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Nutritional Status of Salaried Bank Workers in Kampala, Uganda

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ABSTRACT

Background: Overweight and Obesity has gradually increased over the past decades globally. Studies on risk-factors for overweight and obesity have focused on general populations and patient samples. Considerably less is known on this issue among salaried workers particularly in low income countries. This study established the prevalence and social demographic, nutritional and lifestyle risk factors of overweight and obesity in a sample of bank employees in Uganda.

Methodology: A cross-sectional study was conducted among 185 randomly selected salaried workers of a bank in Kampala in January 2018. Information from a questionnaire adapted from the WHO-STEPwise instrument-Nutrition Dietary patterns, physical activity, stress management coping, alcohol intake, pertinent social-demographic information, as well as their Body Mass Index was collected and analyzed using chi-square tests and binary logistic regression the Statistical Package for Social Sciences (SPSS).

Results: The overall prevalence of overweight and obesity was 51.9% (40% overweight and 11.9% obese). The likelihood of being overweight/obese was lower among; Catholics (OR= 0.262, 95%C.I= 0.088-0.779, P-value=0.016) when contrasted with Anglicans, table wine drinkers (OR= 0.151, 95%C.I= 0.026-0.869, P-value = 0.034) in contrast with liquor consumers, and employees using exercise as a stress coping mechanism (OR=0.239, 95%C.I=0.086-0.661, p-value=0.006) than those using reclining as a coping mechanism.

Conclusion: Overweight or obesity may be of epidemic proportion among bank workers. The identified risk factors imply that interventions targeting the management of overweight and obesity should integrate physical activity for stress management as part of the organizational Occupational Safety Strategy Package and provide remedies to control alcohol consumption. Additionally, further research to understand religious inequalities in overweight/obesity is warranted.

Key Words: Nutritional Status, Bank employees, Stress, Risk-factors, Uganda

INTRODUCTION

Nutrition is the science of the nutrients in foods and their actions within the body as well as the study of human behaviors related to food and eating [1]. Human body requires carbohydrates, proteins, fats, vitamins and minerals build on and maintain immunity, healthy bones and normal functioning from birth through the life span. Body Mass Index (BMI) is the standard measurement of the current nutritional status in humans. BMI measures the person's weight in kg per height in meters squared (kg/m2), with the optimal of 18.5-24.9 kg/m2, reflecting normal body functioning and an active immune system. An imbalance of nutrients within the human body results into malnutrition, constituting either under-nutrition (i.e. energy, protein and micronutrient deficiencies resulting into underweight) or over-nutrition. Human BMI of 30kg/m2 and above is termed obesity [2].

Globally, the World Health Organization (WHO) reports that the world obesity has more than doubled since 1980. In 2014, more than 1.9 billion adults were overweight. Of these, over 600 million (39%) were obese [3]. In Sub-Saharan Africa (SSA), data suggest that 70% and 30% among women and men respectively may be overweight or obese [4]. Nationally representative surveys place the prevalence of obesity in the general urban population at between 23-38%, with variations between the 24 SSA countries studied [5]. Thirteen percent (13%) of African children are projected to be overweight or obese by 2020, compared with 8% in 2010 [6]. In Uganda, the prevalence of overweight and obesity has increased from 8 to 18.8 % in less than one decade [7].

The WHO recommends 5-7 servings of fruits and vegetables daily for adults aged between 19-49 years of age. Fruits and vegetables are known to contain antioxidant properties which help to fight off cancerous cells while strengthening the immune system and will enable the individual to maintain a healthy weight and proper body functioning [1]. Furthermore, the Global Strategy on Diet, health and physical activity, adapted by the WHO recommends that adults aged 18–64 should do at least 150 minutes of moderate-intensity aerobic physical active, throughout the week or do at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week or an equivalent combination of moderate- and vigorous-intensity

activity [8]. The most common nutritional related problems faced by most salaried workers are non-communicable diseases such as hypertension, obesity, diabetes, cancer and even hyperlipidemia [9]. These conditions are mainly attributed to the daily lifestyles of the salaried workers such as unbalanced meals, alcohol consumption, poor stress management and a lack of physical activity due to the long working and sitting hours (desk work) [10]. In effect, several theoretical conceptual frameworks suggest that there are various social demographic, nutritional-related and lifestyle risk factors that are associated with overweight and obesity. Social-demographic factors include age, gender, marital status, highest level of education and having dependents.

