ORIGINAL ARTICLE

Major Predictor of Depression among Medical Students: Body Mass Index

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ABSTRACT

Background: Depression is a growing health issue among the young, college-going demographic the world over.
Aim: To explore the impact of Body Mass Index (BMI) on the psychological well-being of medical students in private medical college, with particular focus on the influence of BMI on depression.
Methodology: This cross sectional study with enrolled students (n=233) was carried out after ethical research committee's (ERC) approval at CMH Kharian Medical College (CKMC), Physiology Department, Kharian-Pakistan. Both male and female medical students were enrolled. Level of stress, anxiety and depression among them were noted after filling DASS questionnaire Performa. BMI was calculated of enrolled students and its relation with stress, anxiety and depression were observed. Data was analyzed by SPSS software, version 21. Spearman's Rho test was used to determine the association between depression, anxiety and stress with BMI as p-value ≤ 0.05 was considered significant.
Results: All the enrolled students showed that BMI was not normally distributed among them. Female students were 63.52% whereas males were 36.48% were enrolled. Significant correlation was seen between BMI and depression with p-value of <0.035.
Conclusion: We concluded that depression was positively linked with body mass index among medical students whereas it has no significant association with stress and anxiety.
Keywords: Medical students, Stress and DASS system.

INTRODUCTION

Depression is a growing health concern among the young, college-going demographic the world over[1]. In Pakistan, the last decade saw a surge in suicide rates among the youth in general and college students in particular. The vast majority of these cases were linked to the overwhelming burden of hectic academic schedules, unrealistic demands and expectations of good results by the parents/families and the social stigma of not being able to live up to those expectations by the students[2].

Medical academics are believed to be the one of the toughest and most challenging courses a student can opt for, and despite the prestige and nobility attached with this field of work, it does bring with it a staggering amount of pressure and psychological stress. This increases manifold the chances of medical students developing depressive disorders or even suicidal tendencies[3].

Majority of medical students find it difficult to maintain a structured, well rounded daily routine during the five year course of their studies. They often lead a sedentary lifestyle involving long stretches of time spent sitting down, going through course books and study material. Balanced and healthy nutrition is rarely given priority by medical students when fuelling themselves during long study sessions or even during leisure time. Unregulated quantities of fast food and carbonated and/or energy drinks are consumed on a regular basis in medical college cafeterias and hostels throughout the country.[4] Furthermore, the widespread availability of unlimited internet access in college campuses has led to more and more in-living medical students spending their leisure time sitting in front of their laptops and/or mobile devices, either engaged in online games, or watching content on online streaming platforms[5].

This shift in habits, involving more and more time spent indoors, with minimal physical activity is contributing to the alarming rate of increase in obesity and general lack of physical well-being amongst medical students.[6] Scientific data revealed that there is increase in prevalence depression and stress among medical students globally in integrated teaching and having high BMI but limited data is available in private medical colleges of Pakistan. In this back drop present study was carried out to explore the impact of Body Mass Index (BMI) on the psychological well-being of medical students in private medical college, with particular focus on the influence of BMI on depression. It helped us in assessing the prevalence of depression among students so that it can be properly managed in-order to reduce this mental disease.
Objectives: To explore the impact of Body Mass Index (BMI) on the psychological well-being of medical students in private medical college, with particular focus on the influence of BMI on depression.

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METHODOLOGY

This study with enrolled students (n=233) was carried out after ethical research committee's (ERC) approval at CMH Kharian Medical College (CKMC), Physiology Department, Kharian-Pakistan. Both male and female medical students were enrolled. Level of stress, anxiety and depression among them were noted after filling DASS questionnaire Performa. BMI was calculated of enrolled students and its relation with stress, anxiety and depression were observed. Students who did not give informed consent and had any psychological disease were ruled out of the project. Informed written consent was taken. Methodology was followed with modification as in previous research[7].
Statistical Analysis: The data were analysis by using SPSS 21. Frequency and percentage were given for gender and year of study. Depression, anxiety and stress were also given mean±SD. Spearman's Rho test was used to determine the association between depression, anxiety and stress with BMI as p-value ≤ 0.05 was considered significant.

