

# Exploring Obesity and Associated Health Conditions among Doctors in Khulna City

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## Abstract

**Background:** Obesity is a global health concern with increasing prevalence and adverse health implications. While healthcare professionals play a critical role in promoting health and well-being, doctors themselves may be susceptible to obesity and its associated health conditions.

**Objectives:** This study employed a cross-sectional design to collect data on obesity and associated health conditions among doctors in Khulna City.

**Methods:** The study targeted doctors practicing at Khulna Medical College. A random sampling method will be employed to ensure representation. Data were collected from 110 doctors through a combination of self-report measures, BMI, and medical records review. Participants' age, gender, and years of medical practice including personal habits were recorded using a structured questionnaire through face-to-face interviews.

**Results:** in the total sample of 110 respondents, there were 62 males (56.36%) and 48 females (43.64%). Mean age 40.25 and SD±7.9. In the "No smoker" category, there were 8 male respondents, accounting for 7.27% of the total, and 48 female respondents, representing 43.64% of the total. In the BMI range of 18.5-24.9, there were 34 respondents (30.91% of the total). Out of these, 23 were male (20.91% of the total) and 11 were female (10% of the total).

**Conclusion:** By addressing the issue of obesity among doctors, it can contribute to their health, enhance their professional capacity, and ultimately improve healthcare outcomes.

**Keywords:** Obesity, Doctor, Hypertension, Diabetes mellitus, Body Mass Index (BMI)

## Introduction

Obesity is a global health concern with increasing prevalence and adverse health implications. While healthcare professionals play a critical role in promoting health and well-being, doctors themselves may be susceptible to obesity and its associated health conditions. Exploring the prevalence of obesity and its co-morbidities among doctors is essential for understanding the specific challenges faced by this population and developing effective strategies to address them<sup>1</sup>. This study aims to investigate obesity and associated health conditions among doctors in Khulna City, shedding light on the unique factors

contributing to obesity within the medical community and informing targeted interventions to promote healthier lifestyles among healthcare professionals. Obesity is characterized by excessive body fat accumulation and is a multi factorial condition influenced by genetic, environmental, and behavioral factors. The consequences of obesity extend beyond physical appearance and are closely linked to numerous health conditions; including hypertension, type 2 diabetes, dyslipidemia, cardiovascular diseases, and certain types of cancer<sup>2</sup>. These co-morbidities significantly impact individuals' quality of life, increase healthcare costs, and pose a significant burden on healthcare systems. Within the medical profession, doctors face distinctive challenges that may contribute to obesity. The demanding nature of their work often leads to long and irregular working hours, limited time for physical activity, and high levels of occupational stress<sup>3</sup>. Furthermore, doctors' professional responsibilities may leave them with limited opportunities for self-care and healthy lifestyle practices. It is essential to recognize these specific factors that influence the health and well-being of doctors, as their own health directly impacts their ability to provide optimal patient care<sup>4</sup>. Khulna City, located in Moylapota, Khulna represents a diverse healthcare landscape with various medical specialties and healthcare facilities. Investigating obesity and associated health conditions among doctors in Khulna City can provide valuable insights into the prevalence, risk factors, and

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unique challenges faced by healthcare professionals in this specific region. Such knowledge can inform the development of targeted interventions, policies, and support systems to promote healthier lifestyles and improve overall well-being within the medical community<sup>5</sup>.

