevant stakeholders to engage parents in health education, behaviour change methods and access to physical activity opportunities by regulatory bodies to assist children gain control over the maintenance of healthy body weight.

A limitation of this study is the sampling of parent participants from a hospital setting, however, the fact that all these parents had one thing in common-the welfare of their ill children, assured genuine responses and opinions on the matter under discussion.

## CONCLUSION

Obesity in children is quite silent in Ghana as the public does not show much concern about it. It is however, important that the general public especially parents are educated to understand the risks of obesity in children, and the need to put adequate preventive and effective management systems in place to tackle it before it becomes an uncontrollable menace. Parents and health workers appear eager and open to strategies and behavioural changes that would be beneficial to overcome and manage risk factors of obesity in children. The mention of institutions especially educational ones is one important aspect that is essential to develop

practical measures in terms of physical education to prevent obesity in children. It is thus, evident that all-encompassing measures need to be established across a variety of settings to ensure that health related messages on obesity in children are relayed to parents and the Ghanaian community.

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