

“I DID NOT CHOOSE TO BE OBESE OR OVERWEIGHT”- EXPERIENCES OF STIGMA AMONG MARKET WOMEN IN KANESHIE, GHANA

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Abstract

Abstract Introduction: Excess body fat is associated with impaired physical and socio-emotional health outcomes. There is limited evidence on stigma and discrimination linked with overweight and obesity in developing country settings where rate of overweight is rapidly increasing. The current study explored the experiences of obesity related stigma and discrimination among adult female vendors in the Kaneshie Market in Accra, Ghana. **Method:** A mixed concurrent methods was employed, with both qualitative and quantitative data being collected and analysed. The quantitative study was a cross-sectional design, with the qualitative being a phenomenology study. Questionnaires and in-depth interview guides were used to collect data from adult female vendors working at the Kaneshie market. Questionnaires were administered to 266 women sampled systematically to represent vendors in the market and 10 in-depth interviews with purposively sampled vendors. The questionnaire was designed to collect data on socio-demographic characteristics and body mass index (BMI) of respondents, whilst the interview guide was designed to elicit information on perceptions and lived experiences of stigma and discrimination linked to weight status. Frequencies were used to describe socio-demographic characteristics of survey respondents. Additionally, the associations between the BMI and socio-demographic characteristics of vendors was also determined using Pearson Chi-Square test and multiple ordered logistic regression test of association. All in-depth interviews were audio-taped, transcribed with thematic analysis used to generate themes describing stigma and discrimination among female vendors at the market. **Results:** About half (56%) of the survey respondents were obese. However, most of them misperceived their weight. Obesity was perceived as the result of excessive eating and physically inactive lifestyle. Obese and overweight women reported that they feel blamed for their weight status. Derogatory name calling, limitations to use of public spaces, and denial of opportunities were stigmatizing attitudes experienced by obese and overweight persons. **Conclusion:** Obese and overweight persons are perceived to be personally responsible for their weight status, and thus subjected to stigma and discrimination. There is a need for awareness among general public as part of strategy to address stigmatizing and discriminatory attitudes towards obese/overweight persons.

Background

Overweight is a condition of excess adipose tissue accumulation that impairs health (1). Globally, more than 1.9 billion adults are overweight, and over 650 million are obese (1). Together, obesity and overweight are considered a global epidemic, necessitating intensive preventive and control actions (2). The World Health Organization (WHO) describes obesity as a disease as well as a risk factor of non-communicable diseases including type II diabetes, cardiovascular diseases, and some cancers (1).

Although overweight and obesity prevalence is higher in developed countries (3)(4)(5), incidence in developing countries like Ghana, is currently high and increasing rapidly (6) (7)(8)(9). A study by Agyemang and colleagues reported an increasing rate of overweight and obesity in all African regions, with Southern Africa recording the greatest burden (9). In Ghana, the 2014 Demographic and Health Survey (GDHS) showed that 40 percent of Ghanaian women are overweight or obese (10). Overweight and obesity rates are also shown to be highest among urban-dwelling females (11)(12).

Overweight and obesity-related stigma involves social devaluation and denigration of people perceived to have excess body weight. This perception leads to prejudice, negative stereotyping, and discrimination toward obese persons (13). This kind of stigma is usually drawn from the notion that the condition is changeable and controllable (14). In essence, excess weight gain is subconsciously construed as a person's choice with stigmatization being used, deliberately or unconsciously, as a means to inspire them to adopt improved behaviors (15).

Weight-related stigma can be based on the attribution theory which suggests that attitudes towards overweight individuals are dependent on how much control they are perceived to have over their weight status (16). Thus, obese and overweight persons tend to internalize the stigma, blaming themselves for their condition (17). Several studies have documented how stigma and discrimination towards overweight persons pose numerous consequences for their psychological and physical health (18)(19)(20). Depression, low self-esteem, eating disorders and low work productivity are some of the reported adverse effects of stigma on obese and overweight persons (21)(18). Overweight and obesity are often linked with impaired physical as well as mental and socio-emotional health (14). While the somatic health aspects of overweight have been well studied in Ghana, there is limited evidence on the links between being overweight and socio-emotional health of Ghanaians (22). This study was therefore, carried out to explore perceptions and experience of stigma and discrimination among female vendors at a large market in Kaneshie in Accra, Ghana.