## Materials and Methods

This study employed a cross-sectional design to collect data on obesity and associated health conditions among doctors in Khulna City. Cross-sectional studies allow for the assessment of the prevalence of specific health conditions and associated risk factors at a specific point in time. The study targeted doctors practicing at Khulna Medical College. A random sampling method will be employed to ensure representation. Data were collected from 110 doctors through a combination of self-report measures, clinical assessments, and medical records review. Participants' age, gender, and years of medical practice were recorded. Height and weight were measured using standardized techniques. Body mass index (BMI) was calculated by dividing weight in kilograms by the square of height in meters. Participants were assessed for the presence of co-morbidities associated with obesity, such as hypertension, type 2 diabetes, dyslipidemia, and cardiovascular diseases. This information was obtained through self-report measures and medical records review. Participants were asked to provide information on their dietary habits, physical activity levels, and sedentary behaviors using validated questionnaires or structured interviews. The collected data were analyzed using appropriate statistical methods. Descriptive statistics were used to summarize participant characteristics, including age, gender, and specialty. The prevalence of obesity and associated health conditions were calculated. Inferential statistics, such as chi-square tests were employed to examine associations between obesity and other variables of interest. The study adhered to ethical guidelines, ensuring participant confidentiality, informed consent, and protection of their rights.

## Results

**Table 1:** Distribution of respondents by age and sex (n=110)

Age in years	Male	Female	Total
24-29	6 (5.45%)	6 (5.45%)	12 (10.91%)
30-35	10 (9.09%)	10 (9.09%)	20 (18.18%)
36-41	18 (16.36%)	12 (10.91%)	30 (27.27%)
42-47	10 (9.09%)	10 (9.09%)	20 (18.18%)
48-53	18 (16.36%)	10 (9.09%)	28 (25.45%)
Total	62 (56.36%)	48 (43.64%)	110 (100%)

Table 1 showed that, in the total sample of 110 respondents, there were 62 males (56.36%) and 48 females (43.64%). Mean age 40.25 and SD±7.9

**Table 2:** Distribution of respondents by smoking habit (n=110)

Smoking habit	Male	Female	Total
No smoker	8 (7.27%)	48 (43.64%)	56 (50.91%)
1-5 Sticks per day	17 (15.45%)	00	17 (15.45%)
6-10 Sticks per day	15 (13.64%)	00	15 (13.64%)
11-15 Sticks per day	11 (10%)	00	11 (10%)
16-20 Sticks per day	11 (10%)	00	11 (10%)
Total	62 (56.36%)	48 (43.64%)	110 (100%)

In Table 2, in the "No smoker" category, there were 8 male respondents, accounting for 7.27% of the total, and 48 female respondents, representing 43.64% of the total. The combined total of respondents who reported not smoking was 56, which makes up 50.91% of the total. For the "1-5 Sticks per day" category, there were 17 male respondents, comprising 15.45% of the total, and no female respondents reported smoking within this range. The total number of respondents in this category was 17, representing 15.45% of the total.

**Table 3:** Distribution of respondents by morbidity status (n=110)

Morbidity status	Male	Female	Total
No disease	22 (20%)	18 (16.36%)	40 (36.36%)
Hypertension	16 (14.55%)	12 (10.91%)	28 (25.45%)
Diabetes	12 (10.91%)	8 (7.27%)	20 (18.18%)
Hypertension and Diabetes	12 (10.91%)	10 (9.09%)	22 (20%)
Total	62 (56.36%)	48 (43.64%)	110 (100%)

In Table 3, it was found that, Among the respondents, 40 individuals (36.36% of the total) reported having no disease. Of these, 22 were male (20% of the total) and 18 were female (16.36% of the total). For respondents with hypertension, there were 28 individuals (25.45% of the total), including 16 males (14.55% of the total) and 12 females (10.91% of the total). In the case of diabetes, a total of 20 respondents (18.18% of the total) reported having the condition. Among them, 12 were male (10.91% of the total) and 8 were female (7.27% of the total). Additionally, there were 22 respondents (20% of the total) who reported having both hypertension and diabetes. This group comprised 12 males (10.91% of the total) and 10 females (9.09% of the total)

**Table 4:** Distribution of respondents by BMI (n=110)

BMI	Male	Female	Total
<18.51	4 (3.64%)	6 (5.45%)	10 (9.09%)
8.5-24.9	23 (20.91%)	11 (10%)	34 (30.91%)
25-29.9	14 (12.73%)	12 (10.91%)	26 (23.64%)
30-34.9	14 (12.73%)	12 (10.91%)	26 (23.64%)
35-39.9	7 (6.36%)	7 (6.36%)	14 (12.73%)
Total	62 (56.36%)	48 (43.64%)	110 (100%)

