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EATING BEHAVIOURS, SELF-ESTEEM AND DEPRESSION AMONG MEDICAL AND PARAMEDICAL STUDENTS

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ABSTRACT

Background : The prevelance of overweight and obesity among young and adolescents has widely increased worldwide. There is a higher prevalence of mental health problems, including poor academic performance, low self-esteem among obese andoverweight adolescents as compared to normal weight adolescents.

Aim : Aim of this study is to examine a linear association between Body Mass Index and Depression scores among medical and paramedical students. To derive the probability of association between eating behaviours and self esteem among medical and paramedical students.

Method : 18-25 year old medical and paramedical students were given 3 scales, namely - Eating Behaviour Pattern Questionaire, Rosenberg Self-esteem scale and Zung Self rated Depression Scale to assess their eating behaviours, self esteem and depression. Spearman's Rho calculator was used to test null hypothesis.

Result : Our analysis show a positive co-relation between body mass index and depression scores. A significant probability of association between self-esteem scores and snacking on sweets behaviour was obtained.

Conclusion : There might be a biological link between overweight, obesity, depression and other mental health disorders. Our study establishes a link between Body Mass Index and Depression scores.

KEYWORDS :

INTRODUCTION :

The prevelance of overweight and obesity among young and adolescents has widely increased worldwide. As per World Health Organization (WHO) estiamtes almost 40% adults are overweight (BMI 24 - 29.99 kg/m^2) or obese (BMI ≥ 30 kg/m^2)[1]. India, due to its rapid urbanization and rapidly changing socio-demographic landscapes has seen a surge in prevalence of obesity or people who are overweight[1] . This has resulted in a steadily increasing trend of obesity among young adults, especially college and university students, especially in developing countries.

There might be a biological link between overweight, obesity, depression and other mental health disorders[2]. Obesity being an inflammatory state, may be associated with depression[2]. Stressful life events such as peer victimization and teasing associated with one's weight, might biologically predispose youth to depression[2]. There is a higher prevalence of mental health problems, including poor academic performance, low self-esteem, anxiety, depressive disorders, and a greater number of reported suicide attempts among obese adolescents, when compared with normal weight adolescents[3]. Lifestyle too has been associated with psychological disorders.

Teens with higher self-esteem have stronger ability to engage in a healthy lifestyle as compared to teens with depressive symptoms who have less healthy lifestyle beliefs[4] . Stronger beliefs about the ability to engage in healthy lifestyles are related to healthier living attitudes and healthier lifestyle choices[4]. Early identification of unhealthy lifestyle choices and intervention may prevent or reverse long term physical morbidities, thus leading to reversal, reduction or prevention of psychological complaints associated with the same.

Recently there have been studies indicating the role of dopamine associated with eating habits[5]. Intermittent bingeing on sucrose can repeatedly increase extracellular Dopamine in the nucleus accumbens[5]. Such a dopaminergic response is similar to that, seen in drugs of abuse. In obese subjects, striatal Dopamine D2 receptor availability is decreased, which may induce them to seek food (glucose and high fat) as a means to compensate temporarily for under-stimulated (deficient) reward circuits[6] . Similar mechanism is found in substance dependent subjects .

MATERIALS AND METHODS :

A cross-sectional study was conducted among medical and paramedical students of a tertiary care hospital and medical college situated in Ahmedabad. Study was approved by the Institutional Ethics Committee . All medical and paramedical students aged between 18-25 years were taken in the case population. All participants were explained about the details of the study and an informed consent was taken. A semi structured Performa was given which recorded the socio-demographic details of the participants.

All participants were given Eating Behavior Pattern Questionnaire, Rosenberg Self-Esteem Scale and Zung self-rated Depression scale.

Eating Behaviours [7]: Eating Behavior Pattern Questionnaire (EBPQ) consists of 51 self-report items on healthy and unhealthy eating behaviours. Every item was rated in a 5-point Likert-scale ranging from strongly disagree to strongly agree. Six eating behaviour patterns can be assessed by the questionnaire including low fat eating (14 total items), snacking on sweets (6 total items), emotional eating (10 total items), haphazard planning (9 total items), meal skipping (5 total items), and cultural behaviour (7 total items). In this study, emotional eating and snacking on sweets eating behaviour patterns were assessed. For calculating presence or absence of eating behavior in

individual domain, no guidelines have been mentioned by the authors of EBPQ. Various investigators have used different methods for calculating the cut-off score for eating behavior in the individual domain . We have calculated the cut-off score as an average of 4 or above, for respective eating behaviors, to be significant.

Self-Esteem : Self-Esteem was measured using Rosenberg Self Rated Depression Scale. It is a 10 item scale answered on a 4 points from 0(Strongly disagree) 1 (Disagree) 2 (Agree) 3(Strongly agree). Scores range from 0-30 with higher scores indicating higher self-esteem.

Depression : Zung self-rating depression scale is a self-rating 20 item scale. Each question is scored on a scale of 1-4 (a little of the time, some of the time , good part of the time, most of the time) .

Also, subjects in whom there seemed a probability of depression , underwent consultation with Psychiatry Department.

