

RESEARCH ARTICLE

Exploring the Knowledge Levels of Bankers on Health Risks of Overweight and Obesity: A Cross-Sectional Study, Ghana

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Funding: No specific funding was received for this work.

Potential competing interests: No potential competing interests to declare.

Abstract

Background: Overweight and obesity are becoming serious public health threats worldwide. Weight gain is skyrocketing across the globe due to the growing economy, fast food expansion and a shift toward more sedentary living. However, most people lack knowledge regarding the risks associated with overweight and obesity.

Aim: This study aimed to explore the effects of the knowledge level of bankers in the Ho Municipality on the health risks associated with overweight and obesity.

Materials and Methods: A cross-sectional study with a quantitative method was employed. The study spanned from September 7, 2018, to April 25, 2019. A self-administered questionnaire and convenience sampling technique were used to obtain data. The data were analyzed via IBM SPSS Statistics 21 Developer, and the results presented in statistical tables and graphs.

Results: Of the 136 participants investigated, 67 (49.3%) were between 31 and 40 years of age. Two participants (1.5%) were underweight, 49 (36.0%) had a normal weight, 43 (31.6%) were overweight, and 42 (30.9%) were obese. The study revealed that female bankers were prone to overweight (37.78%), whereas males were prone to obesity (56.52%). The participants generally had low knowledge and awareness of the health risks of overweight and obesity.

Conclusions: Most bankers in the Ho Municipality were overweight and obese due to insufficient knowledge and low awareness of the risks associated with overweight and obesity. Public education and awareness are urgently needed to stem the tide.

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Keywords: Knowledge; Overweight; Obesity; Body Mass Index; Health Risks.

Introduction

The prevalence of overweight and obesity is currently a global problem and poses a major public health challenge. The World Health Organization (WHO) defines overweight and obesity as a body mass index (BMI) greater than or equal to 25.0 kg/m² and a BMI greater than or equal to 30.0 kg/m², respectively. Globally, the rates of overweight and obesity are increasing among adults and children, and the problem is assuming an epidemic proportion. The World Health Organization 2020 updated report shows that the prevalence of obesity worldwide has increased tremendously. Worldwide, obesity has nearly tripled since 1975, and in 2016, more than 1.9 billion adults 18 years and above were overweight [1]. The 2022 WHO report on overweight and obesity revealed that 1 in 8 people in the world were living with obesity, and that worldwide adult obesity had more than doubled since 1990, while adolescent obesity had quadrupled [2]. The report further revealed that 1.5 billion adults (18 years and above) in 2022 were overweight, of which 890 million were living with obesity.

It is estimated that almost one-third of the adult population in the United States was obese, and healthcare expenditures for obesity reached nearly US \$75 billion in 2003 [3]. A study carried out by the National Institute of Health and Nutrition Examination Surveys (NHANES) in the United States between 2013 and 2014 and between 2014 and 2016 revealed that more than two-thirds (2 in 3) of adults were overweight and obese, that more than one-third (1 in 3) of the children were overweight and obese, and that more than one in thirteen (1 in 13) of the adults were considered extremely obese [4][5][6]. The situation in Europe paints the same gloomy picture and presents a worrying phenomenon.

The World Health Organization report indicates that in the WHO European Region, the age-standardized prevalence of overweight has reached 58.3% among adult males and 51.2% among adult females [7]. To provide current data on the prevalence of overweight and obesity among adults from 20 European countries [8], 7, 2014, data from the European Social Survey involving 34,814 participants, 16,482 of whom were men, were analyzed. The results revealed that only 2% of the participants were underweight and that 44.9% had a normal weight. Overweight and obesity accounted for 53.1% of the cases. They reported that more men were overweight than women were (44.7% vs. 30.5%). Older adults were found to be significantly more overweight (42.4%) and obese (20.9%) than middle-aged and younger adults were. The highest prevalence of overweight was in the Czech Republic (45.2%), Hungary (43.7%) and Lithuania (41.7%). For obesity, Slovenia (20.8%), Estonia (19.7%) and the United Kingdom (19.2%) were the countries with the highest prevalence rates.

Concomitant with this development is increasing childhood overweight and obesity, which present serious public health challenges. Studies indicate that overweight and obesity in childhood are associated with a greater probability of obesity

in adulthood and may have serious consequences for this vulnerable age group^[9]. It is estimated that by 2030, more than half of the population of Europe will be obese, according to the World Health Organization's projections.

Admittedly, obesity is rapidly establishing itself as a public health menace in several developing countries, with urban communities having a higher prevalence, particularly among those of higher socioeconomic status^[10]. A previous study^[11] reported that overweight and obesity rates are increasing in Africa, and epidemic proportions may be assumed in the near future. The available literature indicates that the number of overweight and obese children has more than doubled since 1990. In South Africa, overweight and obesity in children and adolescents are increasing, although the prevalence of overweight and obesity varies with age, sex and population^[12]. In Nigeria,^[13] reported that the prevalence of overweight and obese individuals was high. A review by these researchers in Nigeria between 2001 and 2012 revealed that the prevalence of overweight individuals ranged from 20.3–35.1%, whereas the prevalence of obesity ranged from 8.1–22.2%. Analysis of the prevalence of overweight and obesity among women in twenty-four African countries from 1993–2014 revealed increases in all 24 countries.

In West Africa, the rate of obesity is approximately 10%, and it is 3 times higher among women than men. In South Africa, one in three men and one in two women are either overweight or obese, and these statistics are close to the figures for the United States. In Morocco, the rate of obesity is estimated to be 40% in the general population, whereas it is approximately 12% in Kenya. The prevalence rates of obesity in selected African countries were 13%, 14% and 15% in Sudan, Egypt and Libya (North Africa), 15%, 10% and 9% in Ghana, Senegal and Niger (West Africa), and 13%, 12% and 14% in Kenya, Uganda and Tanzania in East Africa, respectively^[14].