RESULTS

Gender and year of study were presented as frequency and percentages in table-1 for enrolled students. Out of 233 subjects, 148 were female (63.52%) and 85 (36.48%) were males.

Table 1: General Parameters as Frequency & Percentage (n=233)

Variables	Categories	Frequency	Percentage
Gender	Male	85	36.48%
	Female	148	63.52%
Year of study	First year	78	33.47%
	Second year	78	33.47%
	Third year	77	33%
BMI(kg/m^2)	Mean± SD	22.17±3.94	

The distribution of psychological parameters like depression and stress were presented as mean±SD in table-2. In current project, results showed that depression was 24.52±17.905 among enrolled subjects.

Table-2: DASS-21 as Mean±SD among Enrolled Students (n=233)

DASS-21 subscales	Mean± SD
Depression	24.52±17.905
Anxiety	5.04±4.426
Stress	4.74±4.132

In our study, results showed that significant correlation was seen between BMI and depression with p-value of <0.035 as shown in table-3. No significant relation was seen between BMI and other parameters.

Table-3: Correlation between BMI and each of the DASS-21 subscales

		BMI	Depression
Body Mass Index	Correlation Coefficient	1.000	0.138
	Significance (2-tailed)		0.035*
	N	233	233
		BMI	**Anxiety**
Body Mass Index	Correlation Coefficient	1.000	0.045
	Significance (2-tailed)		0.495
	N	233	233
		BMI	**Stress**
Body Mass Index	Correlation Coefficient	1.000	0.057
	Significance (2-tailed)		0.388
	N	233	233

*Statistically significant

DISCUSSION

This cross sectional study was planned for medical students at CMH Kharian Medical College (CKMC), Physiology Department, Kharian -Pakistan. It was done to explore the impact of Body Mass Index (BMI) on the psychological well-being of medical students in private medical college, with particular focus on the influence of BMI on depression. As incidence of depression among our population especially female students is high and has impacted our lives badly. Unfortunately, due to limited resources and research, this major health issue remained unnoticed. Thus we examined the prevalence of depression due to high BMI.

Both males and females medical students were recruited in our work as in other previous studies. Females were148(63.52%) while males were 85(36.48%) as depicted by table-1. Selection of gender among subjects was in line with our study i.e. 29% males and 71% females in one study held in 2011 at University of Amsterdam[8].

In current projects, we enrolled medical students only from 1st, 2nd and 3rd academic years so total enrolled subjects were 233 (table-1). Paradoxically, in another previous study conducted at King Saud University, Saudia Arabia, they enrolled a total of 774 medical students from the five academic years of the College of Medicine[9].

In current study, the frequency of depression of varying grades by age-wise distribution showed that majority of the students were in 19-21 year range as done in many previous studies. Our work was in lines with one previous studies who showed that 60% students had depression and majority were in age group 18-20 years[10].

Depressive, anxiety disorders and obesity are global public health issues resulting disability, poor life quality, increased mortality and co-morbid conditions[11]. However, the relationship between obesity and psychiatric illness remained unclear. Methodological differences across different studies have produced inconsistent results. In our finding, the depression score was significantly higher with increasing BMI. The BMI >/=25 was a predictor of depression among students, however the stress and anxiety scores were not. Similarly, some studies found positive association between obesity and psychiatric morbidity (depression and/or anxiety), especially among women,[12] but others didn't find association between obesity and mental health[13].

Limitations: Our study has number of limitations included too small sample size, financial constraints, lack of resources and last but not the least only BMI were correlated with depression, stress and anxiety in present study among medical students.

CONCLUSION

We concluded that depression was positively linked with body mass index among medical students whereas it has no significant association with stress and anxiety. Future studies will be required to find other causes that result in depression development among students so that prevention programs can be employed in-order to minimize the overall burden of depression among our students.

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