Methods

Study Design

This was a concurrent mixed methods study that entailed the collection of both qualitative and quantitative data cross-sectionally, with the qualitative component employing a phenomenology approach. This study design enabled the collection of different but complimentary data on factors associated with obesity as well as the perceptions and lived experiences of stigma among the female vendors in the Kaneshie Market. Questionnaires were used to collect the quantitative data, whilst in-depth interview (IDI) guides were used for interviews in the qualitative study.

Study Area

The study was carried out at the Kaneshie Market, a suburb of Accra in the Okaikoi South district. It is one of the largest and well known markets in Accra with vendors from different ethnic groups in the country. The main market is a three-storey vending space accommodating about 7,000 vendors trading in a wide variety of commodities. There are 1,115 stalls on the ground floor, 534 on the first floor and 696 on the second floor. Apart from the well-arranged and demarcated stalls, other vendors around the building including hawkers. The market is open for business every day and food is the main commodity traded.

Study population

The study population comprised of female vendors of reproductive age 18 years and above selling in demarcated stalls within the market storey building.

Materials and Procedure

Systematic random sampling was used to select survey respondents (female vendors at the market). A survey sample size of 266 was determined using Cochran's formula (1963-1975) for estimating sample sizes for cross-sectional studies. The total number of stalls ($n=2,345$) in the market was divided by the calculated sample size of 266 to obtain a sampling interval of nine (9). A ballot was cast to determine which floor of the storey building the sampling will commence from. The ground floor was thus selected randomly from the ballot. Thereafter, the first stall in the ground floor from the main entrance sampled and an interval of eight stalls were skipped before sampling the next respondent. At each selected stall, one eligible respondent (female adult 18 years or older; working as a vendor at the market) was invited to participate in the study. In stalls where there were more than one eligible respondent, they were invited to participate in a secret ballot, and the selected eligible person was enrolled into the study, after they have provided voluntary consent. The respondents were sampled in this manner until the sample size of 266 was obtained. Purposive sampling, was used to select normal weight, overweight, and obese women to participate in in-depth interviews.

Interviewer-administered semi-structured questionnaires were used to obtain the quantitative data. The questionnaire elicited responses on socio-demographic characteristics, household assets and wealth, perceptions of overweight and obesity as well as stigma of overweight and obesity. A pre-tested interview guide was used to collect the qualitative data in in-depth interviews. In addition, a weighing scale (TANITA, model TBF-300A, TANITA Corporation, USA) and stadiometer (Detecto model, China) were used to collect weight and height data. Weight was collected to the nearest 0.1 kilograms and height was collected to the nearest 0.01 meters. Body Mass index (BMI) was calculated for each survey respondent as a ratio of weight measured in kilograms and a square of the height, in metres. For this study, a person was classified as normal weight, overweight or obese if her BMI is between 18.5–24.9, 25.0–29.9, or >30.0 respectively.

Ethical approval was obtained from the Ghana Health Service Ethical Review Committee (GHS-ER: 16/02/17). Additionally, permission was obtained from the market administration and market queen mothers, before commencement of data collection.

Analysis

The Pearson Chi-square statistic was used to test association between weight status (BMI) and socio-demographic characteristics. Ordered logistic regression model was used to determine the effect of the demographic factors on respondents' body weight (BMI). All statistical analyses were tested at $p<0.05$ significance level. Descriptive statistics including frequencies were used to describe the socio-demographic characteristics. Cross tabulations were used to describe relationships between respondent perceptions and weight status.

The in-depth interviews elicited information on perceptions and experiences of stigma in relation to overweight and obesity. All interviews were audio-recorded in addition to hand written notes. The recorded in-depth interviews were transcribed verbatim after which they were evaluated and analysed using thematic analysis approach by two post graduate persons trained in qualitative data analysis. Firstly, codes were generated using the study objectives, interview guides, and recurring findings in the transcripts. Similar sub-codes were merged to form bigger codes and subsequently themes. Employing manual thematic analysis, a matrix of the themes was created in Microsoft Word and quotes were categorized under the various themes.