In Ghana, overweight almost doubles, whereas obesity triples between these periods^[15]. Most studies describe overweight and obesity as epidemic conditions. Some researchers^[16] reported that between 1993 and 2014, the mean BMI among Ghanaian women increased by 3.0 kg/m² and that by 2030, the average Ghanaian woman will be overweight and have a BMI of 27.0 kg/m². Recent statistics from the WHO Global InfoBase^{[17][18]} documented the prevalence of overweight and obesity in 46 African countries and indicated that Ghana ranked 10th and 26th, respectively, with specific overweight prevalence rates of 35.6% and 32.5%, respectively, among men and women. A review^[19] reported an increasing prevalence of overweight and obesity among older Ghanaian adults from 2007–2015, drawing evidence from the WHO–SAGE Waves 1 & 2. The report cited the prevalence of overweight in 2007/2008 as 19.6% and that from 2014/2015 as 24.5%, whereas the prevalence of obesity within the period was 10.2% and 15.0%, respectively. The results indicated that obesity was greater in 2014/2015 than in 2007/2008 and that more than half of the population had central adiposity (2007/2008 = 57.7% and 2014/2015 = 66.9%) in both study periods. While the prevalence of overweight increased in both sexes, the prevalence of obesity was 16% lower in males and 55% higher in females, comparing 2007/2008 to 2014/2015.

Additionally, a recent study^[20] reported that the prevalence of overweight and obesity among Ghanaian adults was 52.8%. A systematic review and meta-analysis of forty-three (43) studies involving a total population of 48,966 across ten (10) regions of Ghana^[21] reported a high and rising incidence of overweight and obesity among Ghanaian adults of approximately 43% and described the situation as epidemic. They reported that the national prevalence rates of

overweight and obesity were 25.4% and 17.1%, respectively. Furthermore, the prevalence of overweight among 135 practicing nurses and midwives in the Hohoe municipality of Ghana was 31.8% (6.7% males and 25.1% females), whereas 28.9% comprising females were obese^[22].

Overweight and obesity are associated with a greater risk of cancer, disability and premature death due to type 2 diabetes mellitus (T2DM) and cardiovascular diseases such as hypertension, stroke and coronary heart disease. Research indicates that overweight and obesity are the fifth leading risk factors for death worldwide. In recent decades, the number of deaths from noncommunicable diseases in developing countries has exceeded that reported in developed countries. Indeed, the estimated socioeconomic cost of overweight and obesity is alarming^{[23][24][25][26][3]}. The ongoing nutritional transition in Africa is likely to pose a major public health challenge, with a significant proportion of adults becoming overweight^[27]. The available literature indicates that the prevalence of overweight and obesity is increasing in various populations and is becoming an enormous burden among occupational/professional groups that are perceived as sedentary. The physical inactivity and increased sedentary nature of daily activities pose serious threats to the body, as they increase the risk of overweight and obesity, which is harmful to normal body function and job productivity^{[28][22]}.

Bankers represent a category of professionals whose occupation is sedentary. With the increasing number of bankers in the Ho Municipality, we hypothesized that these bankers may not have adequate knowledge of the health risks associated with overweight and obesity. Therefore, most of them may not take vital steps to either prevent themselves from becoming overweight or reduce their overweight or obesity burden. This study therefore seeks to explore the effects of the knowledge levels of bankers in the Ho Municipality on the health risks associated with overweight and obesity.

Objective of the Study

This study aimed to determine the effects of knowledge levels of bankers in the Ho Municipality on health risks associated with overweight and obesity.

Specific Objectives

1. To estimate the prevalence of overweight and obesity among bankers in the Ho Municipality.
2. To determine the level of awareness of overweight and obesity among bankers.
3. To determine the health risks associated with overweight and obesity among bankers in the Ho Municipality.

Significance of the Study

The outcome of the study would serve as a valuable source of information to educate the general public, especially bankers and other sedentary workers, on the risks associated with overweight and obesity and ginger management to implement effective interventions that would prevent overweight and obesity among sedentary workers. This study would also contribute to existing knowledge on overweight and obesity and offer an opportunity to understand the major factors contributing to their prevalence.

Materials and Methods

Study Design

A cross-sectional study design was used to explore the effects of bankers' knowledge levels on health risks associated with overweight and obesity. Structured questionnaires were used.

Study Setting

The study was conducted at nine banks in the Ho Municipality, namely, Stanbic Bank, Société Generale, Ghana, Fidelity Bank, Ghana Commercial Bank, Access Bank, Agricultural Development Bank, Unity Rural Bank, National Investment Bank and Zenith Bank. The Ho Municipality is located in the middle zone of the Volta region of Ghana. It is made up of four sub-Municipalities—Ho Shia, Kpedze Vane, Abutia and Tsito. It is bordered on the North by Hohoe Municipality, west by Asuogyaman District, East and Southeast by Adaklu-Anyigbe District, Northwest by South Dayi District and Northeast by the Republic of Togo. It covers an estimated area of approximately 2,564 square kilometers with an estimated population of 160,493. Twenty-one-point four percent (21.4%) of the employed population are farmers; twenty-six-point eight (26.8%) engage in service and sales; twenty-two-point-six percent (22.6%) are engaged in craft and related trade; and one-point-five percent (1.5%) are engaged as managers, professionals and technicians. Ho doubles as the municipal capital and regional capital^[29].

The Stanbic Bank is adjacent to the MTN office on the right side along the road to the Ho Market with Société General Ghana, in front of Bayport Financial Services, but next to the Stanbic Bank, which is also opposite to the Unity Rural Bank on the left side of the road to the Ho Market. The Ghana Commercial Bank is next to the Agricultural Development Bank (ADB) on the right side along the road to the Ho Market, whereas the Fidelity Bank is opposite to the Ghana Commercial Bank on the left side of the road to the Ho Market. The National Investment Bank is three buildings next to the Ghana Commercial Bank on the right side along the Ho Market Road, whereas the Access Bank is on the left side of the road to the market just opposite to National Investment Bank. All these banks are located at the Civic Centre. The numbers of bankers in each bank are as follows: Stanbic Bank, 15; Société Generale, Ghana, 6; Fidelity Bank, 13; Ghana Commercial Bank, 34 (all three branches in Ho); Access Bank, 11; Agricultural Development Bank, 12; Unity Rural Bank, 17 (the two branches in Ho); National Investment Bank, 22; and Zenith Bank, 8.

Population, sampling and sample size

One hundred and thirty-eight (138) bankers formed the population, while 136 participants formed the sample size. The participants were selected from the nine banks mentioned above.

