IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 22, Issue 12 Ser.8 (December. 2023), PP 15-18
www.iosrjournals.org

Prevalence Of Obesity And Overweight Among The Minor Ethnic Bishnupriya Manipuri Community In Bangladesh

Swapan Kumar Singha*[1], Md Shah Emran[2], Sharadindu Kanti Sinha[3], Sunia Sinha[4], Kamal Uddin Ahmed[5], Dihan Tahite[6]
[1]department Of Medicine, Sheikh Hasina Medical College, Habiganj, Bangladesh
[2]department Of Endocrinology, Sheikh Hasina Medical College, Habiganj, Bangladesh
[3]department Of Pharmacology, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh
[4]250 Bedded General Hospital, Moulvibazar, Bangladesh
[5]department Of Cardiology, Bangabandhu Sheikh Mujib Medical University (Bsmmu), Dhaka, Bangladesh
[6]department Of Pharmacy, University Of Dhaka

Abstract
Background: *The increasing prevalence of overweight or obesity is a leading public health concern in high, middle, and low-income countries. The fundamental cause of obesity and overweight is an energy imbalance between calories consumed and calories expended. We do have not enough research-based information regarding the prevalence of obesity and overweight among the minor ethnic Bishnupriya Manipuri community in Bangladesh.*
Aim of the study: *This study aimed to assess the prevalence of obesity and overweight among the minor ethnic Bishnupriya Manipuri community in Bangladesh.*
Methods: *This survey-based prospective observational study was conducted in different villages of Kamalgonj Upazila under the Moulvibazar district in Bangladesh from March 2023 to June 2023. In total 280 individuals from minor ethnic Bishnupriya Manipuri community were enrolled in this study as the study subjects. A convenient purposive sampling technic was used in sample selection. Data were recorded in a pre-designed questionnaire. Verbal agreement and proper diagnostic documents were considered for detecting overweight or obese cases among the total study population. All data were processed, analyzed, and disseminated by using the MS Office program.*
Results: *The male-female ratio of the participants was 1:1.2; the highest number of patients (64%) were from the 36-65 years age group. Among our total participants, near about half (45%) of the cases had normal BMI (18-24.9), 34% had overweight status (BMI: 25-29.9), 15% had obesity (BMI ≥30) and 7% were underweight (BMI<18.5). The frequency of obesity and overweight was found 49%. In analyzing the obesity grades of the total of our obese cases (n=41) we found that the majority (88%) of them were with class I obesity (BMI: 30-34.9). Besides, 7% and the rest of the 5% were with class II and class III obesity respectively.*
Conclusion: *The prevalence of obesity and/or overweight cases in the total Bishnupriya Manipuri population and the prevalence of class I obesity among total obese cases, are alarming.*
Keywords: *Prevalence, Obesity, Overweight, BMI, Bishnupriya Manipuri, Physical inactivity*

Date of Submission: 18-12-2023 Date of Acceptance: 28-12-2023

I. INTRODUCTION

Overweight and obesity represent the excess accumulations of adipose tissue which is associated with impaired physical and psychosocial health as well as well-being [1,2]. More than 1.9 billion adults worldwide aged 18 years or more are overweight and obese respectively, and the number of deaths attributed to obesity and overweight is greater than that linked to underweight [1]. In Bangladesh, the majority of Manipuri live in the Sylhet division. The majority of them live in different villages of Kamalgonj Upazila under the Moulvibazar district. According to ethnic origin, three divisions of Manipuri are Bishnupriya, Meitei and Pangns. [3] From the linguistic point of view, the Manipuri are divided into two groups: the Meitei and the Bishnupriyas. Bishnupriyas are mainly Indo-Aryan, Meitei are mongoloid and Pangans are admixture of both Indo-Aryan and Mongoloid ethnic groups. The Manipuris migrated in the seventeenth century from the Indian state of Manipur [4]. Since the migration, they maintained their integral identity through cultural practices. Their distinct characteristics, while adapting to the local context, are remarkably reflected in their dress, language, cultural practices, rituals, and