Results

Socio-Demographic characteristics of women vendors in Kaneshie market

A 100% response rate was achieved during data collection, thus a total of 266 market women in Kaneshie market participated in the study. The respondents were aged between 18 and 67 years; average (\pm Standard deviation) age was 12.3years (Table 1). Almost a third of the women indicated Junior High School Form 3 or Middle School Leaving Certificate Form 4 as their highest educational level completed. About a quarter (26.3%) had completed Senior High or vocational School, and 6.4% had completed university. About half (54.1%) of respondents were married and 21.4% were divorced, separated, or widowed. Almost half of respondents were food vendors (44%). About 42% of the respondents were household heads. Respondents had reported having an average of 3 (\pm 1.8) children each. The average BMI of the study respondents was approximately 31.1 (\pm 5.8) kg/m². More than half were overweight ($25 \leq \text{BMI} < 30 \text{ kg/m}^2$), 27.1% had normal weight ($\text{BMI} < 25 \text{ kg/m}^2$); and 16.5% were obese ($\text{BMI} \geq 30 \text{ kg/m}^2$).

Table 1: Socio-demographic characteristics of women vendors in Kaneshie market

Association between demographic characteristics of market women at Kaneshie and their body mass index

Using Pearson Chi-square test of association, respondent age, marital status, educational level, ethnicity and parity were significantly associated with BMI status ($p < 0.05$). From the multiple (adjusted) ordered logistic regression model, age, ethnicity, marital status and parity were the significant demographic characteristics predictive of weight status of respondents ($p < 0.05$). Respondents within age groups 36 -55 years and 56 – 67 years were more than four times likely to have a higher weight status compared those within 18 – 35 years age group. Ga-Adangbe, Ewe, and Northern Ghana ethnic groups were likely to have bigger body size compared to Akans. Single women had about four times less odds of having a higher weight status compared to those who were either married, or divorced/separated/widowed, or cohabiting. Educational status was not significantly associated with BMI status in adjusted model.

Table 2: Association between demographic characteristics of market women at Kaneshie and body weight

Normal ($BMI < 25 \text{ kg/m}^2$), Overweight ($25 \text{ kg/m}^2 \leq BMI < 30 \text{ kg/m}^2$), Obese ($BMI \geq 30 \text{ kg/m}^2$), (%) represents row percentage, aOR: Adjusted Odds Ratio, p-value notation: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, †: p-value was estimated from the one-way ANOVA test.. ref: reference category. SD: Standard deviation, , JHS: Junior High School, SHS: Senior High School

Women's Perception of weight status

Misperception about body weight was observed commonly among the respondents. Out of the 266 respondents, 56.39% (150) were actually obese, yet 56.45% (105) of them perceived themselves to be overweight and 14.29 (5) of normal weight. Majority (60%) of the women who thought they had normal weight wanted to gain some more weight while 59.1% of those who thought they were overweight wanted to maintain it. Conversely, 73.3% of women who perceived themselves as obese wanted to lose some weight.

One-third (34.3%) of the respondents with a perception of normal weight wanted to gain or maintain their weight in order to be socially accepted. Those who thought they were overweight or obese and wanted to maintain or lose weight were motivated by the need to have better health. More than half (54.3%) of the women with perceived normal weight indicated that most people are comfortable with and accept their current weight status. On the other hand, most (62.2 %) of the obese women indicated that other people consider them as too big.

Table 4: Women's body weight, weight preferences and weight perception by other people

Weight perception

The respondents with normal weight desired to gain some amount of weight. They expressed that desire because they thought it is fashionable to have some body weight which is characterised by a certain body image (shape) so as to look nice when you dress up. Here are some quotes of how this perception was expressed:

"I would like to gain some weight because when you are too slim and you dress it does not look nice on you but when you have some weight but not too fat that is nice"- (IDI 54 year old overweight woman).

"I would like to gain some weight especially get some more buttocks and hips so that when I dress it will look nice like when you wear a straight dress and you have buttocks and hips it looks very nice"- (IDI, A 25 year old normal weighted woman)

Efforts to lose weight

Obese women expressed "desire to lose weight" and recounted actions or measures they have embarked on to lose weight including dieting, aerobic exercise, drinking herbal teas, and starvation.

