A study to assess the prevalence of anxiety among obese male and female adults of district Srinagar, Jammu and Kashmir.

[1]Tabashir Bashir, [2]Wamik Hassan, [3]Khushboo Rashid

ABSTRACT

Background: Obesity is a global public health concern with far-reaching implications for physical health, but its impact on mental health, particularly anxiety, remains a topic of growing interest. Prior studies have indicated that obesity may be both a cause and consequence of anxiety due to complex biological, psychological, and social factors. However, few investigations have specifically explored this relationship among obese adult males and females in localized populations. Therefore, the objective of this study was to assess the overall and socio-demographic-specific prevalence of anxiety among obese adults in District Srinagar, Jammu and Kashmir, considering variables such as age, gender, education, marital status, class, occupation, and food habits.

Methods: The data was collected from the local population of district Srinagar, Jammu and Kashmir by home-to-home survey. Body Mass Index (BMI) was utilized as the standard metric to determine the obesity status of individuals. Participants (N=100) were asked to fill the data collection tool forms which consists of 21 questions. The standardized Beck's Anxiety Inventory (BAI) tool was opted to assess the level of anxiety among obese male and female adults. The Beck's Anxiety Inventory (BAI) trichotomizes anxiety levels based on total scores obtained from the tool. A score (0-21) indicates very low anxiety, (22-35) reflect moderate anxiety and scores >36 is considered as potential cause for concern. The data was analysed by calculating the score in terms of frequency, percentage, mean, standard deviation and chi- square test.

Results: Among 100 participants, 20% of the study subjects have very low anxiety, 74% of the study subjects have moderate anxiety and 6% of the subjects have potential cause for concern.

Conclusions: The study findings showed that there is statistically significant association between the prevalence of anxiety among the study subjects with the selected demographic variable (Age) only and no significant association between prevalence of anxiety among the study subjects with their selected socio demographic variable i.e gender, educational status, marital status, class, occupation and food habits

Keywords: anxiety, obesity, Jammu and Kashmir.

Background

Obesity is a global public health concern with far-reaching implications for physical health, but its impact on mental health, particularly anxiety, remains a topic of growing interest. Adulthood is a critical life stage where individuals may face unique challenges related to body image, societal expectations, and personal well-being. Understanding the intersection between obesity and anxiety in this demographic is crucial for developing targeted interventions and support systems. Existing research has highlighted a potential bidirectional relationship between obesity and anxiety, suggesting that individuals with obesity may be more susceptible to anxiety disorders, while anxiety itself may contribute to unhealthy lifestyle behaviours that can lead to weight gain. Despite this, there is a notable gap in research focusing on the specific experiences of anxiety in obese young adults. Overweight and obesity have traditionally been defined and categorised using index of body mass (BMI). BMI is the recommended metric for quantifying group percentiles of body fat during adolescence. It is generally agreed upon that a BMI in the 85th to 95th percentile indicates being overweight, while a BMI in the 95th percentile indicates getting obese greater than the 95% accuracy level. Overweight, which is usually measured by body mass index. The most readily apparent sign of obesity is body mass index (BMI). Overweight is outlined as having a BMI between 25 and 30, On the other conjunction, a BMI of 30 or higher signals obesity.[1]

In 2022, there were nearly 2.5 billion overweight people around the world, constituted of roughly 890 million overweight or obese individuals over the age of 18. In 1990, 25% of adults over the age of 18 were overweight. This pertains to 43% of people beyond the age of 18 who were overweight (43% of males and 44% of women). The WHO found that the continent of America had a 67% prevalence of overweight people, while the south-east Asia and the African continent had a 31% prevalence. 16% of all individuals globally who were 18 years of age or older were obese in 2022. The global incidence of overweight individuals more than doubled around the world between 1990 and 2022[2]
India has had a sharp increase in the number of overweight and obese people in 2023. Based on our earlier research, the National Family Health Survey (NFHS-4) fourth

round data on how widespread obesity and overweight were in India's male and female populations showed a relative shift of 83.7% and 54.7%, respectively, for men and women, making these numbers extremely concerning. This rising incidence is typically linked to recent economic development, as well as shifts in the population's food and lifestyle, urbanisation, and nutritional and demographic shifts.[3] Global obesity rates are on the rise, which has a negative impact on people's general health, quality of life, and susceptibility to a number of chronic illnesses. Anxiety disorders, which impact individuals of all ages and backgrounds, are also among the most prevalent mental health conditions. But the incidence of anxiety in particular among adult males and females who are fat is a complex topic that needs further investigation. The association between obesity and anxiety may vary for men and women depending on a variety of factors, including biological mechanisms, psychological processes, body image beliefs, and societal norms. Comprehending these intricacies is crucial in customising efficacious therapies and support frameworks that attend to the dual aspects of physical and mental welfare of individuals grappling with obesity and anxiety.[4]