architecture. As Rapoport stated, vernacular architecture is a direct expression of society as well as culture [5]. Therefore, Manipuri's traditional architecture, as a visual art reflects their cultural identity as an agrarian society. Tangible material culture has blended with intangible values of ethnicity and religious spirituality. We do have not enough research-based data on the prevalence of obesity or overweight among the minor ethnic Bishnupriya Manipuri community in Bangladesh. According to the WHO (World Health Organization), across different countries of the world, overweight and obesity are recognized as important public health problems. Generally, obesity is measured by using body mass index (BMI), which has been proven to increase the risk of coronary heart disease, hypertension, stroke, diabetes and other non-communicable diseases [6]. But in a study [7] it was also reported that body mass index alone cannot provide complete information on body-fat distribution, which is also associated with metabolic risk. Decades of evidence reported that obese people have a higher risk of all-cause of mortality; a constellation of serious health conditions and diseases such as T2DM, hypertension, stroke, dyslipidemia, coronary heart disease, cancers and breathing complications and even difficulty with physical functioning and low quality of life [8]. The WHO defines overweight and obesity as BMI (Body mass index) of 25–29.9 kg/m^2 and ≥ 30 kg/m^2, respectively. The IDF (International Diabetes Federation) emphasizes excess central or truncal obesity using waist circumference for which the IDF suggests the criterion value, for the Middle East as well as the Mediterranean region, be based on the European threshold, at least until the specific data are available for this region [9]. This study aimed to assess the prevalence of obesity and overweight among the minor ethnic Bishnupriya Manipuri community in Bangladesh.

II. METHODOLOGY

This was a prospective observational study that was conducted in different villages of Kamalgonj Upazila under the Moulvibazar district in Bangladesh from March 2023 to June 2023. In total 280 individuals from minor ethnic Bishnupriya Manipuri community were enrolled in this study as the study subjects. A convenient purposive sampling technic was used in sample selection. For this study, the BMI (Body Mass Index) was defined and classified as per the guideline described by Connor B et al. [10]. Data were recorded in a pre-designed questionnaire. Verbal agreement and proper diagnostic documents were considered for detecting obesity and overweight cases among the total study population. Obeying the inclusion criteria of this current study individuals from the Bishnupriya Manipuri community aged by ≥18 years from either gender were included. On the other hand, according to the exclusion criteria of this study, individuals who currently live in the same community but are historically not Manipuri were excluded. Properly written consent was taken from all the participants before data collection. All data were processed, analyzed and disseminated by using the MS Office program.

III. RESULT

In this study, among the total participants, 47% were male whereas the rest 53% were female. So, the male-female ratio of the participants was 1:1.2. We found that the highest number of patients (64%) were from the 36-65 years age group. Among our total participants, near about half (45%) of the cases had normal BMI (18-24.9), and 34% had overweight status (BMI: 25-29.9). Besides, 15% were obese (BMI: ≥30) and 7% were underweight (BMI<18.5). About half of our participants (49%) had 'obesity and/or overweight'. The frequency of 'obesity and/or overweight' was found 49%. In analyzing the obesity grades of the total of our obese cases (n=41) we found that the majority (88%) of them were with class I obesity (BMI: 30-34.9). Besides, 7% and the rest of the 5% were with class II and class III obesity respectively. In this study, the majority of the participants (55%) were moderate workers, 32% were sedentary and the rest 14% were heavy workers. Only 1% of our participants had polycystic ovarian syndrome. In our study, in distributing the possible risk factors for obesity among the participants, we observed that the majority of participants (53%) were female and aged over 45 years. Besides, as possible risk factors for sedentary workers, waist circumference status (cm)>88 and BMI (Kg/m^2) > 29.9 were found in 32%, 59% and 12% respectively.

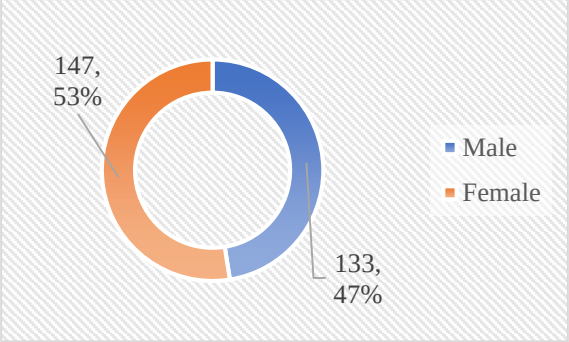

Figure 1: Distribution of participants as per gender (N=280)

