

Relationship Between Health Workers' Body Mass Index, Emotional Eating, and Uncontrolled Eating

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Abstract

Obesity and overweight are significant public health concerns globally, with healthcare professionals being particularly vulnerable due to high job demands and stress. The relationship between body mass index (BMI), job stress, and eating behaviors remains underexplored in this population, despite evidence linking workplace stress to unhealthy eating habits and weight gain. This study, conducted over three months, assessed the relationship between BMI, job stress, and eating behaviors among 400 male and female healthcare professionals. Participants were classified into normal, overweight, and obese BMI categories based on measured weight and height. Data were collected using the Brief Job Stress Questionnaire and the Adult Eating Behaviour Questionnaire (AEBQ). Statistical analysis, including descriptive statistics and Spearman's rank correlation, was performed using SPSS version 28, with a significance threshold of $p \leq 0.05$. Among the participants, 230 had normal BMI, 110 were overweight, and 60 were classified as obese (class 1 and class 2). Physiotherapists reported the highest levels of job stress, particularly in the normal BMI category, while dental professionals experienced the least. Eating behaviors were elevated in 260 participants, with mean AEBQ scores varying across BMI categories. Despite the high prevalence of job stress and altered eating behaviors, the correlation between BMI, job stress, and eating behavior was weak and not statistically significant. The study highlights that while job stress and unhealthy eating behaviors are prevalent among healthcare professionals, their direct correlation with BMI remains inconclusive. Lifestyle factors such as physical activity and dietary habits may play a more critical role in influencing BMI, underscoring the need for targeted interventions to promote healthier lifestyles in this population.

Keywords: Health Workers', Uncontrolled Eating, Emotional Eating.

Introduction

The World Health Organization (WHO) defines obesity as the excessive or abnormal accumulation of body fat that poses a risk to health (1). Overweight is characterized by a body mass index (BMI) between 25 and 29.9 kg/m², while a BMI of 30 kg/m² or higher is categorized as obesity (2). Obesity and overweight have become critical public health challenges in many regions, with their prevalence varying significantly between rural and urban populations (3). Studies have shown that obesity is more common in urban areas compared

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to rural settings, with rates ranging from 8% to 38% in rural regions and 13% to 50% in urban areas (4). Among certain communities, particularly those in urban environments, obesity and overweight are highly prevalent among the working population (5).

The management of obesity primarily involves lifestyle interventions, dietary adjustments, and, where appropriate, pharmacological treatments. Medications such as sibutramine and orlistat, under medical supervision, are often used in conjunction with low-calorie diets to facilitate weight loss (6). Surgical interventions, including bariatric procedures like gastric bypass, sleeve gastrectomy, adjustable gastric bands, and biliopancreatic diversion with duodenal switch, are employed to promote weight reduction by limiting stomach capacity, reducing nutrient absorption, or combining these mechanisms. Minimally invasive laparoscopic techniques are also used for surgical weight management. Complementary approaches such as physical activity and combining diet modifications with exercise are recommended for sustainable weight loss (7).

Dietary strategies play a crucial role in managing obesity. Plant-based diets rich in grains, fruits, and vegetables, as well as low-fat Ornish diets, have been advocated by organizations like the American Heart Association. Similarly, the Mediterranean diet, which emphasizes the consumption of olive oil, nuts, and fish and incorporates unsaturated fats, has been highlighted as beneficial (8).

Job-related stress can have significant repercussions on individuals and organizations. High job demands coupled with minimal control over work environments contribute to job strain. Stress levels are particularly pronounced among certain age groups, such as individuals aged 31 to 45 years (9). Many professionals report experiencing medium to high levels of workplace stress (10).

Obesity is escalating rapidly, likely driven by poor dietary choices and insufficient physical activity. Work-related stress, fueled by increasing globalization and technological advancements, has been linked to a rise in health problems, particularly cardiovascular risks (11). Psychological stress, often stemming from workplace tension, correlates directly with obesity. Elevated stress levels influence eating behaviors, with affected individuals exhibiting patterns akin to those with obesity (12). Research involving healthcare professionals has revealed that prioritizing work over personal health often contributes to weight gain. Stress at work encourages reliance on convenience foods, frequent snacking, and sedentary habits, which are significant contributors to obesity. Furthermore, stress has been shown to increase the consumption of high-fat foods (13).

Methodology

This observational study was conducted over three months, with data collection. A total of 400 male and female healthcare professionals classified into normal, overweight, and obese categories based on their body mass index (BMI) participated in the study. BMI was calculated by measuring the weight and height of each participant. Eligible participants were identified based on specific inclusion and exclusion criteria and were invited to take part in the study. The purpose and details of the research were explained to them, and only those who voluntarily agreed were included after providing written informed consent.