"I have tried to drink lime the whole day, go jogging and after a week or two you are tired and you stop" (IDI 25 year old obese lady)

"I am working on my diet seriously. I don't eat certain things and I don't eat late too and sometimes I go to jogging but not regularly because of my children so in a month I go like twice" (38 year old obese woman)

"I have that machine for exercising like the bicycle but it is stationary, so I use that and I drink this Chinese herbal tea that is used for slimming".- (IDI, 40 years old obese woman)

Overweight and obesity are a consequence of individual choice and lifestyle

Attribution theory posits that overweight and obesity is a consequence of individual lifestyles and choices. Therefore, overweight and obese persons are not only blamed for their stature but also expected to make efforts to control it. Narratives from the qualitative data reveal such perceptions. Obese and overweight respondents recounted situations where family members, friends or strangers told them they were too fat and should do something to lose some weight. They explained that these comments are mostly passed in an irritating manner. Below are quotes below from obese and overweight persons;

"Most people here (Kaneshie Market) pass comments like you are fat ooo, why are you not jogging or doing exercise. Some people say it in an annoying way to the extent that you get angry and ask them to mind their own business, it is not my wish to be this big"- (IDI, 25 year old obese woman).

"I will say with my father. When I am eating he always says you are so fat and you are still eating these kinds of foods. You need to check your diet because you are becoming overweight; sometimes he looks at you and say eei look at your arms. Your arm is becoming big, you need to check it or see a dietician. And I will say, 'ah this is how I am, my weight is always the same. He will say no you've changed. Now you are becoming too fat. It makes me feel bad"- (IDI, 36 year old obese woman).

The perceived causes of weight gain also fuels the ideology of blaming individuals for their overweight or obese status. This is because respondents with normal weight perceive overweight and obesity to be caused by excessive eating. They stated that that overweight/obese individuals lack self-discipline with regards to their eating habit, therefore they eat big amounts of food as well fatty diets. Although some, attributed weight gain to hereditary origin, they were of the opinion that if you don't catalyse it by excessive eating, it will not manifest.

"We have to blame them because they are the ones eating the food and not exercising. I think that obesity is mainly due to eating too much food or fatty food and not exercising because you can't say it is a family thing because you have to eat to get fat"- (IDI, 56 year old normal weight).

"I don't know much but what I know is that obesity is caused by eating too much fats and oils"- (IDI, 19 year old normal weight woman)

I will blame them (overweight/obese persons) because there is this woman in my church she is so fat and whenever we have an occasion that involves food you will see her bring two plates and she will take maybe banku and rice and eat all. So then I saw that her fatness is due to excessive eating so for some people it is the way they eat that makes them fat. (IDI, 38 year old normal weight woman)

Derogatory name callings

Derogatory name calling is a common stigmatizing attitude that overweight and obese people experience. All the study respondents were aware of the names used to call overweight/obese persons. About 65% of respondents indicated that overweight/obese persons were not comfortable with those names. Derogatory name calling was also one of the themes that emerged as a stigmatizing attitude from the qualitative data. Women with normal weight mentioned different names by which they call overweight and obese persons and this was confirmed by obese respondents as they also mentioned names they are tagged with. These derogatory names were used to describe how they look or tease and laugh at them. Some of the respondents of normal weight in the qualitative research explained how uncomfortable these name calling was for the overweight and obese persons. Overweight and obese persons expressed dislike, shame and anger when they are called those names.

“we call such people obolo or bosa (a big marine fish), such people have different names, others also describe them as obigi and when they call them such names we see that they are not happy and it bothers them”- (IDI, 38 year old normal weight woman).

“they say obolo, okesie, big size and stuff like that, it is annoying but sometimes you just have to ignore them and go your way”- (IDI, 25 year old obese woman).

Challenges of using public spaces and public transport

About 52% of the respondents surveyed were of the view that overweight/obese persons should not be treated differently when they use public transport, while 44 % were of the view that they should be treated differently. This different treatment encompassed making them uncomfortable as well as being aware of the inconvenience their weight causes for other passengers who sit beside them when they use public transport. Findings from the in-depth interview revealed that overweight/obese persons were discriminated against in public transport. Respondents with normal weight indicated that everyone pays the same fare hence each individual is entitled to a whole seat but overweight and obese persons occupy other people's seat creating inconveniences. Usually, passengers avoid sitting beside overweight/obese persons in public transport or when they do, make comments about how they have occupied all the space with their big bodies.