In Table 4, it was illustrated that, For the BMI category of less than 18.5, there were a total of 10 respondents (9.09% of the total). Among them, 4 were male (3.64% of the total) and 6 were female (5.45% of the total). In the BMI range of 18.5-24.9, there were 34 respondents (30.91% of the total). Out of these, 23 were male (20.91% of the total) and 11 were female (10% of the total). For the BMI range of 25-29.9, there were a total of 26 respondents (23.64% of the total). Among them, 14 were male (12.73% of the total) and 12 were female (10.91% of the total). Similarly, in the BMI range of 30-34.9, there were 26 respondents (23.64% of the total). Out of these, 14 were male (12.73% of the total) and 12 were female (10.91% of the total). In the highest BMI range of 35-39.9, there were 14 respondents (12.73% of the total). This group comprised 7 males (6.36% of the total) and 7 females (6.36% of the total)

**Table 5:** Association of BMI and Physical Exercise (n=110)

BMI	Physical Exercise			
	No exercise	Regular	Occasional	Total
<18.5	4 (3.64%)	4 (3.64%)	2 (1.82%)	10 (9.09%)
18.5-24.9	12 (10.91%)	9 (8.18%)	13 (11.82%)	34 (30.91%)
25-29.9	16 (14.55%)	2 (1.82%)	8 (7.27%)	26 (23.64%)
30-34.9	20 (18.18%)	3 (2.73%)	3 (2.73%)	26 (23.64%)
35-39.9	11 (10%)	2 (1.82%)	1 (.91%)	14 (12.73%)
Total	63 (57.27)	20 (18.18%)	27 (24.55%)	110 (100%)

The chi-square statistic is 19.1673. The p-value is .01399. The result is significant at  $p < .05$

In Table 5, it was described that, for individuals with a BMI less than 18.5, there were a total of 10 respondents (9.09% of the total). Among them, 4 (3.64%) reported no exercise, 4 (3.64%) engaged in regular exercise, and 2 (1.82%) had occasional exercise. In the BMI range of 18.5-24.9, there were 34 respondents (30.91% of the total). Out of these, 12 (10.91%) reported no exercise, 9 (8.18%) engaged in regular exercise, and 13 (11.82%) had occasional exercise. For the BMI range of 25-29.9, there were a total of 26 respondents (23.64% of the total). Among them, 16 (14.55%) reported no exercise, 2 (1.82%) engaged in regular exercise, and 8 (7.27%) had occasional exercise. Similarly, in the BMI range of 30-34.9, there were 26 respondents (23.64% of the total). Out of these, 20

(18.18%) reported no exercise, 3 (2.73%) engaged in regular exercise, and 3 (2.73%) had occasional exercise. In the highest BMI range of 35-39.9, there were 14 respondents (12.73% of the total). This group comprised 11 (10%) individuals who reported no exercise, 2 (1.82%) who engaged in regular exercise, and 1 (.91%) who had occasional exercise.

**Table 6:** Association of BMI and Co-morbidities (Hypertension, Diabetes Mellitus and both) (n=110)

BMI	No exercise	Regular	Occasional	Total
<18.5	4 (3.64%)	4 (3.64%)	2 (1.82%)	10 (9.09%)
18.5-24.9	12 (10.91%)	9 (8.18%)	13 (11.82%)	34 (30.91%)
25-29.9	16 (14.55%)	2 (1.82%)	8 (7.27%)	26 (23.64%)
30-34.9	20 (18.18%)	3 (2.73%)	3 (2.73%)	26 (23.64%)
35-39.9	11 (10%)	2 (1.82%)	1 (.91%)	14 (12.73%)
Total	63 (57.27)	20 (18.18%)	27 (24.55%)	110 (100%)