Outcome measures included the Brief Job Stress Questionnaire and the Adult Eating Behaviour Questionnaire, which were administered to all participants. The scores from these questionnaires were computed and analyzed to explore correlations.

Statistical Analysis

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS), version 28, to ensure accurate results. Descriptive statistics, including mean and standard deviation, were calculated. Spearman's rank correlation test was applied to assess the relationship between nominal variables, such as demographic information (age, gender, BMI, height, and weight). Statistical significance was determined using a p-value threshold of ≤ 0.05 , while p-values ≤ 0.001 were considered highly significant.

Results

A total of 400 participants were included in the study, comprising 120 males and 280 females. Among them, 230 had normal BMI, 110 were overweight, and 60 were classified as obese (class 1 and class 2)

The mean age of participants in the normal BMI category was 25.7 ± 3 years. For participants in the overweight, obese class 1, and obese class 2 categories, the mean ages were 27.2 ± 5 , 29.4 ± 7 , and 26.5 years, respectively. (Table 1) The study included 50 dental, 50 medical, 65 nursing, 55 pharmacy, and 80 physiotherapy professionals.

The mean BMI of participants in the normal category was 22.1 ± 1 . For overweight, obese class 1, and obese class 2 categories, the mean BMI values were 27.3 ± 1 , 32.1 ± 1 , and 36.5, respectively.

Of the 400 healthcare professionals, 260 participants were found to experience job stress. Additionally, 310 participants exhibited higher levels of eating behavior.

In the normal BMI category, 30 males had a mean **Adult Eating Behaviour Questionnaire (AEBQ)** score of 114.5 ± 19 , while 150 females had a mean AEBQ score of 112.2 ± 18 . Among overweight participants, males and females had mean AEBQ scores of 124.4 ± 19 and 113.3 ± 18 , respectively. For obese class 1 participants, males had a mean AEBQ score of 113.5 ± 19 , while females had a mean score of 118.1 ± 18 . The single obese class 2 female had an AEBQ score of 102.5 ± 18 . No males were present in the obese class 2 category.

The r-value for the correlation between BMI, eating behavior, and job stress was weak across the normal, overweight, and obese BMI categories. The findings were not statistically significant between the groups.

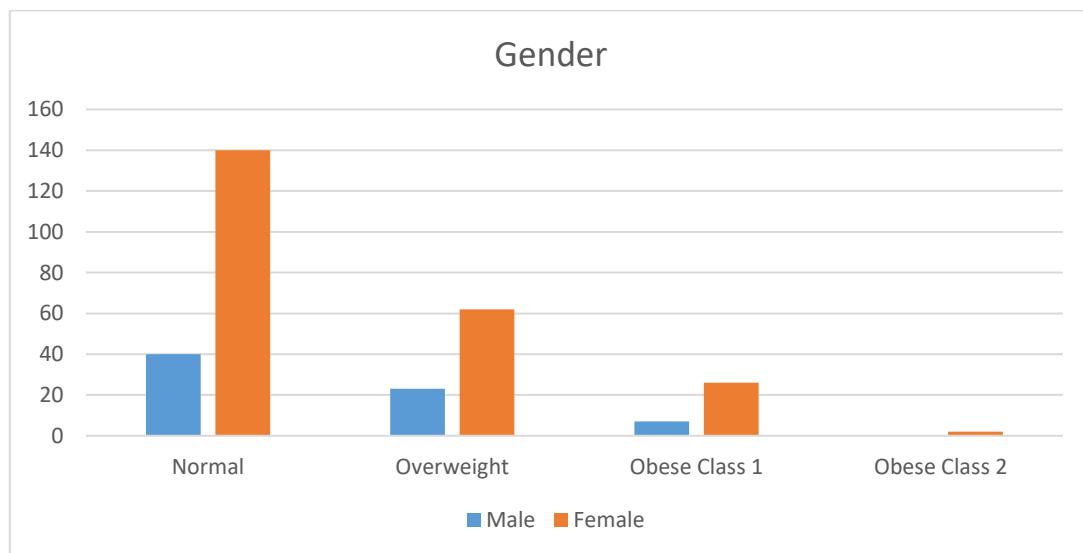


Fig 1. Gender

Table 1. Distribution of Age in the Groups

Group	Frequency	Mean \pm SD
Normal	230	25.7 ± 3
Overweight	110	27.2 ± 5
Obese Class 1	33	29.4 ± 7
Obese Class 2	27	26.5 ± 0