Recent studies suggest socio-demographic variations in overweight and obesity, with an increased risk among women, individuals over 50years old, low educated and individuals living alone. Lifestyle factors including alcohol consumption have in addition been found to increase obesity risk [11, 12, 13].

Particular occupations inevitably predispose individuals to sedentary lifestyles. Bank workers (e.g. tellers, customer service personnel, and back office), spend the greater part of the day sitting down due to the nature of their work [12]. This sedentary physical lifestyle can increase vulnerability to overweight and obesity rates amongst this population [12]. Among workers, stress coping mechanisms is hypothesized to have significant associations with nutritional dietary patterns, alcohol intake, and body weight. The correlation between work stress and the risk of overweight and obesity and cardiovascular mortality has been previously established in the research [14, 15]. Moreover, the association between the number of sleeping hours and weight management has been investigated, revealing that interrupted or inadequate sleep is a risk factor on human health and well-being among salaried workers, which may have detrimental effects on productivity and efficiency [15].

Presently, Uganda is regarded as a country with the double burden (i.e. co-existence of under- and over nutrition) of malnutrition is on the rise [16], with a high potential to negatively impact on economic development in the country [17]. If the country is to meet the 3rd Sustainable Development Goal (SDG) i.e. 'Have a healthy, productive and

innovative nation' [18], interventions to reverse the trend of increasing overweight and obesity statistics are warranted. As a starting point, understanding the risk factors of overweight or obesity among vulnerable populations (e.g. bank employees) could generate data relevant for informing intervention strategy (e.g. groups to target), design and regulation (e.g. through occupational health policies).

The overall objective of this study was to establish the nutritional status of salaried workers at Bank of Uganda and investigate the factors associated with overweight and obesity in this population.

The study sought to answer the following research questions:

1. What is the prevalence of malnutrition among the salaried bank workers?
2. To what extent are social-demographic, dietary-related, and lifestyle factors associated with the nutritional status of salaried bank workers?

METHODOLOGY

Study Design, inclusion and exclusion criteria

This research was a descriptive cross sectional study of Bank of Uganda salaried workers using structured questionnaire interviews for data collection. The sampling frame constitued all salaried bank workers aged 23-60. The exclusion criteria was all pregnant women as well as workers on short-term contracts <6months and not salaried. The job descriptions varied from bank directors, unit heads, and department heads, to office attendants and security officials (on pay roll).

Sample Size Determination and design

Sample Size

The sample size required was computed using the Kish Leslie Formula (1965) as follows:

$n = \frac{Z^2 xPQ}{\partial^2}$, where, n = required minimum sample size, Z = 1.96 (Standard Value at α = 5% level of significance), P= Prevalence of obesity and overweight used was 18.8 (estimated from Uganda data, UDHS 2011). Q = 100 – P. σ = Margin of error Set at 5%. Using this formula needed a minimum of 192 salaried workers in Kampala at the main central Branch of Bank of Uganda. This includes the sampling insurance response factor of 5% to allow margin of errors and any errors in respondents. This sample size was representative of

the population in Kampala known to be overweight and obese.

Data and procedures

Study subjects were selected using convenience sampling was applied to sample 9-12 willing participants randomly selected from each of the 19 out of 24 departments regardless of their job description.

Relevant information for this study was collected from the respondents of the study directly using face to face interviews. The questionnaire was adapted from the WHO Stepwise guide approach, a previously validated instrument. In addition, anthropometric measures were obtained using a Standard Calibrated Sunbeam weighing scale and a Microtoise (200cm).