Inclusion and Exclusion Criteria

The study included bankers from the nine banks mentioned above in the Ho Municipality who volunteered to participate. It

excluded bankers outside the Ho Municipality. Female bankers who were pregnant at the time of the study were excluded because their actual weight could not be accurately determined. Finally, bankers who met the inclusion criteria above and were not willing to participate were exempted.

Instrument/Tools

Questionnaires were used to collect the data. The items of the questionnaire were divided into four (4) sections: Section one, demographic data; Section two, awareness of overweight and obesity; Section three, knowledge levels of health risks associated with overweight and obesity; and Section four, anthropometric measurements, where the participants' weight and height were measured.

Operational definitions of terms

Awareness: Awareness simply refers to having some form of information on overweight and obesity that may or may not be comprehensive.

The term “knowledge” refers to the possession of facts, a deep understanding of and familiarity with overweight and obesity and their health risks.

Overweight: $25.0 \text{ kg/m}^2 \leq \text{BMI} < 30.0 \text{ kg/m}^2$

Obesity: $30 \text{ kg/m}^2 \leq \text{BMI}$ ^[1].

Body mass index (BMI): BMI is an index of weight-for-height that is commonly used to classify overweight and obesity in adults. It is defined as a person's mass in kilograms divided by the square of the height in meters (kg/m^2)^[1]. The categories are as follows:

BMI less than 18.5 kg/m^2 : Underweight

$18.5 - 24.9 \text{ kg/m}^2$: Normal weight

$25.0 - 29.9 \text{ kg/m}^2$: overweight

$30.0 - 34.9 \text{ kg/m}^2$: Clinically obese

$35.0 - 40.0 \text{ kg/m}^2$: Extremely obese

Validity and Reliability

The content validity of the instrument was established by examining and cancelling some of the items that were ambiguous and introducing more appropriate items. This was done to ensure that the assessment tools produced stable and consistent results.

Pilot Study

A pilot study was conducted at three banks—GCB, Avenor Rural Bank and Unity Rural Bank at Dzodze—on February 20, 2019. Three bankers from GCB, four from Avenor Rural Bank and three from Unity Rural Bank participated in the pilot study.

Data collection procedure

Data collection lasted for one month, starting with the access bank on February 22, 2019, and ending with the NIB on March 22, 2019. Questionnaires were employed to collect the data. Anthropometric instruments—a stadiometer and a weighing scale—were used to measure participants' mass and height to determine their BMI. Each subject was asked to remove his/her footwear and stand his/her feet together and arms at the sides. The subjects stood with their heel, buttocks and upper back against the straight edge in a completely upright position. Height was measured in centimeters and expressed in meters. Data were collected between 7 am and 9 am and then between 4:30 pm and 6:30 pm.

Data Analysis

The raw data were entered into a database via Microsoft Excel 2016. IBM SPSS Statistics V21 was used to analyze the data. Data cleaning and validation were performed to ensure data quality before analysis. The main statistical tools used in analyzing and answering the research questions were observed frequencies, percentages and correlations. The data were scrutinized to eliminate all possible errors. Frequencies were calculated for all the variables to determine their distributions and ranges. Age, sex, educational level, marital status, exercise, eating habits, job position, work experience and duration of work hours were categorized as independent variables. Knowledge of the health risks of overweight and obesity (BMI) was the main outcome of interest (dependent variable) in the study. Measures of central tendency, i.e., means and standard deviations, were computed for continuous variables. The prevalence rates of overweight and obesity (BMI) are expressed as percentages at 95% confidence intervals. The associations between knowledge of the risks of overweight and obesity and each of the independent variables were assessed via Pearson's chi-square test at the 5% significance level, whereas Cramer's V test was used to ascertain the extent of the associations. Ordinary least squares (OLS) was employed to estimate the determinants of knowledge of the health risks of overweight and obesity. Relationships between selected independent variables and BMI were analyzed to establish associations between the dependent and independent variables of interest.

Definition and Measure of Variables

Dependent Variable: This is the main variable of interest in a study. In the present study, the dependent variable was knowledge of the health risks of overweight and obesity. It is a continuous variable and was constructed via principal component analysis (PCA). Before the composite index for knowledge was constructed, Cronbach's alpha analysis was performed, and a Cronbach's alpha of 0.81 was obtained. In constructing the knowledge variable through PCA, all variables whose KMO was less than or equal to 0.5 were rejected. To ascertain sampling adequacy, we subjected the

data to the Kaiser–Meyer–Olkin (KMO) test to obtain a value of 0.7939, indicating the usefulness of the data for factor analysis.

Independent Variable: This is a variable that a researcher controls to determine its effect on the dependent variable. In this study, the independent variables were age, marital status, physical activity, eating habits, job position and educational level. We investigated the extent to which each of these variables affected the knowledge level of the bankers on the risks associated with overweight and obesity.

Results

We present the results of the study in **Table 1** below. These include the sociodemographic characteristics of the participants, the prevalence of overweight and obesity, their level of awareness of overweight and obesity and their knowledge of the health risks of overweight and obesity.

Table 1. Association between individual characteristics and BMI					
Variable	Underweight	Normal	Overweight	Obese	Inferential statistics
Age					
20-30yrs	3.85	50.00	26.92	19.23	$\chi^2 = 16.27$ P = 0.001 Cramer's V = 0.1997
31-40yrs	0.00	22.39	37.31	40.30	
41-50yrs	0.00	33.33	33.33	33.33	
51-60yrs	0.00	50.00	12.50	37.50	
Gender					
Male	4.35	19.57	19.57	56.52	$\chi^2 = 25.61$ P = 0.000 Cramer's V = 0.434
Female	0.00	43.33	37.78	18.89	
Education					
At most Secondary	0.00	66.67	33.33	0.00	$\chi^2 = 1.8734$ P = 0.590 Cramer's V = 0.117
Tertiary	1.50	34.59	31.58	32.33	
Marital status					
Married	0.00	26.47	38.24	35.29	$\chi^2 = 10.82$ P = 0.288 Cramer's V = 0.162
Single	3.17	44.44	26.98	25.40	
Divorced	0.00	33.33	0.00	66.67	
Widow	0.00	50.00	0.00	50.00	
Job position					