RESULT AND ANALYSIS:

The findings obtained in the study were subjected to statistical analysis using SPSS software. This study was carried out on 90 students, including 40 females and 50 male students. For the categorical variables results are presented as the frequency and for numerical variables results are presented as the Mean .

TABLE 1 :

Sample Size	90
Mean Self Esteem Score	19.54
Median of S.E Score	19
Mean BMI	22.86
Number of Subjects with emotional eating behaviour	24
Number of Subjects with low fat eating behaviour	11
Number of Subjects with snacking on sweets behaviour	20
Number of Subjects with haphazard planning behaviour	20
Number of Subjects with Meal Skipping behaviour	13
Number of Subjects with Cultural Eating Behaviour	0
Number of Subjects without any eating behaviours	33
Mean Depression Score	35.17

Table 1 shows the overall results for different domains, obtained from the sample size.

For the categorical variables results are presented as the frequency and for numerical variables results are presented as the Mean .

Out of total 90 students who participated in the study, 33 (36.66%) students did not have any eating behaviour patterns . Out of these 33 students, 23 students (69.69%) were living with parents/guardians, while 10 students (30.3%) were living in hostel.

9 (10%) students had tobacco dependence, all being male.
P value is considered significant if values are <=0.05

Table 2 :

	Mean Self-esteem Scores					
	Students with Emotional Eating Behaviour	Students with Snacking on sweets Behaviour	Students with Low Fat Eating Behaviour	Students with Haphazard Planning Behaviour	Students with Meal skipping Behaviour	Students with Cultural eating Behaviour
	x = 18.50 N =	x = 17.52 N =	x = 20.360N =	x = 19.25 N =	x =18.615 N =	-
Students with No eating behaviour	x = 20.030 N = 33					
p-value	0.1869	0.0285	0.735	0.585	0.295	-

In Table 2, comparison of means calculator was performed between mean self-esteem scores of students with various eating behaviour patterns and mean self-esteem scores of students with no eating behaviour patterns.

Students with snacking on sweets behaviour have statistically significant probability of having lower self-esteem scores as compared to self-esteem scores of students without any eating behaviour patterns.

No other statisitically significant co-relations were obtained. No student had cultural eating behaviour pattern.

Table 3 :

Mean BMI	22.86	rs = 0.260 p value = 0.013
Mean Depression Score	35.17	

Spearman's Rho calculator was used to derive association between BMI and Self Esteem.

Co-Relation co-efficient value of 0.260 indicates a significant relationship between body mass index and depression scores.

Statistically significant probability of change in depression scores along with change in BMI was obtained.

DISCUSSION :

Population aged 10-24 years accounts for 30.9% of population in India[8]. A meta-analysis of nine studies in 2012 showed 12.6 per cent of children to be overweight and 3.3 per cent to be obese indicating the seriousness of the situation[8]. There is also a challenge of nutritional transition as Indians are moving away from traditional diets high in cereal and fiber to more western pattern diets high in sugars, fat, and animal-source food (fast food culture) that are closely associated with different non communicable diseases.

Young adults are in a period of 'transition' from adolescence to adulthood. There occurs an interaction of social, psychological and biological factors that happen during these transition years, which affect their behaviour[9]. They undergo significant lifestyle changes such as leaving home, going to college , starting work, developing relationships, possibly marrying. These transitions are seen as a time of displacement, when young people feel a sense of 'loss' and 'discontinuity of their identity' as they leave behind familiar conditions and set out on new ventures[9]. Such critical junctures in life, make young adults vulnerable to energy imbalance often leading to weight gain, which may lead to long-term consequences.

Obesity also affects global self-worth, self-esteem for physical appearance, and body dissatisfaction were mediators for the relationship between weight status and different types of bullying.[9]

Also the period of 'transition' as described previously is more profound among students who have shifted to hostel rather then those living with parents. This can be affirmed by the fact that 35 (61%) of students with eating behaviours were living in hostels.

Better mental health is linked to higher frequency of physical and mental activity, controlled alcohol consumption, non-smoking, a body mass index within the range of normal to overweight (i.e. not underweight or obese) and a regular life rhythm. All these factors affect one's mental health in the long term[10]. As seen in results above, a positive co-relation has been derived between depression scores and Body Mass Index among students. There is also growing awareness that contemporary medicine needs to focus on lifestyle changes for primary prevention, for secondary intervention, and to empower patients' self-management of their own health – both mental and physical.

The American Psychological Association recommends Therapeutic Lifestyle Changes (TLC's) as a part of therapeutic interventions for psychological disorders[11]. These TLC's consist of 8 modalities – exercise, nutrition and diet, time in nature, relationships, recreation, relaxation and stress management, religious and spiritual involvement, and contribution and service to others[11].

Limitations of the study are that there might be an interplay between various eating behaviours when present together, which may have a synergistic effect on physical and mental health of students, which cannot be assessed individually. Also, BMI itself has certain limitations as it takes a gross measure of one's weight, not taking into

account, one's muscle mass or fat percentage contributing to the same.

CONCLUSION :

The current study underlines the importance of healthy lifestyle choices in respect to physical and psychological wellbeing. Regular screening of at risk individuals, not only for physical, but psychological illnesses too, is recommended.

SOURCES OF SUPPORT :

Nil.

CONFLICTS OF INTEREST :

There are no conflicts of interest.

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