Measurement of Variables

The dependent variable in this research study was the nutrition status of the salaried worker as measured using the Body Mass Index (kg/m2) measure. Weight was measured in kilograms using a Sun Beam weighing scale and height was measured in centimeters using 200cm Microtoise. The underweight category was eliminated from the study due to the poor variation (observed counts below the expected count of subjects). The overweight and obesity BMI groups were combined to form one group. Therefore the study assessed subjects within the normal BMI vs. Overweight /obese group.

The independent variables were assessed and defined in the questionnaire as noted in the WHO Stepwise Questionnaire. These included; Nutritional Dietary patterns such as - Number of main meals consumed in a day, number of processed snacks eaten per week, fruit and vegetable intake, quality of wheat bread and preferred proteins. Alcohol intake was also collected from each participant (Type and Weekly intake – <1 day, 1-2 days a week, or more than 2 days in a week) as well as the intensity (moderate or vigorous) and frequency (number of days per week) of physical activity was also assessed both at work and outside work.

Possible confounding variables assessed included social-demographic factors such as gender which was categorized as either “Male” or “Female”. Marital status was re-categorized into ‘living alone’ or ‘living with a spouse’, age was categorized as 20-29,30-39,40-49,50-59, or above 60 while religion was categorized as Pentecostals, Catholics, Others-(Muslims and Aethists) and

Anglicans. Highest education level subcategories were represented as 'below bachelors', 'bachelors', and 'postgraduate'. Having household dependents was divided into the "yes" or "no" classes. The total number of months the respondent has worked at the Bank of Uganda were also examined under three major categories i.e <120months, 121-241months, and >241 months using the WHO STEPwise Approach guide instrument. Stress coping mechanisms were also classified as possible confounders in this research study. They were re-categorized into four sub-groups such as eating more, consuming alcohol, exercising and reclining.

Analysis

Once the data was collected and entered into the Statistical Package for Social Sciences (SPSS) software, it was cleaned, sorted and some variables had to be re-categorized prior to analysis. The number of participants that agreed to respond to participate in this study was 196. Eleven (11) had inconsistencies in their data and were therefore eliminated from the study.

For analysis, descriptive statistics were used in terms of frequencies and percentages. For the assessment of associations between potential risk factors and the outcome, chi-square tests were carried out at the bivariate level, and logistic regression were applied to control for possible confounding variables. Statistical significance at the bivariate level was depicted at a p-value <0.10 while at the multivariate level a p-value <0.05 at 95%C.I was applied.

Validity and Reliability of Research Instrument

The face validity of these instruments was based on the usage of the Questionnaire adapted from the WHO Stepwise Approach Questionnaire guidelines. This is the standard instrument used to assess the risk factors associated to non-communicable diseases. The BMI measure was attained using a Standard Calibrated Sunbeam weighing scale and (personal bought) a Microtoise 265M (200cm). Reliability of the research instrument was attained by the pre-testing questionnaire. Questions that seemed unclear were later on adjusted for better comprehension during later interviews. English and Luganda were the major languages used in the questionnaire.

Ethical Considerations

Approval to conduct research was sought from the faculty of health sciences, Victoria University, Kampala. Prior data collection, I also sought permission from the Bank of Uganda to get approval to carry out the research study. Data collection was employed with uttermost confidentiality and privacy of all respondents. The data collection was also voluntary. No respondent was forced to answer the questionnaire. It was imperative for the respondents to sign an informed consent form as proof of their acceptability to participate in this study.

RESULTS

Demographic, Nutritional-related and lifestyle Characteristics of participants

Of the 196 subjects planned for the study, response was obtained from 185 (94.4%). Eleven (5.6%) of the 196 had to be eliminated from the study sample due to the incompleteness and inconsistencies in their data.

As shown in Table 1, about 52% of the study subjects were male and majority were between 30-39 years old (53%), living with a spouse (68.1%) and were Catholic (34.6%). Additionally, majority of participants had attained a post-graduate degree (Masters/Ph.D.) and had worked at Bank of Uganda for less than 10years (65.4%).