Manager	0.00	26.67	33.33	40.00	$\chi^2 = 2.0524$ P = 0.015 Cramer's V = 0.087
Cashier	2.27	34.09	36.36	27.27	
Other	1.30	37.66	28.57	32.47	
Experience					
One year	8.33	37.5	37.50	16.67	$\chi^2 = 17.3141$ P = 0.008 Cramer's V = 0.252
2-5 years	0.00	43.4	32.08	24.53	
Above five years	0.00	27.12	28.81	44.07	
Duration of hours					
4-7 hours	0.00	0.00	66.67	33.33	$\chi^2 = 3.08$ P = 0.000 Cramer's V = 0.1057
8-11 hours.	1.56	36.72	30.47	31.25	
12 hours and above	0.00	20.00	40.00	40.00	
Eating habit					
Eating in-between meals	2.41	33.73	37.35	26.51	$\chi^2 = 5.39$ P = 0.000 Cramer's V = 0.199
No eating between meals	0.00	37.74	22.64	39.62	
Physical activity					
Exercise	1.69	36.44	32.20	29.66	$\chi^2 = 1.820$ P = 0.000 Cramer's V = 0.116
No exercise	0.00	27.78	27.78	44.44	

Sociodemographic characteristics of the participants

The sociodemographic characteristics of the participants indicate that the number of male participants was almost twice that of females; i.e., 90 males (66.2%) compared with 46 females (38.2%). There was a significant difference between the mean ages of the male and female participants ($p < 0.000$). On average, the males were older than the females.

Prevalence of overweight and obesity among the participants

The prevalence of combined overweight and obesity among the male participants was 76.09% (19.57%; 56.52%), whereas that among the female participants was 56.67% (37.57%; 18.89%). The prevalence of obesity was high among males (56.52%), whereas the prevalence of overweight was high among females (37.78%). The rates of overweight and obesity were highest among bankers aged 31–40 years (77.61%) and lowest among those aged 20–30 years (46.15%). Hence, age and sex were associated with overweight and obesity. Overweight and obesity among bankers also

manifested strongly in marital status. The rates of overweight and obesity were very high among the married bankers (38.24%; 35.29%) but low among the single bankers (26.98%; 25.40%).

Job Positions and Work Experience of the Participants

Statistical analysis revealed that managers had the most work experience, followed by cashiers, whereas the “other” category of bankers had the least work experience (**Figure 1**). We found that work experience and the number of hours spent at work had significant effects on overweight and obesity.

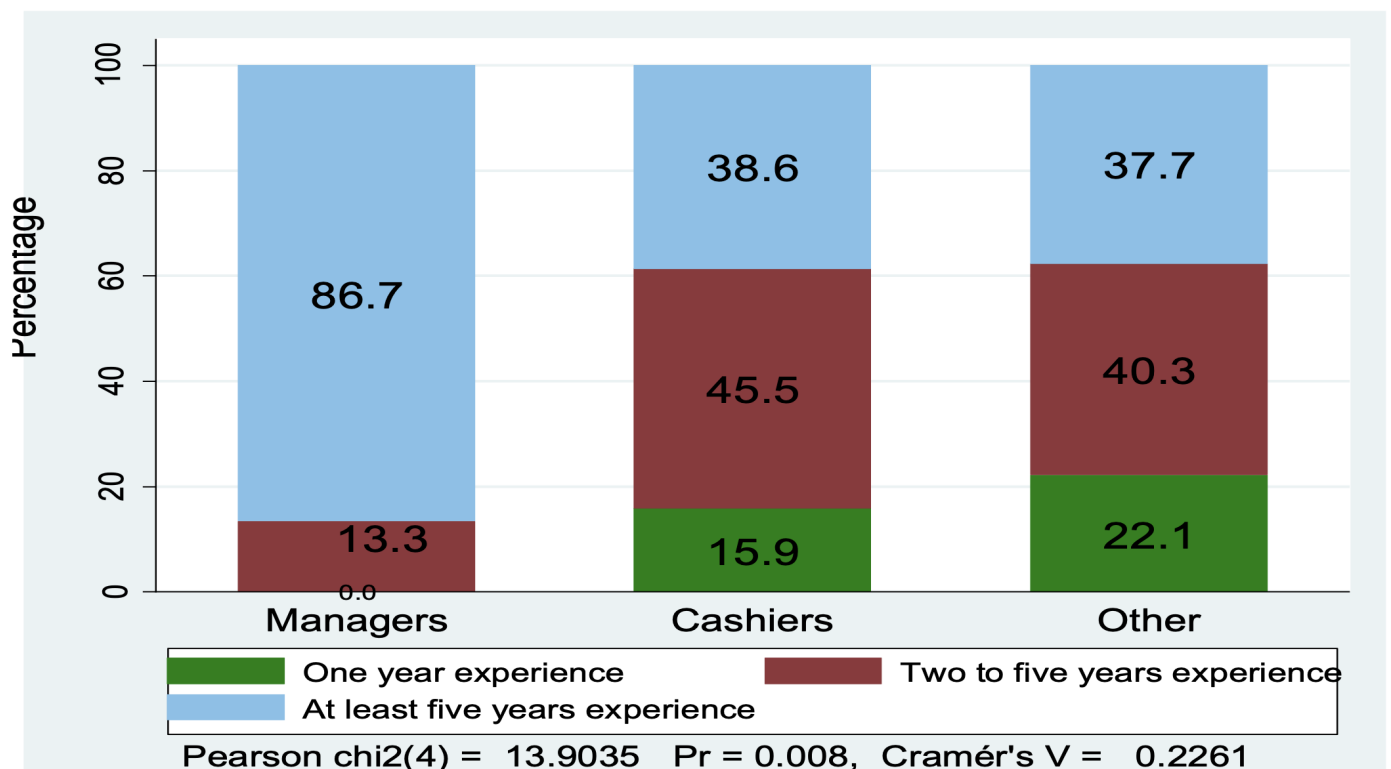


Figure 1. Proportion of job positions by work experience

For example, as shown in **Table 1**, those with five or more years, two-to-five years and one year of work experience had combined overweight and obesity burdens of 72.88% (28.81%; 44.07%), 56.61% (32.08%; 24.53%) and 54.16% (37.50%; 16.67%), respectively. The number of hours spent at work had a direct bearing on overweight and obesity to the extent that bankers who spent 4–7 hours at work increased their overweight and obesity burden up to approximately 100%!