“When they sit in the public transport like the trotro people pass comments like you are too big you have taken up all the space. There is this woman in my neighborhood, she is very fat, so when we sit in the trotro and she is coming to board the car nobody wants her to sit by her because she will take up all the space and

the entire seat carries four people but when she sits she takes up the space of two people so then the slim person there will be squeezed so as for me when she is coming to board the car, I don't make her sit by me"- (IDI, 56 year old normal weight woman)

"People usually pass comments like woman you are too big you cannot sit here, go and get a taxi. The other day I went to board this commercial bus and this very fat woman came to sit inside, in fact she went to sit in first because she knows that when she goes later people will not want her to sit by them so when the other passengers started teasing her saying she is too big and has occupied the space meant for two people and for that reason she should pay for two, but she didn't mind them"- (IDI, 30 year old normal weight woman).

Overweight and obese respondents in the IDIs recounted instances where they were treated badly in commercial vehicles because of their body size and weight as quoted below:

"Because of my weight I am large so definitely I will come in someone's seat. The seats are for individuals but sometimes I take more than my own seat so definitely someone will complain. So before the person even comes to sit the person will look at you and check other seats whether there are other spaces. If there is no space that's when the person comes to sit beside you. But if there is space you see that they all bypass you and go to the next seat but if there is no space when they are coming to sit beside you they start murmuring or saying certain things that you have to push because you have taken part of my seat"- (IDI, 36 year old obese woman).

"sometimes it is annoying because you will be sitting beside a slim person and the person knows you are fat but the person will open the legs because the person is also paying and entitled to a full sit so you have to squeeze and you know the seat is four and there is some small space left you hear them saying that as for me I cannot sit there the space is small I can't sit. On one or two occasions I have experienced this and the mate had to go like that and leave the seat because no one was willing to sit there"- (IDI, 25 year old obese woman).

Denial of jobs due to overweight/obese

Overweight and obesity were documented as barriers to acquiring certain jobs. Some respondents recounted how they were denied some job opportunities because of their weight and body size. Instances were cited of how the media prefers people with slim personality as opposed to overweight or obese persons. One respondent narrated how difficult it has been for her to get a white collar job after graduating from the university because of her weight and therefore had to settle for selling with her mother in the market.

"My friend and I applied for a job in one of the big hotels as a front desk receptionist, my friend got the job but I didn't get it and the reason they gave was that the job required smart people. Even though I told them I was smart, I think they did not believe me because people usually say fat people are not smart. So now I am here selling with my mother" (IDI, a 25 year old obese woman).

"because of my weight I was supposed to run a TV show in which I started but along the line when I was looking for sponsorship I was told because of my size they can't put in their money because it wouldn't fetch

money so the best thing for me to do is to go on a diet so that I will be very slim and good looking meaning because of my weight I wasn't good looking. Those were some of the reasons why I left the media, even now when you watch TV, even news, most of the presenters are not overweight. There are some workplaces if you have too much weight they will not give it to you because they want smart people" (IDI, a 36 year old obese woman)

Withdrawal from social activities due to stigmatizing attitudes

Feelings of shame, anger, and self-pity are some of the sentiments obese women expressed when they are subjected to discriminatory or stigmatizing behaviors. As a result, some indicated that they shy away from some social gatherings like pool parties and going to church because of the comments and attention they will attract, due to their weight status. Overweight and obese persons described how embarrassing and annoying it is when they are stared at or talked about in the streets.

"Sometimes you will be walking in town and you will see that everybody's attention is on you and sometimes you are wondering what they are looking at only to find out that they are looking at you and you ask yourself why me? Or when you are walking with your friends and they pass comments about your weight, it is not nice, it is embarrassing."- (IDI, a 36 year old obese woman).

"yes, sometimes when you go to some places the way they will look at you as if you are not normal even at church when you are about to sit down they will be saying things like you will break the chair ooo, it hurts but what can you do"- (IDI, 38 year old obese woman)

"I will never go for a pool party because of wearing the bikini. People will say , 'this fat girl in bikini' or maybe there is a social gathering and you have to sit on small chairs and when you go there they will pass comments like; are you coming to sit on these chairs? You will break it and so because of that you will say let not go anywhere let me be at home because I will have my peace" (IDI, 38 year old obese woman).

Discussion

Health-related stigma is associated with imposing suffering on people who are subjected to it (15). Unfortunately, stigma and discrimination toward obese persons are ubiquitous, making it a universal public health concern (1). Perceptions that overweight and obese persons are lazy, lack self-control and are responsible for their weight further exacerbates the problem of stigma and discrimination. This study investigated the perceptions and stigmatization associated with overweight and obesity among women of reproductive age living in urban area in Ghana. Findings from the study revealed different forms of expression of stigma including derogatory name calling, discrimination regarding use of public services (including transportation and employment opportunities), exposure to gossiping and being stared at, as well as being blamed for being lazy and eating too much.