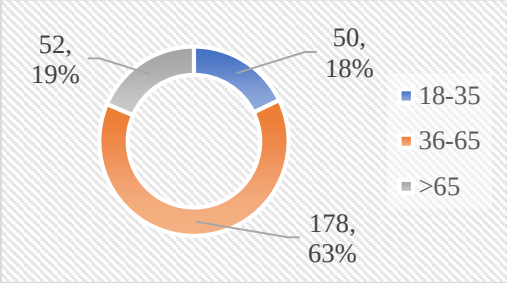

Figure 2: Distribution of participants as per age (N=280)

Table 1: Distribution of participants as per BMI (N=280)

BMI (Kg/m^2)		n	%
Class	Range		
Underweight	<18.5	19	7%
Normal	18-24.9	125	45%
Overweight	25-29.9	95	34%
Obese	≥30	41	15%

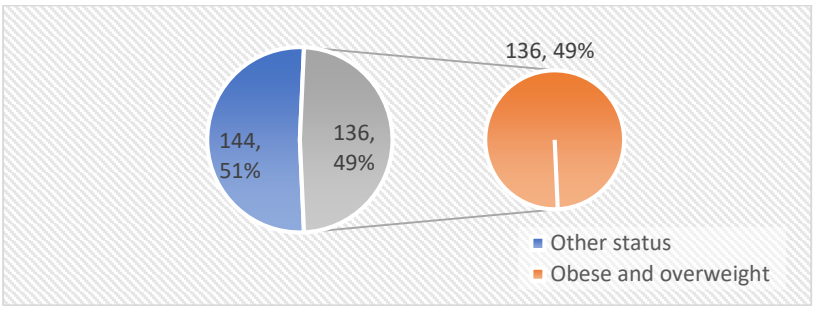

Figure 3: Prevalence of obesity and overweight among participants (N=280)

Table 2: Grading of obese patients (n=41)

Class	BMI range	n	%
Class I	30-34.9	36	88%
Class II	35-39.9	3	7%
Class III	≥40	2	5%

Table 3: Clinical features distribution (N=280)

Features	n	%
Activity type		
Sedentary worker	89	32%
Moderate worker	153	55%
Heavy worker	38	14%
Polycystic ovarian syndrome		
Yes	2	1%
No	278	99%
Smoking habit		
Yes	43	15%
No	237	85%

IV. DISCUSSION

This study aimed to assess the prevalence of obesity and overweight among the minor ethnic Bishnupriya Manipuri community in Bangladesh. In this study, among the total participants, 47% were male whereas the rest 53% were female. So, the male-female ratio of the participants was 1:1.2. Earlier cultural practices whereby women were discouraged from engaging in voluntary exercise, in combination with increasing consumption of calorie-dense Western foods may be a contributing factor to the higher prevalence of obesity in women compared

to men [11, 12, 13]. Among our total participants, near about half (45%) of the cases had normal BMI (18-24.9), and 34% had overweight status (BMI: 25-29.9). Besides, 15% and 7% were obese (BMI≥30) and underweight (BMI<18.5) respectively. In this study, the frequency of obesity and/or overweight was found 49%. In a Bangladeshi study [14], the overall prevalence of general obesity and abdominal obesity was 18.2% and 41.9% respectively. In analyzing the obesity grades of the total of our obese cases (n=41) we found that the majority (88%) of them were with class I obesity (BMI: 30-34.9). Besides, 7% and the rest of the 5% were with class II and class III obesity respectively. A higher rate of obesity was also found in the urban residents in Myanmar [15] and India [16]. In Bangladesh, a very limited number of studies have been conducted to estimate the prevalence of obesity in the general population. [14] A previous study that was conducted in the Dhaka region of Bangladesh also found a high prevalence of general obesity (26.2%) and abdominal obesity (39.8%) and that rate was higher in women [17]. In this study, 15% of our participants had a smoking habit. A study from the UK found that smoking was strongly associated with a higher risk of obesity [18]. All the findings of this current study may be helpful in further similar studies.

Limitation of the study:

This study was conducted over a very short period. We did not find any similar research work to follow or get any prior idea for conducting such research in a remote community like Bishnupriya Manipuri community.

V. CONCLUSION

As per the findings of this current study, we can conclude that the prevalence of obesity and/or overweight cases in the total Bishnupriya Manipuri population and the prevalence of class I obesity among total obese cases, both are alarming. Awareness development regarding the prevention and management of obese and overweight cases may be helpful for the community in ensuring a healthy society. Immediate necessary steps should be taken by the national healthcare system to resolve this issue. For getting more specific results, we would like to recommend conducting similar studies in several places with larger-sized samples.