Variation in BMI with Exercise

Physical activity profile of the participants revealed that obesity was inversely proportional to any form of exercise. In general, those who performed any form of exercise had a significantly lower obesity burdens than those who did not (**Figure 2**).

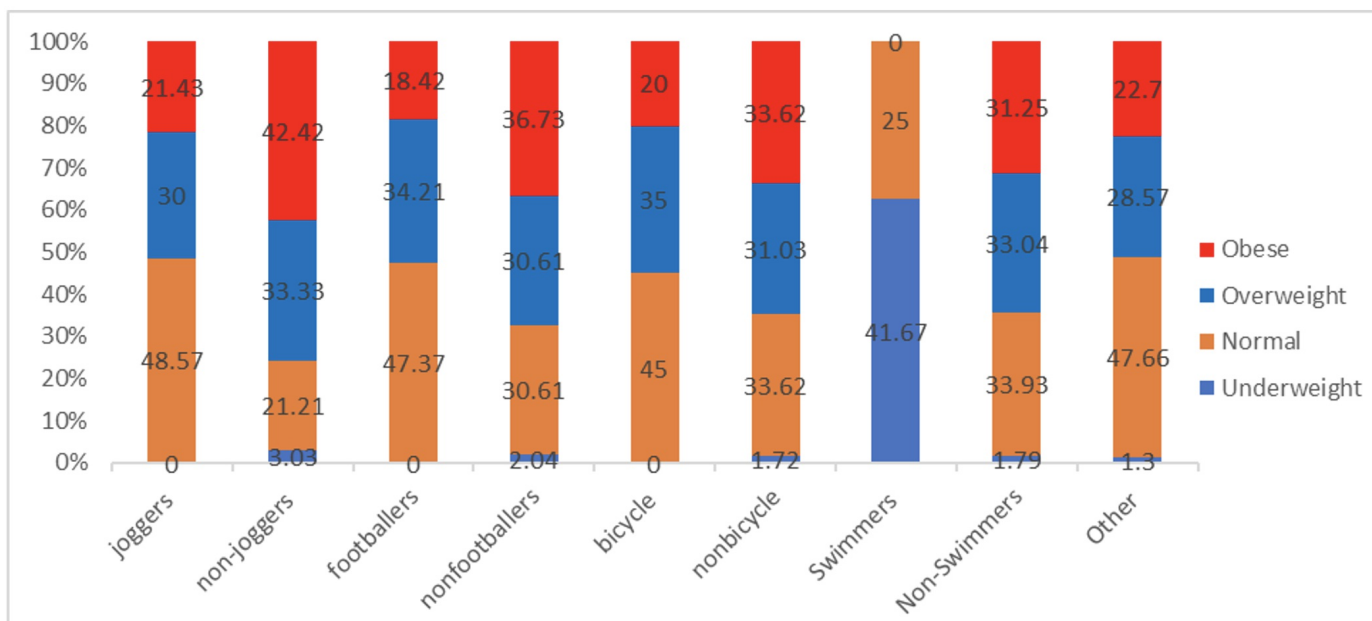


Figure 2. Distribution of BMI Based on the Type of Exercise

We investigated how BMI varies with exercise count. As exercise counts increase, BMI improves significantly by decreasing overweight and obesity burdens (**Figure 3**). Those who performed no exercise at all had a greater proportion of overweight and obesity burden (80.0%) than those who performed all forms of exercise, with only 20.0% overweight and 0.0% obesity. The discrepancies within the exercise counts might be due to weaknesses in the exercises.

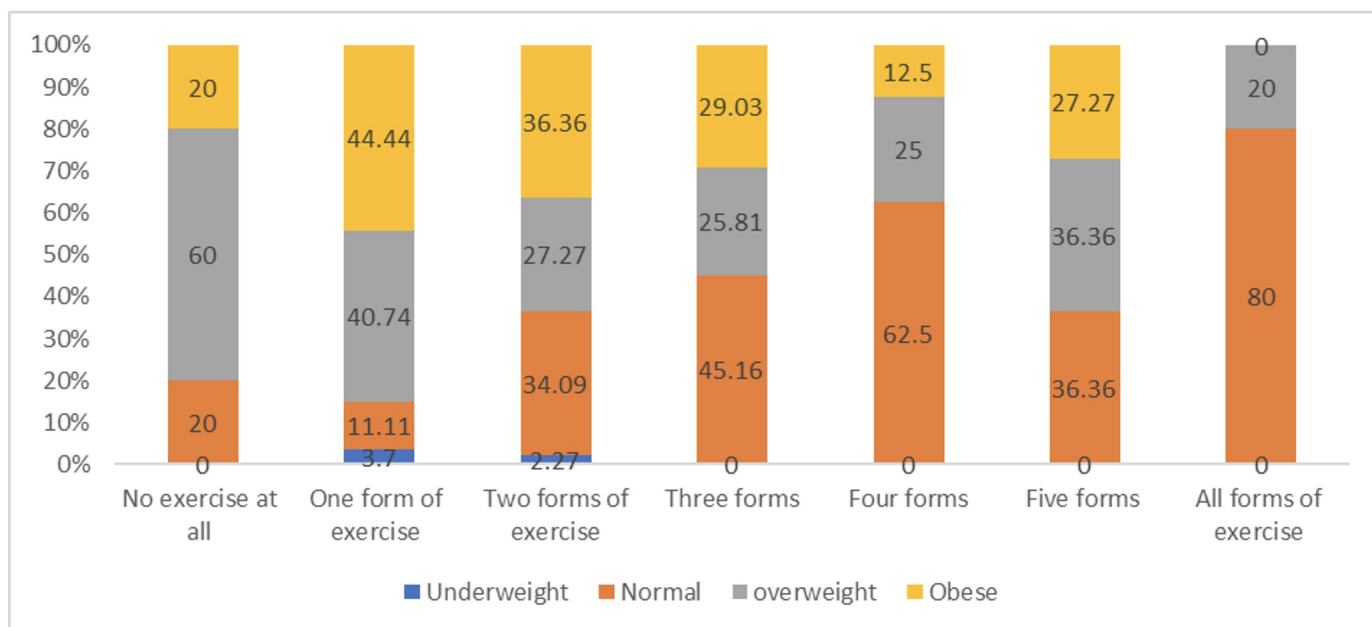


Figure 3. Distribution of BMIs Based on Exercise Counts

Associations between BMI, sociodemographic variables and lifestyle factors

Associations were found between BMI, sociodemographic variables and lifestyle factors via Pearson’s chi-square test at

the 5% significance interval (**Table 1**). The extent of association was determined via Cramer's V (CV). Gender had the strongest association (CV = 0.434), whereas job position had the weakest association (CV = 0.087). Age was positively related to overweight and obesity such that elderly bankers were at greater risk of overweight and obesity than the younger ones. Longer working hours and eating in-between meals were also positively associated with obesity among bankers. However, those who exercised were less likely to develop overweight and obesity than those who did not. Thus, obesity is inversely related to any form of physical activity.