To overcome feelings of being stigmatized overweight women use defense mechanisms as a coping measure. For example, women misperceived their weight status. As observed in other studies, obese women were more likely to indicate that they were normal weight. However, they also indicated that people consider them to be overweight. This misconception about body weight could be because the women are in denial of their unhealthy weight, or do not want to be labelled as obese. This finding is not surprising as previous studies have reported women to be more likely to underestimate their body weight (23)(24). Misperceptions of respondents about their weight could hinder them from engaging in healthy behaviors thereby making them prone to gaining more weight. This is because studies have shown that overweight persons who perceive their true weight status endeavor to lose weight compared to those who misperceive their weight (25)(26). Most of the obese respondents expressed the desire to lose weight with a few desiring to maintain their weight. However, majority of the overweight women preferred to maintain their weight. Obesity/overweight used to be associated with wealth, beauty and good health in most African countries including Ghana (27)(28), this cultural perception could explain why some respondents preferred to maintain their body weight despite being obese or overweight. Also, obese respondents may be aware of the health implications of their weight, hence their desire to lose weight. Obese and overweight respondents engaged in various activities such as exercising, using medications and even starvation to facilitate weight loss. These means of trying to lose body weight seems to be common as Cheung and colleagues also revealed in their study that obese females are more likely to exercise, limit calorie intake, self-medicate with diet pills, or use purgatives in attempts to lose weight (25). Furthermore, the stigma and discrimination experienced by these women by virtue of their body weight may have influenced their efforts to lose weight in order to fit in or be accepted. However, contrary to our findings, a study conducted in a rural village in South Africa revealed that overweight and obese women were unconcerned about their weight and most of them did not want to lose weight (29).

Normal weight respondents in this study were of the opinion that obese and overweight persons are to blame for their weight as they associated their weight to excessive eating, consumption of fatty foods, physical inactivity. Relatedly, a systematic review by Sikorski and colleagues on the stigma of obesity in the general public and its implications for public health reported that although the public acknowledged the multi causality of obesity to some extent, causes that are within the individual's control like physical inactivity and consumption of fatty foods were named most frequently in population surveys (30). Therefore overweight and obese persons are blamed for their weight and body sizes. In opposition, obese and overweight persons assigned their weight gain to parity and heredity with a similar finding in a study by Gonçalves *et.al.*, where obese adolescents attributed their weight to their heritage (31).

Generally, both overweight/obese and women with normal weight perceived that men preferred slender women to obese or overweight persons. This perception could be due to the proliferation of western culture, where slender women are perceived to be the most attractive. For instance, a study on preferences for female body weight and shape in three European countries showed that men preferred relatively slender women (32). Nonetheless, dissimilar to our findings, a comparative study on female body dissatisfaction and perceptions of the attractive female body in Ghana, the Ukraine, and the United States revealed that Ghanaian men preferred women with heavier than the average female body as opposed to men in the western countries who perceived slender women as more attractive (33).

Weight based name calling is a common stigmatizing attitude overweight and obese persons are subjected to (15). Overweight and obese persons in this study experienced stigma and discrimination in the form of derogatory name callings, denial of jobs, and rude comments about their weight or body size in public spaces. Some of the names used included obolo, obiggie, big size, all of which are offensive. Women of normal weight were the main perpetrators of these name callings, and they claim they do that to create discomfort that will coerce them to lose weight. Although they claim to have good intents for stigmatizing overweight and obese persons, their attitude and behaviour tend to have a negative toll on them. This is because obese/overweight respondents in this study expressed sentiments of sadness, anger and shame when they experience these derogatory name callings.

Stigma and discrimination pervaded all aspects of the lives of obese/overweight persons in this study. While some recounted how they are avoided when they go to church or join public transport, others also narrated instances of being denied jobs because of their weight and body size. Some organization and institutions like the media houses prefer slender women so denial of jobs in the media company as reported by respondents in this study is not surprising. Employers are usually of the opinion that overweight employees are less active and more liable to on the job injuries and illnesses, as well as are less productive (34). Therefore, most obese persons face weight bias and discrimination at every stage of the employment process (35). Flint and colleagues, also reported that employers rated obese candidates as less suitable compared with normal weight candidates (36). Their findings further contribute to evidence that obese people are discriminated against in the hiring process. This goes to buttress the results of Puhl & Brownell who explained that stigmatization and discrimination are experienced in three important areas of living; employment, education, and health care (37).