Obesity and poor mental health have allegedly been connected. The cheerful fat hypothesis, which postulates a positive correlation between anxiety and obesity, has received support from certain studies. Others, meanwhile, have not found any conclusive evidence linking mental health issues to fat.[5]

Methods

Study design

Based on the problem selected and objectives of the study. A non-experimental Descriptive design was used for the study in order to assess the prevalence of anxiety among obese male and female adults of district Srinagar, Jammu and Kashmir. Purposive sampling technique was used for selection of obese male and female from accessible population and the data was collected by using Beck's Anxiety Inventory (BAI). Data collected was organised and analyzed according to the objectives of the study using descriptive and Inferential statistics. According to the findings of the Global Burden of Disease study, anxiety disorders are the sixth fastest-growing cause of disability internationally[6], anxiety disorders contribute to 26.8 million life years accounted for by disability.[7] The stigma associated with obesity can lead to negative self-esteem, tangible dissatisfaction, and a sense of isolation.[8] In this study, we aimed to assess the prevalence of anxiety among

obese male and female adults of district Srinagar, Jammu and Kashmir. The findings of the study will help health programmers and policy makers at large to design preventive strategies and intervention programs among obese male and female adults.

Data source

This study was conducted on the target population of district Srinagar, purpose of study was explained and confidentiality was assured. In this study 100 samples were selected by Purposive Sampling technique, Informed consent was taken, and the samples of data collection tool was distributed among them. They were asked to fill the data collection tool forms which consists of 21 questions of Standardized Tool Becks Anxiety Inventory (BAI)

Study population

The participants were divided into three age groups viz, the age group of 18-23 years, 24-29 years and 30-35 years. Only participants with a Body Mass Index (BMI) greater than 28 were included in the study.

Measurements

The socio-demographic variables include age, gender, educational status, marital status, class, occupation and food habits. Beck Anxiety Inventory (BAI) was used to assess the anxiety level among participants. The BAI contains a 21-item scale measuring the severity of self-reported anxiety. Anxiety symptoms were rated on a 4-point scale as follows: 0 = none; 1 = mildly; 2 = moderately; and 3 = severely.[9] The association between the prevalence of anxiety and socio-demographic variables was studied.

Statistical analyses

Data were analyzed by using the Statistical Package for the Social Sciences (SPSS) 21. The data was analysed by calculating the score in terms of frequency, percentage, mean, standard deviation and chi- square test was performed to determine association between the prevalence of anxiety among study subjects with the socio demographic variables at $p \leq 0.05$ statistical level of significance.

Results

Result showed that in the present research study, the majority 66% of the study subjects were males and 34% of the study subjects were females. Among the participants 10% of study subjects were in between the age group of (18-23) years, 43% of the study subjects were in between the age group of (24-29) years and 47% were in between the age group of 30-35 years. Across the sample population (85%) of the study subjects were literate and (15%) of the study subjects were illiterate, (59%) of the study subjects were unmarried

and (41%) of the study subjects were married. (27%) of the study subjects were upper class, (61%) of the study were middle class and (12%) of the study were lower class, (24%) of the study subjects were students. Based on occupational background (53%) of the study subjects were Employees and (23%) of the study subjects were labours, Within the participant pool (2%) of the study subjects were vegetarian, (0%) of the study subjects were non -vegetarian and (98%) of the study subjects were both. (Table 1)

TABLE 1: Frequency and percentage distribution of study subjects according to socio demographic variables (age, gender, educational status, marital status, class, occupation and food habits).