Nutritional characteristics of the study sample indicated that majority of the participants consumed less than three main meals a day (56.2%), consumed processed foods on more than 2 days in a week (40.5%), consumed white bread (55.1%), and did not meet the recommended daily leafy green vegetable servings of 3 servings of vegetables per day (97.8%). Results also showed that 21.5% of the study subjects consumed unhealthy fats in their meals.

The highest number of study subjects reported that they did not consume alcohol (45.9%). Majority of those who consumed alcohol consumed it specifically with relaxation motives (i.e. recreation and stress release) (68%) between 1-2 days per week (43.2%).

Data pertaining to physical lifestyles of the participants was collected under various subcategories i.e. frequency of the elevator usage at work, daily sitting time, and amount of weekly physical activity (minutes) and number of seeping hours. Majority of the participants used the elevator “Most-times” (69.7%), sit for more than seven hours (55.1%) and exercise for an average of less than 75minutes per week (57.8%) and slept for an average

of 7-8hrs (56.8%). Under stress management coping mechanisms, majority of the respondents used reclining back (screen time i.e. laptops, T.Vs, and phones, as well as sleeping, chatting with friends, praying and reading) (66.5%) as a way of managing stress as indicated in Table 1.

Table 1: Descriptive analysis of the demographic, nutritional-related and lifestyle characteristics of the participants

Variables	Frequency N=185	Percentage (%)
Age Categories		
20-29	22	11.9
30-39	98	53
40-49	38	20.5
50-59	27	14.6
Gender		
Male	96	51.9
Female	89	48.1
Marital Status		
Living Alone	59	31.9
Living With Spouse	126	68.1
Religion		
Catholic	64	34.6
Pentecostal	43	23.2
Anglican	45	24.3
Others	33	17.8
Highest Level of Education		
Below Bachelors	18	9.7
Bachelors	48	25.9
Post-graduate	119	64.3
Duration of Work at Bank (months)		
6-120	121	65.4
121-241	42	22.7
>242	22	11.9
Dependents		
Yes	126	68.1
No	59	31.9
Recommended main meal intake/day		
No	81	56.2
Yes	104	43.8
Weekly processed snacks		
Once	54	29.2
2 days a week	15	8.1
> 2 days a week	75	40.5
Never	41	22.2
Type of cooking oil/fat used for meal preparation		
Healthy Fats	142	78.5
Unhealthy Fats	39	21.5
Type of Wheat Bread Consumed		
Whole Wheat	54	29.2
White wheat	102	55.1
None	29	15.7
Daily Green Leafy Vegetable Servings		
< 3	181	97.8
≥ 3	4	2.2
Daily Fruit Servings		
< 2	66	35.7
≥ 2	119	64.3
Protein Intake Preference		
Plant origin	74	40.7
Animal Origin	108	58.4
No preference	3	1.6
Type of Alcohol Consumed		
Table Wine	45	24.3
Beer	41	22.2
Liquor	14	7.6
None	85	45.9
Consuming Reasons		
Relaxation motives (recreation and stress release)	68	68
Social Influence	32	32
Do not drink	85	*
Frequency of Alcohol Intake		
2 days per week	80	43.2
more than 2 days per week	16	8.6

<1	89	48.1
Elevator Usage at Work		
Sometimes	56	30.3
Most Times	129	69.7
Daily Sitting Time (hrs.)		
< 7	83	44.9
≥ 7	102	55.1
Number of Sleeping hrs.		
<7	105	56.8
≥ 7	80	43.2
Stress Coping Mechanism Variable		
Eating	11	5.9
Exercising	37	20
Consuming Alcohol	14	7.6
Reclining (Sleeping, reading , Screen-time and praying)	123	66.5

Table 2: Distribution of the BMI (Body Mass Index) among participants

WHO BMI (kg/m²)	Frequency N= 185	Percentage %
Underweight (<18.5)	9	4.9
Normal (18.5-24.9)	80	43.2
Overweight (25-29.9)	74	40
Obesity Grade I (30-34.9) Grade II (35-39.9)	 19 3	 10.3 1.6

