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RESEARCH ARTICLE

ATTITUDES RELATED TO OBESITY AMONG STUDENTS OF HIGHER TEACHER'S TRAINING COLLEGE, UNIVERSITY OF YAOUNDE I CAMEROON

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ABSTRACT

The prevalence of obesity is increasing throughout the world and in Cameroon especially with the high rate of nutritional transition. Its etiology is dependent on modifiable risk factors such as nutrition knowledge, level of physical activity, eating practices, access to employment and others factors. Therefore, it is a call of concern for everybody, mostly future civil servant such as higher teacher training students to be equipped with nutritional knowledge for further adoption of appropriate healthy eating practices. This study aimed to assess both the prevalence of obesity and the attitudes related to obesity amongst students of the Higher Teacher Training College of Yaounde I-Cameroon. The study was conducted among two hundred and eleven students (92 men and 119 women) aged between 18 and 40 years. A questionnaire related to identification and attitude related to eating disorders was filled, anthropometric and clinical parameters were also measured during the Higher Teachers' Training College open days of year 2015. The prevalence of obesity amongst students was 3.8%, significantly higher (p=0.002) among female (5.9%) than men (1.1%). The students' attitudes about obesity were found not satisfactory, particularly in regard with the preference of sweet taste. In fact, the main practices eating disorders consisted of high consumption of soft drinks (67.8%), low consumption of fruits and vegetables (34.6%) and munching between meals (54%). Although the prevalence of obesity was low in this studied population, it is important to include nutrition courses in the training programs of this institution in order to give adequate nutrition knowledge to those future civil servants.

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INTRODUCTION

Obesity is a non-infectious disease, it is determined by body mass index (BMI) which is the ratio of weight to height squared (Kg/m^2) thus obesity corresponds with a BMI≥30 Kg/m^2 (Ravishanker *et al*., 2005). The prevalence of obesity is increasing worldwide, particularly in developing countries such as African countries which are facing a high rate of nutritional transition (Steyn *et al*., 2006, Bourne *et al*., 2002). The nutritional transition is the migration alimentary habits from a traditional alimentation to a western alimentation which is characterized by processed foods and soft drinks (Popkin, 1994, Popkin, 1998, Popkin, 1999). The etiology of obesity depends on many different modifiable risk factors such as nutritional knowledge, the level of physical activity, alimentary practices, stress and World Health Organization has recommended health promotion (WHO, 2004). Among adults, many studies show that counseling is a key element in the prevention of Non Communicable Diseases (Artinian *et al*., 2010; Hardcastle *et al*., 2008, Pignone *et al*., 2003). Most studies related to attitudes towards obesity are focused on medical practitioners and medical students, with time pressure in all training schools it is an obligation also to share and evaluate their adequate nutrition knowledge towards obesity. With the absence of physical activity in their time table, time pressure, students of the Higher Teacher's Training College of the University of Yaounde I are a hobbies group for evaluation of obesity attitudes. Therefore our study aimed to assess both obesity prevalence and attitudes of students of Higher Teacher's Training College of the University of Yaounde I.

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MATERIALS AND METHODS

A cross-sectional survey was conducted among the students of Higher Teacher's Training College of University of Yaounde I during the school opened days of December 2015. The aim of the study were to determine obesity prevalence and knowledge and attitudes toward obesity. The sample size of the student was not calculated because no previous study of obesity

prevalence exists among those students. The study was approved by the Education Planning Commission of the Medical Foundation André Fouda. All measurements and questionnaire were in accordance with the Helsinki Declaration (1983 version) and its program of prevention of chronic diseases which gave a technical support to this study. The Director of gave the permission to conduct research at the university campus. An informed consent to participate into the study was obtained from the students to who purpose and benefits of the study were explained. Admission to the study was based solely on voluntary participation and data collection was confidential and anonymous. The population of study was constituted with the students of belonging to the first and second training cycle. For data collection, a structured questionnaire consisted of sections for determination of socio-demographic factors, eating practices and nutritional knowledge toward obesity was gave to each student. Socio-demographic questionnaire included age, gender, region of origin, marital status, training cycle. The questionnaire was set thought the reviewed of published and unpublished documents on causes of obesity and co-morbidly. Anthropometric and clinical parameters were measured by standard techniques. The questionnaire was self-administered, but all participants had their height and weight measured in centimeters and kilograms, respectively, by the were measured and recorded by a single same researcher using the same scale and stadiometer. The Body Mass Index was calculated using the formula: BMI = weight (Kg)/Height^2 (m^2) (WHO, 1997).