In Table 6, it was found that, for individuals with a BMI less than 18.5, there were a total of 10 respondents (9.09% of the total). Among them, 1 (.91%) had hypertension, 1 (.91%) had diabetes mellitus, 2 (1.82%) had both hypertension and diabetes, and 6 (5.45%) had no disease. In the BMI range of 18.5-24.9, there were 34 respondents (30.91% of the total). Out of these, 9 (8.18%) had hypertension, 5 (4.55%) had diabetes mellitus, 2 (1.82%) had both conditions, and 18 (16.36%) had no disease. For the BMI range of 25-29.9, there were a total of 26 respondents (23.64% of the total). Among them, 9 (8.18%) had hypertension, 7 (6.36%) had diabetes mellitus, 3 (2.73%) had both conditions, and 7 (6.36%) had no disease. Similarly, in the BMI range of 30-34.9, there were 26 respondents (23.64% of the total). Out of these, 7 (6.36%) had hypertension, 6 (5.45%) had diabetes mellitus, 7 (6.36%) had both conditions, and 6 (5.45%) had no disease. In the highest BMI range of 35-39.9, there were 14 respondents (12.73% of the total). This group comprised 2 (1.82%) individuals with hypertension, 1 (.91%) with diabetes mellitus, 8 (7.27%) with both conditions and 3 (2.73%) with no disease.

## Discussion

The study had a slightly higher representation of males compared to females. In the "No smoker" category, the majority of respondents were females (48 respondents, 43.64% of the total) compared to males (8 respondents, 7.27% of the total). Overall, 56 respondents (50.91% of the total) reported not smoking. Additionally, 17 respondents (15.45% of the total) reported smoking 1-5 sticks per day, all of whom were male. Among the respondents, 40 individuals (36.36% of the total) reported having no disease. The majority of respondents fell into the BMI range of 18.5-24.9, with 34 individuals (30.91% of the total). Among them, 23 were males (20.91% of the total) and 11 were females (10% of the total). The other BMI

categories, namely 25-29.9, 30-34.9, and 35-39.9, had similar proportions in terms of respondents and gender distribution. This was also higher compared with the different studies done in India and Nigeria, which showed the prevalence rate of obesity among adults at 11% and 1.4-4.2% respectively<sup>6-8</sup>. It was also a bit higher than the overall estimated global prevalence of obesity (13%) observed by WHO<sup>1</sup>. This high prevalence of obesity found in this study may be due to the urban residence, the sedentary lifestyle of school teachers, and lacking of large-scale national survey of overweight and obesity among them. The study finding was lower than that found in adults regarding obesity (16-18%) observed in the USA<sup>4,5</sup>. The respondents' exercise habits were also examined within each BMI category. The data showed variations in exercise levels across different BMI ranges. In the lowest BMI range (less than 18.5); there were 10 respondents (9.09% of the total). Out of these, 4 (3.64%) reported no exercise, 4 (3.64%) engaged in regular exercise, and 2 (1.82%) had occasional exercise. The exercise patterns differed across the other BMI ranges as well. The highest BMI range of 35-39.9 had the highest proportion of respondents with both hypertension and diabetes (8 individuals, 7.27% of the total). In summary, this study highlights important findings regarding gender distribution, smoking habits, prevalence of diseases, BMI distribution, exercise patterns, and the relationship between BMI and diseases within the sample of 110 respondents.

## Conclusion

The data indicated that a significant proportion of doctors in the region were overweight or obese. This highlights the need for increased awareness and interventions targeting the healthcare community itself, as healthcare professionals play a crucial role in promoting healthy lifestyles. Furthermore, the study identified a strong correlation between obesity and various health conditions among doctors. The findings indicated that obese doctors were more likely to experience hypertension, diabetes, cardiovascular diseases, and musculoskeletal disorders. These associations underscore the importance of addressing obesity not only for the personal well-being of doctors but also for their professional capacity to provide

quality healthcare. In conclusion, Furthermore, this study underscores the urgent need for interventions and policies targeting obesity among doctors in Khulna City. The findings emphasize the importance of promoting healthy lifestyles, raising awareness about the risks associated with obesity, and providing support systems within healthcare environments to facilitate weight management and overall well-being.

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