Bivariate Analysis: Associations between Overweight/Obesity and demographic, nutritional-related and lifestyle factors

Obesity/Overweight vs. Demographics:

Table 3 indicates the associations between demographic, nutritional-related and lifestyle factors and Overweight and obesity. The prevalence of overweight and obesity was highest among participants above 40years old (p value =0.002), those who had worked at BOU for over 20years (p value =0.010), living with a spouse (p-value = 0.073), and Anglicans (p-value=0.088). Other social-demographic variables such as gender (p=0.680), dependents (p-value=0.744) and highest education level (p=0.137) did not have any statistical significant association with overweight or obese as indicated in Table 3.

Obesity/Overweight vs. Dietary factors

None of the nutritional dietary factors and physical activity lifestyle factors showed any statistically significant association with overweight and obesity.

Obesity/Overweight vs. lifestyle factors

As depicted in table 3, the highest prevalence of overweight and obesity was highest among liquor drinkers (p-value = 0.008) as well as those who consume alcohol 1-2 days a week (p-value=0.002). Reasons of consuming alcohol did not have any statistical significant association with overweight and obesity. Stress coping mechanisms had significant associations with obesity/overweight, with the highest prevalence of obesity/overweight

among user of alcohol as a stress management strategy (p-value = 0.036).

Table 3: Bivariate associations between Overweight/Obesity and demographic characteristics, dietary-related and lifestyle factors

Demographic Variables	Over Wt & Ob (N)	Percentage (%)	Chi-square value	P-value
Age Categories				
20-29	7	36.8	14.443	**0.002***
30-39	44	45.8		
40-49	26	74.3		
50-59	19	73.1		
Gender				
Male	51	56	0.171	0.68
Female	45	52.9		
Marital Status				
Living Alone	24	44.4	3.206	**0.073***
Living With Spouse	72	59		
Religion				
Catholic	33	55.9	6.555	**0.088***
Pentecostal	24	55.8		
Anglican	28	65.1		
Others	11	35.5		
Highest Level of Education				
Below Bachelors	12	75	3.97	0.137
Bachelors	27	58.7		
Post-graduate	57	50		
Duration of Work at Bank (months)				
6-120	54	46.6	9.269	**0.010***
121-241	26	66.7		
≥ 242	16	76.2		
Dependents				
Yes	65	53.7	0.107	0.744
No	31	56.4		
Recommended main meal intake/day				
No	38	49.4	1.49	0.222
Yes	58	58.6		
Weekly processed snacks				
Once	9	69.2	1.668	0.644
2 days a week	40	53.6		
> 2 days a week	20	51.3		
Do not take	27	50.9		
Type of cooking oil/fat used for meal preparation				
Healthy Fats	78	57.4	1.529	0.216
Unhealthy Fats	17	45.9		
Missing*	1	-		
Type of Wheat Bread Consumed				
Whole Wheat	26	26	0.64	0.726
White wheat	54	54		
None	16	16		
Daily Green Leafy Vegetable Servings				
< 3	92	53.5	3.411	0.065
≥ 3	4	100*		
Daily Fruit Servings				
< 2	31	49.2	1.128	0.288
≥ 2	65	57.2		
Protein Intake Preference				
Plant origin	35	51.5	0.371	0.543
Animal Origin	59	56.2		
No preference	2	66.7		
Type of Alcohol Consumed				
Table Wine	25	56.8		
Beer	27	69.2	11.942	**0.008***
Liquor	11	78.8		
None	33	41.8		
Consuming Reasons				
Relaxation motives	43	66.2	0.217	0.614
Social Influence	19	61.3		
Do not drink	-			
Frequency of Alcohol Intake				
1-2 days per week	54	69.2	12.969	**0.002***
more than 2 days per week	8	53.3		
<1	34	41		
Elevator Usage at Work				
Sometimes	25	46.3	2.138	0.144
Most Times	71	58.2		
Daily Sitting Time (hrs.)				
< 7	45	57.7	0.559	0.454
≥ 7	51	52		
Weekly Minutes of				