The stigma and discrimination overweight and obese persons are subjected to have social and psychological effects on them (15). Research has documented that overweight and obese individuals who experience weight stigmatization have higher rates of depression, anxiety, social isolation, and poorer psychological adjustment (15). Our findings also revealed that overweight and obese persons excluded themselves from social gatherings like pool parties and even church activities because of the stigma and discrimination they experience. They expressed sentiments of anger, shame and embarrassment when they are subjected to such treatments. The stigma that these women are subjected to affects their social life as well as their psychological wellbeing.

Conclusion

Whilst overweight and obesity was high among the study population, most of them were likely to underestimate their weight status. Stigma and discrimination was common among the study population as this was used as a means of coercing obese persons to control the weight. These findings bring to light the need to intensify efforts to create awareness on the need to stop stigmatizing obese and overweight persons and encourage them to engage in healthy weight loss activities.

List Of Abbreviations

Body Mass Index - BMI

Ghana Health Service - GHS

Ghana Demographic and Health Survey - GDHS

In –depth Interview - IDI

Junior High School - JHS

Senior High School - SHS

World Health Organization - WHO

Declaration

Ethics approval and consent to participate

Ethical approval was obtained from the Ghana Health Service Ethical Review Committee (GHS-ER: 16/02/17). Written consent was sought from every study respondent who participated in the study.

Consent to publish

Study participants consented to the study findings being disseminated including publishing in scientific and peer review journals. However, this study does not contain any information that can traced to study respondents because individual details, images or videos have not been included.

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contribution

MA designed and conceptualized the study with support from RA. VFD and MA analysed qualitative data, with KA analysing the quantitative data under the supervision of RA. VFD and RA read the draft manuscript and revised it for important intellectual content. All authors read and approved the final manuscript.

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Tables

Table 1: Socio-demographic characteristics of women vendors in Kaneshie market

Characteristics	Frequency	Percentage
Age in years		
18-35	83	31.2
36-55	147	55.3
56-67	36	13.5
Highest educational level		
None	37	13.9
Primary	46	17.3
JHS\Middle school	96	36.1
SHS\Vocational	70	26.3
Tertiary ¹	17	6.4
Ethnicity		
Akan	90	33.8
Ga-adangbe	121	45.5
Ewe	48	18.1
Northerner	7	2.6
Current marital status		
Single	29	10.9
Married	144	75.1
Divorced/Separated/widowed	57	21.4
Cohabiting	36	13.5
Income earning activity		
Food	117	44.0
Personal effects	93	35.0
Utensils /Plastics	30	11.3
Services	26	9.8
Household Head		
Respondent	108	40.6
Spouse	106	39.9
Both	45	16.9
Parent	7	2.6
Parity		
No child	41	15.4
1 - 3	118	44.4
≥ 4	107	40.2
Body Mass index (BMI)		
Normal (BMI<25 kg/m ²)	72	27.1
Overweight (25 kg/m ² ≤ BMI < 30 kg/m ²)	150	56.4
Obese (BMI ≥ 30 kg/m ²)	44	16.5

SD: Standard deviation, BMI: Body Mass Index, JHS: Junior High School, SHS: Senior High School

¹Tertiary =training college, polytechnic, University.

Table 2: Association between demographic characteristics of market women at Kaneshie and body weight