Total	400	26.4 ± 4
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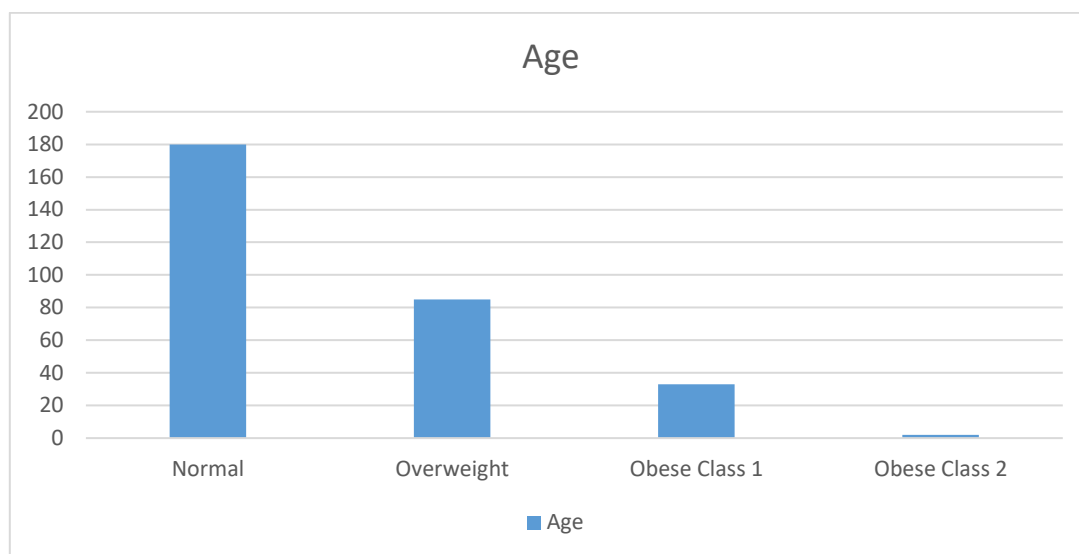