Inclusion: Higher Teachers' Training College students, apparently healthy, aged between 18-40 years, volunteered for study.

Exclusion: Unhealthy with any clinical condition and those who were taking any medication. Statistical analyses were done using SPSS-20. Continuous variables are reported as means ± standard deviations (SD) and categorical variables are presented as percentages. P value of <0.05 was taken as statistically significant.

18-24 years was more represented in the study with 52.6% whereas the age bracket 35-44 was the less represented with 1.9%. According to BMI values were calculated and classified according to the WHO criteria in table 2. 1.8 were underweight (BMI < 18.5), 74.9 were normal (18.5 < BMI ≤ 24.9), 21.3 were overweight (25 < BMI $\chi\leq$ 29.9), and 3.8 obese (BMI ≥ 30). The prevalence of obesity in the study population was 3.5% with 1.1% in males and 5.9% in females. The prevalence of overweight was 21.3% with 16.3% in males and 26.1% in females.

Table 1. Prevalence of obesity in respect with the classification of WHO [1]

BMI Grade	Underweight %	Normal weight %	Overweight %	Obese %
Men	1.1	81.8	16.3	1.1
Women	2.5	68.1	26.1	5.9
Total	1.8	74.9	21.3	3.5

Table 2. Characteristics of the studied population

Variable		Percentage (%)
Sex		
	Male	43.6
	Female	56.4
Age trends(Years)		
18-24		52.6
25-34		45.5
35-44		1.9
Marital status		
	Married	9.5
	Unmarried	90.5
Training Cycle		
	First Cycle	48.8
	Second Cycle	51.2

Table 2 shows answers of the study population to questions linked to qualitative eating disorders. Among other things, it emerges of it that 67.8% of the study population regularly consume sweet drinks, 65.4% do not eat fruits and vegetables daily, 84.4% like the sweet taste, 90.0% do not have a meal

Table 3. Knowledge on Obesity Risk Factors and the Preventive

Do you regularly consume alcoholic drinks ?	10.0	90.0
Do you regularly take sweet drinks ?	67.8	32.2
Do you think that masticating rapidly reduces the sensation of hungry ?	31.8	68.2
Do you consume fruits and vegetables daily (3/5 recommanded/day) ?	34.6	65.4
Are your meals constitute with three dishes (starter, main course, dessert) ?	10.0	90.0
Publicity influences our choices toward foods which do not come up to our need: the choice is conditioned by the offer. Is it your case ?	36.0	64.0
Which taste do you like?		
	Sweet	84.4
	Salted	9.5
	Bitter	2.8
	Sour	3.3
Do you think that availability is the key element of alimentary over consumption?	55.9	44.1
Do you nibble between meals when you are not hungry?	54.0	46.0
To the question "Physical unactivity is not only represented by lack of physical activity but also by the fact to seat without working. Do you daily do physical activity?",	59.2%	40.8%
Do you think that the loss of our habits to consume traditional dishes is responsible of weight hold ?"	42.7%	57.3%
Do you think that the single evening meal with the same energetic quantity and the same quality put on weight contrary to the single morning meal?	71.1	28.9
Do you think it is better to take many small meals rather than a single substantial meal since the energetic expenditure for digestion of many meals is bigger than that of a single meal ?	27.5	72.5

RESULTS

Sociodemographic characteristics of the study population

Table 1 show that, out of 211 students, 56.4% were females while 43.6% were males. It is also show that the age bracket

constitute with a starter, a resistance and a dessert. Nevertheless, we can relieve that only 10.0% of the study population regularly alcoholic drinks. Then, the mean percentage of answers showing a bad attitude of the respondents related to qualitative eating disorders was 55.1%. Consequently, the attitudes of the study population related to

qualitative eating disorders were found bad. Concerning answers of the study population to questions related to alimentary rhythm troubles. So, 71.1% of respondents think that the single evening meal with the same energetic quantity and the same quality put on weight contrary to the single morning meal. Moreover, 72.5% of respondents think that it is better to take a single substantial meal rather than taking many small meals. From then on, the mean percentage of answers which show good attitudes of particpant related to alimentary rhythm troubles was 71.8%. Thus, the study population had good attitudes related to alimentary rhythm troubles. From then on, the percentage of "no" demonstrates a bad attitude related to intrinsic factors of the modern civilization to the study population.