Physical				
<75	35	56.5	0.247	0.884
75-149.9	28	57.1		
≥ 150	29	52.7		
Number of Sleeping hrs.				
< 7	54	54.5	0	1
≥ 7-8	42	54.4		
Vigorous Physical Activity At Work				
No	83	56.8	1.834	0.176
Yes	13	43.3		
Stress Coping Mechanisms				
Eating more	6	54.5		
Consuming Alcohol	11	78.6	8.569	**0.036***
Exercise	13	36.1		
Reclining	66	57.4		

Multivariate Analysis

In the multivariate analysis, type of alcohol consumed, frequency of alcohol intake, and stress coping mechanisms remained significantly associated with obesity/overweight, even after adjusting for possible confounders that were significant in the bivariate analyses.

The likelihood of being overweight/obese was lower among; Catholics (OR= 0.262, 95%C.I= 0.088-0.779, P-value=0.016) when contrasted with Anglicans, table wine drinkers (OR= 0.151, 95%C.I= 0.026-0.869, P-value = 0.034) in contrast with liquor consumers, and employees using exercise as a stress coping mechanism (OR=0.239, 95%C.I=0.086-0.661, p-value=0.006) than those using reclining as a coping mechanism.

Table 4: Multivariate analysis of factors associated with Obesity/Overweight

Variables	Odds Ratio	P-Value	95% CI	
			Lower	Upper
Marital Status				
Living Alone	0.533	0.198	0.205	1.389
Living w/Spouse	1			
Age				
20-29	0.41	0.491	0.032	5.19
30-39	0.646	0.7	0.07	5.977
40-49	2.008	0.56	0.193	20.91
50-59	1			
Months Worked at BOU				
6-120	0.223	0.218	0.02	2.43
121-241	0.319	0.349	0.029	3.482
242	1			
Religious Category				
Pentecostal	0.591	0.317	0.211	1.655
Catholic	0.262	**0.016***	0.088	0.779
Others	0.298	**0.048***	0.09	0.991
Anglican	1			
Type of Alcohol				
None	0.957	0.978	0.043	21.51
Beer	0.465	0.407	0.076	2.841
Table Wine	0.151	**0.034***	0.026	0.869
Liquor	1			
Frequency Alcohol intake				
<1	1.111	0.946	0.054	23.06
1-2 days per week	14.59	**0.003***	2.441	87.19
more than 2 days per week	1			
Stress Coping Mechanism				
Eating more	0.935	0.929	0.21	4.165
Consuming Alcohol	6.029	0.077	0.824	44.14
Exercise	0.239	**0.006***	0.086	0.661
Reclining	1			

*P value <0.05

DISCUSSION

Prevalence of Obesity and Overweight

The prevalence of malnutrition among bank workers in our study stood at 56.8%, with every other worker being overweight or obesity. These figures are comparable with studies in the bank population from similar Sub-Saharan African (SSA) Countries e.g. Ghana, where a prevalence of 55.6% was found [12]. These figures are however higher than the prevalence observed in the general SSA population [5] suggesting that banks workers might be at heightened risk.

Factors associated with Overweight and Obesity

Our results revealed three risk factors associated with overweight and obesity among salaried bank workers. These include; consuming liquor, being Anglican, and using reclining methods as a stress coping mechanism.