Fig 2. Age

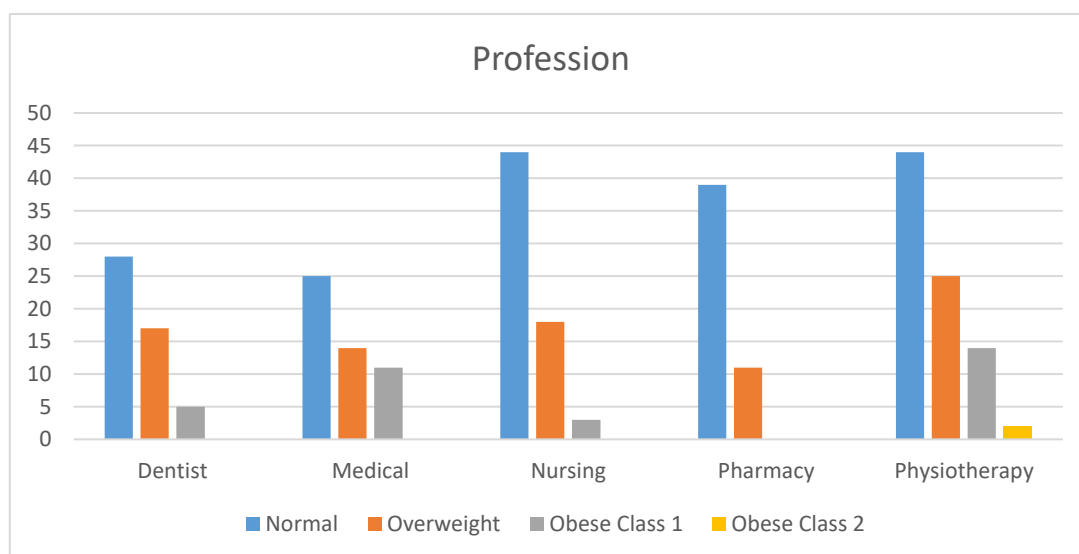


Fig 3. Profession

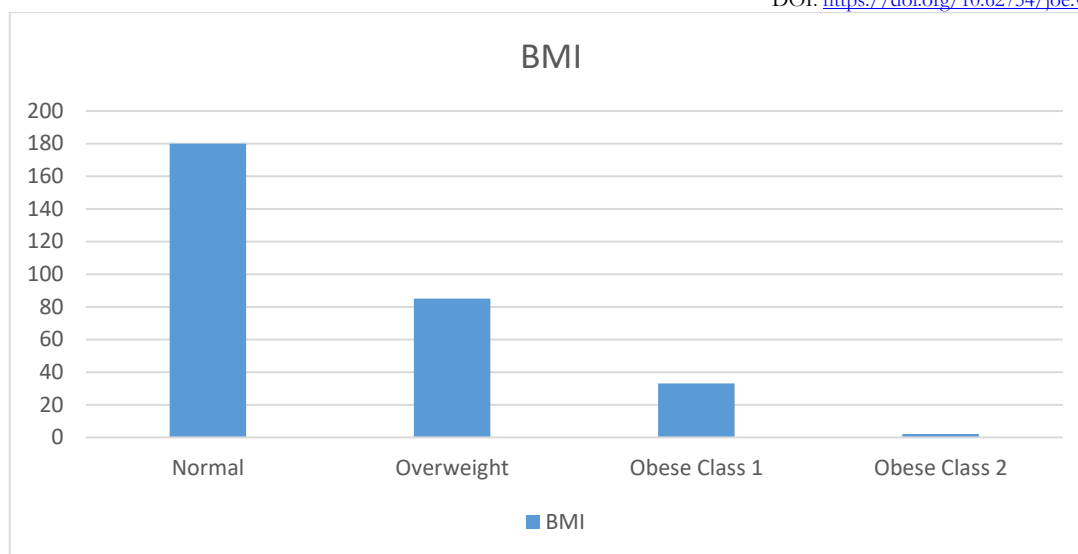


Fig 4. BMI

Discussion

In the current study, the majority of participants were females, with females (76.7%) and males (23.3%). This gender distribution aligns with the findings of PR Shankar et al., who also observed a higher number of female participants (66.4%) compared to males (33.6%). Women in healthcare often view medicine as a noble and secure career choice, making it a popular profession for females (14).

The study revealed a positive correlation between age and BMI, with older participants tending to have higher BMI values. This trend can be attributed to changes in metabolism and body composition that occur with age. From ages 20 to 70, fat mass increases while lean body mass decreases. Additionally, after the age of 20, metabolic rate declines by approximately 2-3% per decade, further accelerating after 50 years due to loss of skeletal muscle (15).

Most participants in this study fell within the normal BMI category, with classified as normal weight. However, only a small number of individuals were categorized as obese, with one female in the obese class 2 category. This individual's higher BMI was attributed to a sedentary lifestyle and poor eating behaviors, reflected in her high AEBQ score. These findings suggest that healthcare professionals, generally more conscious of their health, maintain normal or slightly overweight BMIs. It is often observed that healthcare professionals, when advising patients about lifestyle changes, tend to practice healthy habits themselves (16).

Job stress was prevalent across all professions, with physiotherapists experiencing the highest levels of stress. This finding aligns with previous studies, which report that physiotherapy students face significant stress, particularly during their first and final semesters. Conversely, dental professionals exhibited relatively lower levels of job stress, which may be attributed to less job-related psychological strain (17).

The study found that the majority of participants, particularly those in the normal BMI category, demonstrated healthier eating behaviors. However, participants in the overweight and obese categories, especially those with sedentary lifestyles, showed higher scores on the Adult Eating Behavior Questionnaire (AEBQ). This suggests a link between eating behavior and BMI, where poor eating habits contribute to weight gain, particularly among those with limited physical activity. The positive correlation between eating behavior and BMI further underscores the role of diet in the development of obesity (18).

When examining gender-specific eating behaviors, it was noted that females in the normal BMI category exhibited slightly higher AEBQ scores than males. However, in the obese class 1 category, males had lower

AEBQ scores compared to females. This difference may be due to the tendency for females to engage in dieting and disordered eating behaviors, which could explain the lower BMI in this group. Such behaviors are often adopted by individuals seeking to lose weight and maintain a healthier body mass (19).

Conclusion

This study found that job stress was most pronounced in physiotherapists, particularly in the normal BMI category, and least in dental professionals. Additionally, the correlation between BMI, eating behavior, and job stress was weak across all BMI categories, with no statistically significant findings between the variables. The study suggests that lifestyle factors, including physical activity and eating behavior, play a significant role in determining BMI among healthcare professionals.

Limitations

The study had several limitations, including the inability to verify the authenticity of responses provided by participants. Additionally, the distribution of healthcare professionals across different professions was unequal, which may have influenced the results. The gender distribution was also imbalanced, which might have affected the generalizability of the findings. Further research with a more balanced sample is needed to confirm these results.

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