Table 3 shows answers of participants to questions related to quantitative eating disorders. So, for 55.9% of the study population, the availability is the key element of alimentary overconsumption. Moreover, 54.0% of them nibble between meals when they are not hungry. Then, the mean percentage for answers that demonstrate a bad attitude was 55.0%. And it thus appears that our study population had a bad attitude related to quantitative eating disorders.

DISCUSSION

Obesity is a public health problem worldwide with both genetic and environmental factors that increases the risk of chronic diseases such as Cardiovascular Diseases , stroke, hypertension and diabetes. With the dramatic consequences of obesity, people attitudes of towards obesity is still neglected and previous studies focused mostly on medical student about obesity (Purohit *et al*, 2015**,** Van den Berg *et al*, 2012**,** Deotale *et al*, 2015). Studies shows that civil servants are more vulnerable to obesity than others, (Lallukka, *et al*, 2008) as inadequate eating habits are difficult to alter, this may put Higher Teachers' Training College students of University of Yaounde I at risk of acquiring Non Communicable Diseases particularly later on in life after their idemnification. This is the first study dealing with obesity prevalence and attitude among students of Higher Teachers' Training College, University of Yaounde I Cameroon. This study has revealed a low prevalence of obesity with gender distribution. This prevalence is lower than the one reported reported among Cameroonian students (Mandengue *et al*., 2015). Our study is also supported with the findings of the study conducted among students of an south african university by Van den Berg *et al* (2012) and the south india study (Ramaiah, 2015). As assessed in previous studies conducted elsewhere, gender plays an important pattern in prevalence of overweight and obesity among men and women, generally woman generally more prone to overweight and obesity than men. This observation is similar to these studies Puoane *et al*., 2002) [6] and Bourne *et al*. (2002). In another similar study conducted in India among medical students, the prevalence of obesity according to WHO international classification was 3.34% and 17.66% according to Asia-pacific guidelines of (WHO, 2004). In our study, the attitudes related to quantitative and qualitative eating disorders were found bad whereas attitudes related to alimentary rhythm troubles were found good. In a study conducted in South Africa beside students of university in order to establish a relation between BMI and nutritional knowledge's and practices, it appeared that those students did not have enough knowledge's nor good nutritional practices related to obesity, consequently, they were at risk for obesity(Van den Berg *et al*, 2012). So, assuming that knowledge's affect attitude and that attitude affects practices ([M]alik *et al*,2006), we can say that since the attitudes related to eating disorders of our study population were found globally not satisfactory due particularly to its propensity to consume sweet drinks, it put them at higher risk of obesity([M]alik *et al*,2013,[O]MS,2003). The attitude of our study population related to antenatal influence was found bad. However, there are many antenatal factors involved in the appearance of obesity for an individual and we assessed the attitudes of students of the Higher Teachers' Training College of the University of Yaounde I only about one of them. From then on, concerning antenatal influence, we cannot conclude that this single opinion put them at risk for obesity. Just as which concerns attitude related to intrinsic factors of the modern civilization; in fact, this aspect of attitudes related to obesity was also assessed through a single question. So, although the attitude related to intrinsic factors of the modern civilization was found bad on this basis, we cannot conclude if it put our study population at risk for obesity. Nevertheless, it is known that it is a combination of factors that leads to obesity (Bourne *et al*., 2002). Then, attitude of our study population being not satisfactory for both antenatal influence and intrinsic factors of the modern civilization, only this may already put her at risk for obesity although we used only one question to assess each one of those factors.

Our study revealed a satisfactory attitude related to sedentarity to our study population. Thus, the students of the Higher Teachers' Training College of the University of Yaounde I willingly do physical activities. The increasing of physical activities being in priority recommended by WHO both for preventing and for treating obesity[1,i], we can thus say that this attitude of our study population help her to prevent obesity since the obesity prevalence was found not high. The main strengths of this study include the use of standard methods. The main limitation of this study is the small sample obtained and these findings may not be generalisable to all students. To avoid a long questionnaire some question related to obesity attitude has been have been removed. As data were self-reported, it may not reflect the reality of respondents' attitudes and practices.

Conclusion

The prevalence of obesity amongst students of the Higher Teachers' Training College of the University of Yaounde I was 3.4% with 1.1% in males and 5.9% in females. Although the prevalence of obesity was found weak in our study population, it would be important to include nutrition classes in the training programs of the Higher Teachers' Training College of the University of Yaounde I to provide students of this institution appropriate knowledge in nutrition.

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