VARIABLES	**Opts**	**Percentage**	**Frequency (f)**
AGE	18-23 years	10%	10
	24-29 years	43%	43
	30-35 years	47%	47
GENDER	Male	66%	66
	Female	34%	34
EDUCATIONAL STATUS	Literate	85%	85
	Illiterate	15%	15
MARITAL STATUS	Married	41%	41
	Unmarried	59%	59
CLASS	Upper Class	27%	27
	Middle Class	61%	61
	Lower Class	12%	12
OCCUPATION	Student	24%	24
	Employee	53%	53
	Labour	23%	23
FOOD HABITS	Vegetarian	2%	2
	Non -Vegetarian	0%	0
	Both	98%	98

The findings of the study revealed that 20% of the study subjects have very low anxiety, 74% of the study subjects have moderate anxiety and 6% of the subjects have potential cause for concern (Figure 1)

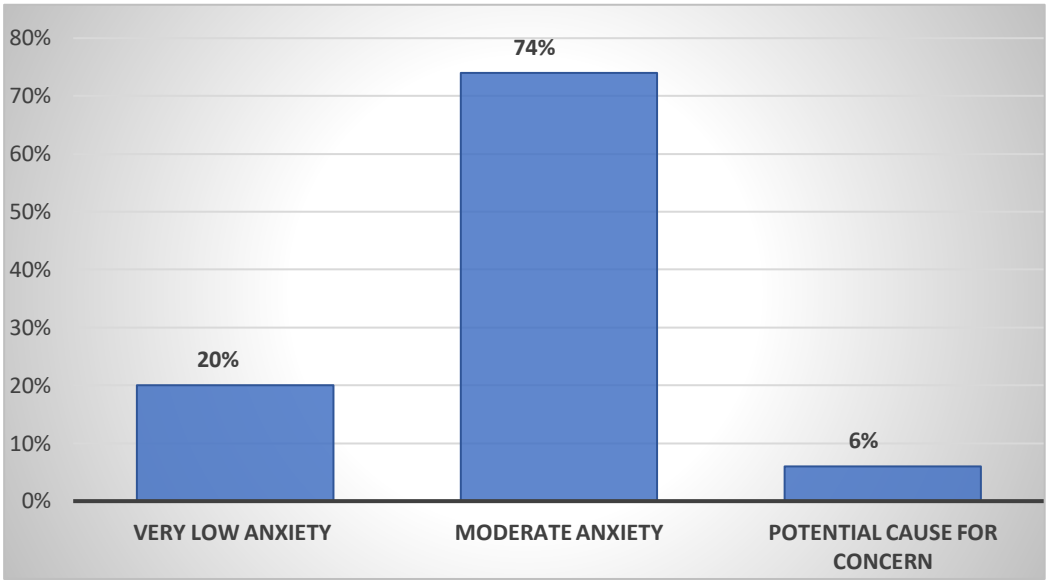

Figure 1: Percentage distribution of anxiety among study subjects as per Beck's Anxiety Inventory (BAI)

The descriptive statistics of anxiety among study subjects as per Beck's Anxiety Inventory (BAI)is represented in terms of mean, median, standard deviation and range (Figure 2). Mean, Median, S.D, Maximum, Minimum and Range for Beck's Anxiety Inventory was 26.33, 27, 6.6425, 41, 0, 41 respectively

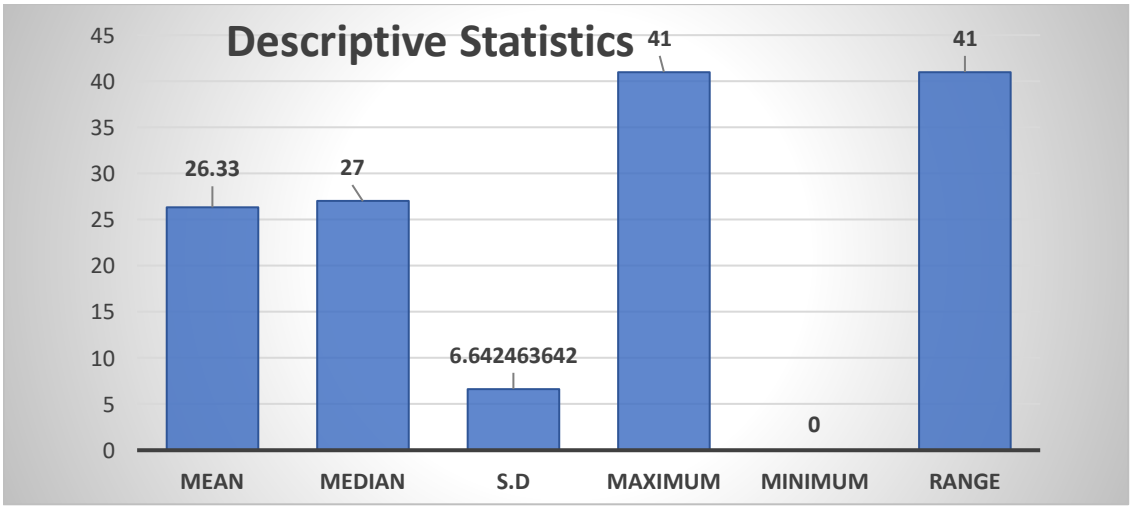

Figure 2: Descriptive statistics of anxiety among study subjects as per Beck's Anxiety Inventory (BAI)