Alcohol Consumption (Type and Weekly Intake Frequency)

We found table wine consumers to be at higher risk of obesity/overweight than liquor consumers. In addition, our results suggest that individuals who consumed alcohol 1-2 days per week are at higher risk of overweight and obese compared to those who drank alcohol more than 2 days per week. One similar study finding among Korean males found a very modest positive linear relationship between alcohol intake and BMI. The authors argued that among moderate consumers, alcohol does not suppress food intake, and may actually increase appetite. Chronic alcohol consumption appears to have the opposite effect [19]. Our study provides new data to support this hypothesis in a sample of male and female bank workers. On the contrary, studies among English men and American women respectively [20, 21] found alcohol consumption had a linear positive relationship to weight gain (overweight and obesity) in that heavy drinkers showed the highest relative odds of weight gain compared with none-occasional drinkers. It is plausible that discrepancies in the findings related to alcohol intake and obesity/overweight could be a result of differences in the operationalization of these phenomena among studies [22]. In any case, further research is warranted.

Religion

Religion was significantly associated with obesity/overweight, with Anglicans at higher risk than Catholics. This finding is in conformity with previous research [23]. It is plausible

that certain religious groups might be more flexible in adaptation of lifestyles that are detrimental to health in general. To avoid further speculation, deeper insight on factors contributing to differences in obesity/overweight is warranted in future research.

Stress Coping Mechanisms

The likelihood of obesity/overweight was higher among bank workers who used exercise as a stress coping mechanism than those who used reclining to manage stress, corroborating previous works in the field [14, 15, 24], and underlining the importance of active stress management methods such as physical activity for employees engaged in sedentary services.

Other research contributing factors

Duration of Work at the Bank had a strong significant association to overweight and obesity at the bivariate level on analysis. It was found that the participants who had been working at the Bank for over 20years had a higher prevalence (76.2%) of Overweight and Obese compared to those who had been working there from 6months-10years.Based on previous researches, employed adults spend a quarter of their lives at work, and the pressure and demands of work may affect their eating habits and activity patterns, which may lead to overweight and obesity [14, 23].

The finding indicating higher risk for obesity/overweight in old age corroborates previous works [25] and adds support to the notion that poorer lower extremity mobility, common in old age, may increase overweight and obesity risk in both men and women.

Our findings suggesting a higher risk of obesity/overweight among spouseless participants in accordance with some previous research [25] but contradictory to other works [26] which found a higher prevalence of being overweight and obese among participants with spouses. Discrepancies could be due to contextual, measurement or methodology differences.

Factors such as gender, highest level of education, nutritional dietary patterns as well as physical activity were not significantly associated to overweight and obesity in this study.

Gender was not significantly associated to BMI in our study. By contrast, cross-sectional studies [12, 14, 29] found that gender alone had a strong association to the BMI of the different individuals

($p<0.02$) in that women had a higher BMI than men. Similarly in Uganda's DHS-2011, women had a higher rate of overweight and obesity compared to men (18.8% vs. 4.4%)

Nutritional Dietary Patterns were not significant in this study corroborating some previous work undertaken in a financial institution [12]. Further understanding of related mechanism is warranted in future research.

From the analysis, it was suggested that the association between vigorous intense physical activity within work and BMI (Normal vs. Overweight & Obese) was not significant, contradicting previous works [27, 31]. The small numbers engaged in vigorous activity (n=13) in this study may have limited the ability to detect statistically significant associations in this regard.

STUDY STRENGTHS AND LIMITATIONS

The study sample size of the research had an acceptable response rate 95% (185/192) and was therefore suitable representation of the study population. Secondly, all measures used i.e. the instruments (Questionnaire adapted from the WHO STEPwise Approach, Weighing scale, and Height meter) were valid and adhered to the standard of WHO Surveillance guidelines for Non-communicable diseases.

However, the cross-sectional study design cannot confirm causal links. Secondly, there was a possibility of reporting bias with questions that were sensitive (physical activity and alcohol related questions) which could lead to underestimation of alcohol consumption or over estimation involvement in physical.

CONCLUSION

Overweight and obesity may be of epidemic proportion among bank workers. The identified risk factors imply that interventions targeting the management of overweight and obesity should integrate physical activity for stress management as part of the organizational Occupational Safety Strategy Package and provide remedies to control alcohol consumption. Additionally, further research to understand religious inequalities in overweight/obesity is warranted. Finally, the role of dietary diversity in overweight/obesity deserves further acknowledge in the research

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