Awareness of Overweight and Obesity

We investigated the participants' awareness of overweight and obesity by asking them the following questions:

- factors that contribute to overweight and obesity;
- measures to minimize or prevent overweight and obesity; and
- individuals more prone to overweight and obesity.

Factors Contributing to Overweight and Obesity

Most participants 32(23.53%) indicated that poor dietary habits were the main cause, followed by family traits and physical inactivity 16(11.76%) and 15(11.03%) respectively. Socioeconomic status and medications/diseases 6(7.42%) participants each, whereas 7(5.15%) participants indicated hormonal balance. The results revealed that participants had low awareness of factors that contribute to overweight and obesity.

Measures to Minimize or Prevent Overweight and Obesity

With respect to how to minimize overweight and obesity, most participants reported exercising 131(96.32%), reducing saturated fat intake 107(78.68%), consuming fruits 103(75.74%) and consuming vegetables 98(72.06%). However, a larger number of participants 90(66.18%) responded negatively to medication, with only 46(33.82) responding positively. The outcome of this assessment, however, showed that participants had fair awareness of how to minimize or prevent overweight and obesity.

We further investigated their lifestyles to determine whether they engaged in any form of exercise, the frequency of exercise and their eating habits. The major types of exercise/activity reported were jogging 70(51.47%), skipping 43(31.62%), football 38(27.94%), swimming 24(17.65%) and bicycle riding 20(14.71%). Very few participants indicated other activity types, such as driving. According to the results, almost all the participants indicated that they undertook one form of exercise or the other, but the frequency was generally not enough. Moreover, the intensity or effectiveness of the exercise could not be assessed.

We also found a significant association between eating habits and BMI ($p = 0.000$). Participants who reported eating in-between meals were either overweight or obese. The results of the lifestyle assessment revealed that most participants were not taking adequate measures to prevent overweight and obesity.

Persons more prone to overweight and obesity

We explored the awareness levels of participants on overweight and obesity with respect to those who were more prone to these conditions. The results revealed that females 71(52.2%), sedentary workers 49(36.03%), adolescent 48(35.29%), males 45(33.09%), alcoholics 37(27.21%), children 36(26.47), the aged 35(25.74%), and smokers 25(18.38%) respectively were more prone to overweight and obesity. However, **Table 1** shows that male bankers were more prone to overweight and obesity than females. The majority, 128(94.12%), indicated that physically active people were the least prone to overweight and obesity.

Knowledge of the Health Risks of Overweight and Obesity

We explored participants' knowledge of the health risks associated with overweight and obesity by asking them to indicate BMI cutoff points that represent overweight and obesity. However, no participant was able to do so. We further asked them to choose from a list of health outcomes associated with overweight and obesity. Most participants chose hypertension 102(75%), stroke 90(66.18%), or heart disease 88(64.71%) respectively. Diseases such as fatty liver disease 52(38.24%), stress incontinence 42(30.88%) and kidney diseases 42(30.88%) were also chosen by few participants.

Pregnancy and fertility problems were each chosen by 33(24.26%) and 31(22.79%) participants, respectively, as health risks. Few participants chose impotence 26(19.12%), type II diabetes 26(19.12%), both osteoarthritis and sleep apnea 20(14.71%), cancer 18(13.24%), or skin disease 11(8.09%) as health risk factors for overweight and obesity. Dyslipidemia constituted the lowest proportion 8(5.88%) of health risks associated with overweight and obesity. We found that participants' knowledge of the health risks of overweight and obesity was limited to hypertension, stroke and heart disease, but knowledge of other health risk factors was scarce.

Additionally, most participants 99(72.79%) chose depression as the highest psychological problem associated with overweight and obesity, low self-esteem 85(62.5%) and low self-esteem 53(38.97%). A large proportion 83(63.03%) responded negative to feeling isolation as being associated with overweight and obesity, with only 53(38.97%) responding positively. Their responses revealed that they had fair knowledge of the psychological problems associated with overweight and obesity.

Determinants of Knowledge on Health Risks of Overweight and Obesity

Table 2 presents the results of the determinants of knowledge of the health risks of overweight and obesity. Age is a significant predictor of knowledge of the health risks of overweight and obesity. For example, compared with the reference individuals aged 20--30 years, those with overweight and obesity increased their level of knowledge by 64.7%, and this difference was statistically significant at the five percent level. This implies that younger bankers are more knowledgeable about the health risks of overweight and obesity than their older counterparts. This explained why most bankers in that

age category had a normal BMI. Additionally, males' knowledge of overweight and obesity increased by 20.3% compared with that of females (7.73%). The implication is that males have more knowledge of overweight and obesity than females do. This observation, however, was not consistent with the results in **Table 1**. Other significant predictors of knowledge were marital status, job experience and level of education. Compared with their unmarried counterparts, married bankers had more knowledge (53.7%) of overweight and obesity.

Table 2. Ordinary least squares (OLS) estimates of determinants of knowledge

	OLS
Variable	Knowledge
Age (ref =51years and above)	
20-30 years	0.647** (0.312)
31-40 years	-0.363 (0.313)
41-50 years	-0.143 (0.381)
Male (ref=female)	0.203*** (0.0773)
Tertiary education (ref=at most SHS)	0.430** (0.080)
Married (ref=not married)	0.537*** (0.156)
Job Position(ref=other)	
Manager	0.178 (0.235)
Cashier	0.0323 (0.152)
Experience (ref=one year)	
2-5 years	0.494** (0.210)
Above 5 years	0.694*** (0.225)
Constant	-1.541*** (0.551)
N	136
R-squared	0.439

Table 3 presents the relative contributions of individual characteristics to overall knowledge of the health risks of

overweight and obesity. Marital status, age and sex were the most important contributors to one's knowledge of the risk of overweight and obesity. Thus, married bankers had the most knowledge, followed by young bankers and the male gender in that order.