Emerging evidence revealed that there was statistically significant association between the prevalence of anxiety among the study subjects with the selected demographic variable Age only with p-value 0.007 However, there was no significant association between prevalence of anxiety among the study subjects with their selected socio demographic variable (with p-value >0.05) i.e gender, educational status, marital status, class, occupation and food habits as the calculated chisquare values were less than the table values at P≤0.05 level of significance (Table 2)

Table 2: Showing the association of level of anxiety scores among study subjects with their selected socio demographic variables as per Beck's Anxiety Inventory (BAI).

DEMOGRAPHIC DATA		LEVELS OF BECK'S ANXIETY INVENTORY (BAI) (N=100)			ASSOCIATION WITH BECK'S ANXIETY INVENTORY (BAI) SCORE				
VARIABLES	**Opts**	**Very low anxiety**	**Moderate anxiety**	**Potential cause for concern**	**Chi test**	**P value**	**Df**	**Table value**	**Result**
Age (in years)	18-23	5	5	0	14.238	0.007	4	9.49	significant
	24-29	8	35	0					
	30-35	7	33	7					
Gender	Male	12	48	6	1.535	0.464	2	5.99	Not significant
	Female	8	25	1					
Educational Status	Literate	18	62	5	1.404	0.496	2	5.99	Not significant
	Illiterate	2	11	2					
Marital status	Married	8	28	5	2.899	0.235	2	5.99	Not significant
	Unmarried	12	45	2					
Class	Upper class	9	16	2	5.942	0.203	4	9.49	Not significant
	Middle Class	8	48	5					
	Lower Class	3	9	0					
Occupation	Student	7	17	0	4.001	0.406	4	9.49	Not significant
	Employee	8	40	5					
	Labour	5	16	2					
Food Habits	Vegetarian	0	2	0	0.755	0.686	2	5.99	Not significant
	Non-Vegetarian	0	0	0					
	Both	20	71	7					

References:

1. Kowsalya, T.; Parimalavalli, R etal (2014)Prevalence of overweight /obesity among adolescent girls in Salem District, India available at https://journals.lww.com/kleu/fulltext/2014/07020.
2. Okunogbe et al.,(2022) "Economic Impacts of Overweight and Obesity." Available at https://www.who.int/news-room/fact-sheets/detail/obesity and- overweight.
3. Verma M (2023) Factors Contributing To The Change In Overweight/Obesity Prevalence Among Indian Adults: A Multivariate Decomposition Analysis Of Data From National Family Health Surveys Available at https://in.docworkspace.com/d/sINTr_utLpamiuAY?sa=601.1123&ps=1&fn=s12325-023-02670-3.pdf
4. Segal Y, Gunturu S.(2024) Psychological Issues Associated With Obesity. Available at https://www.ncbi.nlm.nih.gov/books/NBK603747/
5. Lykouras L, Michopoulos (2011) Anxiety Disorders And Obesity available at https://in.docworkspace.com/d/sIBjr_utLqLe5twY.
6. Baxter, A.J.; Vos, T.; Scott, K.M.; Ferrari, A.J.; Whiteford, H.A. The Global Burden of Anxiety Disorders in 2010. Psychol. Med. 2014, 44, 2363–2374.
7. Whiteford, H.A.; Degenhardt, L.; Rehm, J.; Baxter, A.J.; Ferrari, A.J.; Erskine, H.E.; Charlson, F.J.; Norman, R.E.; Flaxman, A.D.; Johns, N.; et al. Global Burden of Disease Attributable to Mental and Substance Use Disorders: Findings from the Global Burden of Disease Study 2010. Lancet 2013, 382, 1575–1586.
8. WHO (2021). Obesity and overweight. Retrieved from https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight
9. Beck, A.T.; Epstein, N.; Brown, G.; Steer, R.A. An Inventory for Measuring Clinical Anxiety: Psychometric Properties. J. Consult. Clin. Psychol. 1988, 56, 893–897.