Demographic characteristics	Body Mass Index Status			Chi-square p-value	Adjusted		
	Normal	Overweight	Obese		aOR	95% CI	P-value
Age in years				<0.001***			<0.001***
18-35	26(31.33)	29(34.94)	28(33.73)		ref		
36-55	15(10.2)	33(22.45)	99(67.35)		4.28	1.98 - 9.24	
56-67	3(8.33)	10(27.78)	23(63.89)		5.09	1.71 - 10.14	
Educational level				0.012*			0.611
None	2(5.41)	12(32.43)	23(62.16)		ref		
Primary	6(13.04)	9(19.57)	31(67.39)		1.2	0.46 - 3.12	
JHS/Form4	14(14.58)	22(22.92)	60(62.5)		0.89	0.39 - 2.03	
SHS/Vocational	20(28.57)	21(30)	29(41.43)		0.59	0.23 - 1.50	
Tertiary	2(11.76)	8(47.06)	7(41.18)		0.87	0.25 - 3.02	
Ethnicity				0.027*			0.024*
Akan	21(23.33)	28(31.11)	41(45.56)		ref		
Ga-dangbe	12(9.92)	30(24.79)	79(65.29)		2.13	1.18 - 3.84	
Ewe	11(22.92)	13(27.08)	24(50)		1.31	0.62 - 2.78	
Northerner	0(0)	1(14.29)	6(85.71)		8.11	1.04 - 15.98	
Marital status				<0.001***			0.004**
Single	17(58.62)	6(20.69)	6(20.69)		ref		
Married	16(11.11)	42(29.17)	86(59.72)		6.87	2.06 - 15.89	
Divorced/Separated/widow	6(10.53)	10(17.54)	41(71.93)		8.59	3.01 - 20.7	
Cohabiting	5(13.89)	14(38.89)	17(47.22)		4.41	1.28 - 11.26	
Household Head				0.120			0.221
Yourself	19(17.59)	31(28.7)	58(53.7)		ref		
Spouse	14(13.21)	31(29.25)	61(57.55)		1.82	0.89 - 3.74	
Both	8(17.78)	7(15.56)	30(66.67)		2.47	1.02 - 5.95	
Parent	3(42.86)	3(42.86)	1(14.29)		1.59	0.28 - 9.18	
Trade				0.823			0.221
Food	23(19.66)	31(26.5)	63(53.85)		ref		
Personal effects	12(12.9)	28(30.11)	53(56.99)		0.9	0.49 - 1.64	
Utensils/Plastics	5(16.67)	8(26.67)	17(56.67)		1.16	0.5 - 2.72	
Services	4(15.38)	5(19.23)	17(65.38)		2.93	0.98 - 8.71	

BMI=body mass index

Normal (BMI<25 kg/m²), Overweight (25 kg/m² ≤ BMI < 30 kg/m²), Obese (BMI ≥ 30 kg/m²), (%) represents row percentage, aOR: Adjusted Odds Ratio, p-value notation: ***p<0.001, **p<0.01, *p<0.05, †:p-value was estimated from the one-way ANOVA test.. ref: reference category. SD: Standard deviation, , JHS: Junior High School, SHS: Senior High School

[No table 3 was included in the submission]

Table 4: Women's body weight, weight preferences and weight perception by other people

Responses	Perceived body weight			
	Normal (%) N=35	Over weight (%) N=186	Obese (%) N=45	Total (%) N=266
Weight groups of respondents				
<i>Normal (BMI<25 kg/m²)</i>	20(57.14)	24(12.9)	0(0)	44(16.54)
<i>Overweight (25≥BMI<30 kg/m²)</i>	10(28.57)	57(30.65)	5(11.11)	72(27.07)
<i>Obese (BMI≥30 kg/m²)</i>	5(14.29)	105(56.45)	40(88.89)	150(56.39)
Body weight preference				
<i>Desire to Lose weight</i>	4(11.43)	64(34.41)	33(73.33)	101(37.97)
<i>Desire to Gain weight</i>	21(60)	12(6.45)	1(2.22)	34(12.78)
<i>Wants to maintain</i>	10(28.57)	110(59.14)	11(24.44)	131(49.25)
Reasons for weight preference				
<i>Societal acceptance</i>	12(34.29)	47(25.41)	14(32.56)	73(27.76)
<i>Health consideration</i>	10(28.57)	61(32.97)	19(44.19)	90(34.22)
<i>Self- satisfaction and confidence</i>	9(25.71)	51(27.57)	8(18.6)	68(25.86)
<i>Meet media's ideal look description</i>	4(11.43)	26(14.05)	2(4.65)	32(12.17)
People's view about your body weight				
<i>Acceptable/comfortable</i>	19(54.29)	127(69.78)	17(37.78)	163(62.21)
<i>Too fat</i>	2(5.71)	44(24.18)	28(62.22)	74(28.24)
<i>Too slim</i>	14(40)	11(6.04)	0(0)	25(9.54)