Table 3. General dominance statistics for the relative effect

Knowledge	Dominance Stat.	Standardized Dominance Stat.	Ranking
Age	0.0996	0.2988	2
Sex	0.0617	0.1852	3
Education	0.0041	0.0124	5
Marital status	0.1415	0.4243	1
Job position	0.0012	0.0036	6
Experience	0.0252	0.0756	4

Discussion

Sociodemographic data of the participants

The bank workers included 90 (66.2%) males and 46 (38.82%) females. The percentage of males, 90(66.18%), was almost twice that of females, 46(33.82%). This was in sharp contrast with a study in Iran^[30], where 1197(46%) were men, and Libya^[31] where 63% were females. In the present study, 67(49.3%) participants were between 31 and 40 years of age, which formed the age category with the highest frequency. Half (68) of the participants were married, whereas the rest were single, divorced or widowed. The proportion of married participants in our study was less than that reported in Iran^[30], which involved a population of 2,575, 82% of whom were married. Moreover, 133(97.79%) of our study participants had tertiary-level education, whereas nearly 50% of the Iranian study population had a high school education or higher. Our findings were consistent with a similar study conducted in the Accra Metropolis^[10] on financial workers, which recruited more males (92) than females (88), with the majority of participants attaining a tertiary level of education 147(81.7%). In that study, more than half of the participants 99(55%) were married. Moreover, 58(42.65%) of them had been in the profession for more than five years, with the rest working for less than four years.

Prevalence of overweight and obesity among bankers

The study revealed a high prevalence of overweight and obesity among bankers in the Ho Municipality. Among the 136 participants, 2(1.5%) were underweight, 49(36%) had a normal weight, and 43(31.6%) and 42(30.9%) were overweight and obese, respectively. The combined prevalence of overweight and obesity among bankers was 62.5%. Our findings were similar to those reported in Accra^[32] involving a large population of 2,814 women, of whom 95(3.6%) were underweight, 828(31.5%) had normal weight, 730(27.8%) were overweight and 973(37.1%) were obese. In all, 64.9% of the women included were either overweight or obese. Furthermore, the prevalence of overweight and obesity observed in our study was higher than that reported in Nigeria^[33] involving 325 healthcare workers at the University of Benin

Teaching Hospital, where the combined prevalence of overweight and obesity was 57.2%. Another study in Libya [31] reported that approximately 75.3% of Libyan adults were overweight and obese (32.9% were overweight and 42.4% obese). The high prevalence of overweight and obesity among the bank employees in our study could be attributed to a low level of awareness and lack of adequate knowledge of the health risks associated with overweight and obesity.

Our findings were also consistent with a study that reported a high prevalence of 55.6% (37.8% overweight and 17.8% obesity) among bank workers in eight branches of a financial institutions in the Accra Metropolis [10]. In addition, we found that the overweight and obesity profiles of the married, single, divorced and widowed bankers were 38.24%, 35.29%, 26.98%, 25.40%, 0.00%, 66.67%, 0.00% and 50.00%, respectively. Thus, overweight and obesity were very high among the married bankers but low among the single bankers. Hence, marital status is associated with overweight and obesity. Our results confirmed those of a study in Greece [34] involving a large population of 17,341 men and women, where they reported a greater risk of obesity in married men and women than in their respective unmarried ones. This observation may be because married people are somehow at ease in life, and their socioeconomic status and conditions of service are perhaps okay. Therefore, in our society, where looking fat and sleek is viewed as a sign of affluence and good living, this might have accounted for this observation.

We found a significant association between sex and BMI ($P = 0.000$). Compared with their female counterparts, male bankers had a much greater tendency to become obese, whereas females were much predisposed to becoming overweight. This finding was in sharp contrast with those of some studies [17][27], which reported that the prevalence of obesity was twice as high in women as in men. However, another study [10] reported that the prevalence of these conditions is almost the same in both sexes. Furthermore, we found strong associations between age and BMI ($p < 0.001$), physical activity and BMI ($p < 0.000$), eating habits and BMI ($p < 0.000$), duration of hours at work and BMI ($p < 0.000$) and job experience and BMI ($p < 0.008$). Our results confirmed those of several previous studies [35] that reported an association between BMI and physical activity. However, [36] reported no significant relationship between BMI and physical activity. With respect to eating habits, our findings were in sharp contrast with those of [37][38][39][36], who reported no significant associations between BMI and eating habits.

Participants' Awareness of the Risk Factors for Overweight and Obesity

Assessment of the awareness levels of the participants revealed that poor dietary habits, family traits and physical inactivity were the major risk factors for overweight and obesity. Most of the factors given were in line with the WHO's reports [1]. Some researchers have reported that higher socioeconomic status contributes to overweight and obesity [10][40][41][42]. However, most participants did not see hormonal imbalances, socioeconomic status, or medication/diseases as major risk factors for overweight and obesity. This might be due to lack of information on the conditions of overweight and obesity. This is very important because lack of awareness of an issue may lead to incorrect choices. Another study [27] reported a direct relationship between socioeconomic status and obesity since higher socioeconomic groups are more likely to buy extra food and achieve their desire to look healthy and stronger. In addition, some driving factors, such as physical inactivity, sedentary lifestyles and changes in dietary patterns, are consistent with

our results. Poor dietary habits and less physical activity are drivers of overweight and obesity^[43], which is in line with our findings.

The participants also reported that family traits were among the major risk factors associated with overweight and obesity, confirming the findings of several previous studies^{[44][45]}. Very few participants (7.42%) indicated that medication and diseases were risk factors for overweight and obesity. However,^{[46][2]} documented medication and some diseases as risk factors for overweight and obesity. Steroids, antidepressants, Cushing's disease and polycystic ovary syndrome can lead to weight gain. A study by^[47] revealed that changes in life habits and patterns – dietary behaviours, advancement in technology, beliefs, sedentary lifestyles, and decreases in lifestyle physical activities results in increased obesity and weight among men and women. Moreover,^[48] reported that consuming snacks between meals, eating late at night, being physically inactive, consuming excessive fast food, and consuming alcoholic beverages were associated with an increased prevalence of obesity. Most of these reports are in line with our findings. A study in Turkey^[49] reported that adult obesity-associated risk factors were age, sex, hypertension, hyperlipidemia, smoking cessation, alcohol consumption, high household income, low education level and physical inactivity, occupation, marital status and a family of selected medical conditions. Although our results confirmed those of several earlier studies, our participants generally demonstrated low awareness of the risk factors for overweight and obesity.