Funding: No funding sources.

Conflict of interest: None declared.

REFERENCES

[1]. Obesity And Overweight [Https://Www.Who.Int/News-Room/Fact-Sheets/Deta Il/Obesity-And-Overweight].
[2]. Naser KA, Gruber A, Thomson GA. The Emerging Pandemic Of Obesity And Diabetes: Are We Doing Enough To Prevent A Disaster? Int J Clin Pract. 2006; 60(9):1093–7. Https://Doi.Org/10.1111/J.1742-1241.2006.01003.X.
[3]. Sinha, Dr. Kali Prasad (1984): The Bishnupriya Manipuris- Their Language & Culture, AJA BABAISENA PRAKASHANI, Kachudaram Silchar. Pp 6-7.
[4]. Sheram, A. K. (1996). Bangladesher Monipuri Troye Songscritir Tribeni Songgome. Dhaka:Agamee Prakashani.
[5]. Rapoport, A. (1969).House Form And Culture. New Jersey: Prentice Hall Inc.
[6]. Urek R, Crncević-Urek M, Cubrilo-Turek M. Obesity--A Global Public Health Problem. Acta Medica Croat Cas Hravatske Akad Med Znan. 2007; 61:161–4.
[7]. Ross R, Neeland IJ, Yamashita S, Shai I, Seidell J, Magni P, Et Al. Waist Circumference As A Vital Sign In Clinical Practice: A Consensus Statement From The IAS And ICCR Working Group On Visceral Obesity. Nat Rev Endocrinol.2020;16:177–89.
[8]. Yao TC, Tsai HJ, Chang SW, Chung RH, Hsu JY, Tsai MH, Et Al. Obesity Disproportionately Impacts Lung Volumes, Airflow And Exhaled Nitric Oxide In Children. Plos One. 2017;12(4):E0174691. Https://Doi.Org/10.1371/Journal. Pone.0174691
[9]. IDF. The IDF Consensus Worldwide Definition Of The Metabolic Syndrome; 2005. P. 131–9.
[10]. Weir CB, Jan A. BMI Classification Percentile And Cut Off Points. [Updated 2022 Jun 27]. In: Stat Pearls [Internet]. Treasure Island (FL): Stat Pearls Publishing; 2023 Jan-. Available From: Https://Www.Ncbi.Nlm.Nih.Gov/Books/NBK541070/.
[11]. Musaiger AO. The State Of Food And Nutrition In The Arabian Gulf Countries. World Rev Nutr Diet. 1987;54:105–173. Doi: 10.1159/000415304. [Pubmed] [Crossref] [Google Scholar]
[12]. Joseph S, Nağmābādī A. Encyclopedia Of Women & Islamic Cultures: Family, Body, Sexuality And Health, Vol. 3: Brill; 2003.
[13]. Al-Awadi F, Amine E, Z G . Food Consumption And Dietary Habits In Kuwait. Kuwait: Food And Nutrition Administration, Ministry Of Health Kuwait; 1997. [Google Scholar]
[14]. Ali, N., Mohanto, N.C., Nurunnabi, S.M. Et Al. Prevalence And Risk Factors Of General And Abdominal Obesity And Hypertension In Rural And Urban Residents In Bangladesh: A Cross-Sectional Study. BMC Public Health 22, 1707 (2022). Https://Doi.Org/10.1186/S12889-022-14087-8.
[15]. Thapa R, Dahl C, Aung WP, Bjertness E.Urban–Rural Differences In Overweight And Obesity Among 25–64 Years Old Myanmar Residents: A Cross-Sectional, Nationwide Survey. BMJ Open. 2021;11:E042561.
[16]. Ahirwar R, Mondal PR. Prevalence Of Obesity In India: A Systematic Review. Diabetes Metab Syndr Clin Res Rev. 2019;13:318–21.
[17]. Siddiquee T, Bhowmik B, Da Vale Moreira NC, Mujumder A, Mahtab H, Khan AKA, Et Al. Prevalence Of Obesity In A Rural Asian Indian (Bangladeshi) Population And Its Determinants. BMC Public Health. 2015;15:860.
[18]. Dare S, Mackay DF, Pell JP. Relationship Between Smoking And Obesity: A Cross-Sectional Study Of 499,504 Middle-Aged Adults In The UK General Population. Plos One. 2015;10(4):E0123579. Doi: 10.1371/Journal.Pone.0123579.