Most participants 71(52.21%) believed that females were more prone to overweight and obesity than males, adolescents, children, alcoholics, smokers, and sedentary workers^{[50][1]}. Other studies^{[17][30][48]} reported that females were more prone to overweight and obesity than males. However, another study^[14] reported that obesity was greater among women than among men. Our results contrasted with all these findings since the prevalence of obesity in our study population was higher among men than women. Our study also revealed that physically active people are the least prone to overweight and obesity, as reported by^[1].

With respect to measures to reduce the risk of overweight and obesity, the majority agreed that exercise (96.32%), reduced intake of saturated fat (78.68%), fruit consumption (75.74%) and vegetables (72.06%) were the major factors that could help reduce the risk factors for overweight and obesity. This is in line with reports^[1] and those documented in other studies. However, most participants were not practicing these safety measures. Moreover, most participants 90(66.18%) did not know that medication could reduce overweight and obesity, contrary to a report^[45] that two medications, orlistat and liraglutide, were options for weight loss.

Effects of Knowledge Levels on Health Risks of Overweight and Obesity

We found that none of the participants prior to the study were aware of the WHO's BMI cutoffs for overweight and obesity. Although the majority 124(91.18%) reported that it was important to regularly go for voluntary BMI check-ups, yet very few did so. Our results were similar to those of a previous study^[51] in which one-third of nurses and physicians did not know how to calculate BMI. With respect to knowledge of the health risks of overweight and obesity, a fairly high proportion of participants – 75%, 66.17% and 64.71%, respectively reported that hypertension, stroke and heart disease were the main complications associated with overweight and obesity. A study Obirikorang et al. (2016) reported that a high proportion of

participants (81.8%) reported hypertension as a commonly known complication of obesity. The participants' knowledge of the health risks of overweight is above average; however, it had no significant effect on their BMI. Our finding is analogous to that of a previous study^[52], which reported no significant correlation between participants' level of nutritional knowledge and BMI, although a high level of nutritional knowledge was found among the sample. Few of our study participants believed that, in addition to these three complications, other conditions, such as gallbladder disease, dyslipidemia, asthma, skin irritation, cancer, sleep apnea, osteoarthritis, type 2 diabetes, impotence, kidney disease, fatty liver disease, heartburn, fertility problems, pregnancy problems and stress incontinence, were some of the complications that one may suffer from overweight and obesity. All these complications are in line with those reported in several studies^{[45][1]} that reported that high BMI is a major risk factor for noncommunicable diseases such as cardiovascular diseases (mainly heart disease and stroke), which were the leading cause of death in 2012; diabetes; musculoskeletal disorders (especially osteoarthritis); some cancers (including endometrial, breast, ovarian, prostate, liver, gallbladder, kidney and colon); breathing difficulties; and increased risk of fractures, hypertension and increased risk for cesarean delivery. The majority of the participants believed that depression and low self-esteem were the main psychological problems associated with overweight and obesity, even though they believed that overweight or obese individuals could experience poor self-esteem or feelings of isolation. The results confirmed the findings of some studies^{[45][53][54]} that overweight and obesity are associated with psychological problems such as low self-esteem, low confidence, feelings of isolation and depression.

Conclusions

The prevalence of combined overweight and obesity among the bakers in the Ho Municipality was high and was influenced by sociodemographic characteristics such as age and sex. In addition, physical inactivity and dietary habits were found to be significant contributors. Female bakers were prone to overweight, whereas males were prone to obesity. In general, the awareness level of bakers of the risk factors for overweight and obesity was low. Although the knowledge levels of the bakers on the health risks of overweight and obesity were above average, there was no correlation between their knowledge levels and BMI since a high proportion of the bakers were overweight and obese. The dominance analysis revealed that marital status, age and sex were the most important contributors to bakers' knowledge of the health risks of overweight and obesity. The war against overweight and obesity can be won only through the creation of awareness of modifiable risk factors and by empowering people with knowledge of the associated health risks.

Recommendations

1. Further studies should be carried out on this topic in other organizations and regions of Ghana to generate sufficient evidence-based knowledge to effectively educate individuals on the impact of overweight and obesity on health.
2. The management of banks should plan, implement and monitor the effectiveness of local programmes such as wellness and fitness programmes to increase physical activity for the prevention and control of overweight and obesity.
3. In collaboration with local health organizations, the human resource directorate must intensify public education and

increase awareness of the health risks associated with overweight and obesity in the Ho Municipality.

4. Local health authorities and public health workers should sensitize the public to healthy dietary habits.

Limitations of the study

1. The study used body mass index as the main determinant of overweight and obesity. However, BMI does not consider different levels of adiposity on the basis of age, sex or level of physical activity. Nevertheless, it provides the most useful and convenient approximation for the determination of the health status of people.
2. The results were from the Ho Municipality of Ghana only and therefore cannot be generalized to all of Ghana.

Statements and Declaration

Acknowledgments

Our sincere thanks to our parents for their financial support. Special thanks to Madam Comfort Lotse for allowing us to use the weighing scales and stadiometers in the Skills Laboratory during the data collection. Finally, we are grateful to the managers and staff of the banks for their cooperation and support.

Declaration of interests

The authors collectively declare that there is no conflict of interest that undermines or prejudices the impartiality of this scientific work.

Funding

This research output emanated from students' project work and therefore did not receive funding from any source. The cost of study was borne by the students themselves.

Authors' contributions

JWAJ – Designed and supervised the study, analyzed the data, drafted the manuscript and gave final approval. BS, KKE, SA, GC & OCI designed the study, collected and analyzed the data, drafted the manuscript and gave final approval.

Ethical considerations

- Approval Body: UHAS – REC
- Approval Number: [UHAS-REC A.4 [327] 18-19]

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