Original Article

Body Image Discrepancy, Self Esteem and their Impact on Abnormal Eating Attitudes Among Osun State University Students, Osogbo, Osun State

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ABSTRACT

This study explores the impact of body image discrepancy and self-esteem on Abnormal eating attitudes among undergraduates. It was a cross-sectional study with descriptive study design, a multistage sampling technique was used to collect data from 247 students. The mean age of respondents was 20.04 ± 2.6 years, with a predominance of females (79.8%). Among participants, 26.3% reported dissatisfaction with their body image, 18.0% had low self-esteem, and 28% were predisposed to abnormal eating attitudes. A significantly higher proportion of participants dissatisfied with their body image (90.2%) exhibited unhealthy eating attitudes compared to 36.1% of those satisfied with their body image, a difference that was statistically significant ($p < 0.001$). Additionally, 53.4% of students with eating disorders had low self-esteem, while 32.9% and 13.7% exhibited average and high self-esteem, respectively. However, this relationship between self-esteem levels and eating disorders was not statistically significant ($p = 0.679$). The findings reveal a strong association between body image dissatisfaction and abnormal eating attitudes, highlighting body image as a critical factor in predicting unhealthy eating behaviors among students. However, self-esteem showed no statistically significant relationship with abnormal eating attitudes. These findings underscore the need for targeted interventions addressing body image concerns to promote healthier eating behaviors among undergraduates.

Keywords: Body image, Eating attitudes, Relationship, Self-esteem, Undergraduates.

INTRODUCTION

Abnormal eating attitudes mean unhealthy or skewed attitudes towards food eating and body image that don't always fit the diagnostic criteria for an eating disorder. Although persistent dieting, food avoidance, or extreme body weight concern are common among people with disordered eating attitudes, these behaviors are less severe and less reliable than those associated with eating disorders[1]. Although they are not by themselves regarded as a mental health diagnosis, they do reflect a pattern of problematic connections with food that can occasionally develop into a more serious condition. It is possible to view abnormal eating attitudes as a precursor to eating disorders, which are frequently impacted by cultural standards of thinness or social pressures. They do not however, always progress into severe eating problems. The key difference lies in the severity and consistency of the behaviors: while abnormal eating attitudes reflect unhealthy relationships with food, eating disorders represent much more serious, life-threatening conditions that often require intensive treatment[1].

Abnormal eating habits and inappropriate weight

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loss practices are related to personal dissatisfaction and low self-esteem and are commonly expressed by dissatisfaction with body weight2 . An increased incidence of eating disorders and abnormal eating attitude has been shown in an epidemiological study, concomitantly with a redefinition of female beauty standards, toward an increasingly thin body. Media products that convey an aesthetic standard seem, at the same time, to express and model social representations of female beauty, in turn, have an effect on dietary restrictions[3]. Social reinforcement from the family, friends, and the media upon teenagers and young adults, encouraging them to have a thin fit body, reveals the presence of symptoms suggestive of eating disorders and predicts the onset of these symptoms in this population[4]

Body image involves how an individual perceives himself or herself in comparism with the standards that have been put in place by the society. When people try but couldn't conform to the standards, they become dissatisfied with their body. The way a person perceives his/her body is influenced by a variety of factors including the degree of importance their physical appearance has in their overall sense of self[5]. It has been noted that many women experience a discrepancy between their actual and perceived body shape[6]. Research highlights the impact a disturbance in body image can have on an individual's quality of life[7]. In a non -clinical student sample, body image attitudes have been found to have a negative effect on self-reported self-esteem, interpersonal confidence, eating and exercise behaviours, grooming activities, sexual behaviours and experiences and emotional stability[8]. In adolescents, poor body image is associated with self-reported low self-esteem, elevated anxiety, depression and somatization in a community sample[7]. Body image dissatisfaction has also been found to correlate with eating disorders[9].

Self-esteem is the judgment we make about our own worth and the feelings associated with those judgments[10]. These evaluations of our own competencies may affect emotional experiences, future behaviour, and long-term psychological adjustment[10]. Students with high self -esteem are able to act independently, assume responsibility as well as tolerate frustration and attempt new tasks with confidence[11]. Low self-esteem has been found to be predictive of increased vulnerability to body image dissatisfaction[12]. In Nigeria, the influence of cultural expectations and socio-economic factors further complicates the dynamics of body image and self-esteem among young adults. Despite increasing global attention to body image issues, research focusing on Nigerian students remains limited. Understanding these relationships is therefore crucial to developing effective interventions tailored to this population.

Hence, this study aimed to investigate the relationship between body image discrepancy, self-esteem, and abnormal eating attitudes among undergraduate students at Osun State University, Osogbo.

MATERIALS AND METHODS

Study Setting

The study was conducted at Osun State University, which is one of the ten universities in Osun State. Osun State University is a multi-campus university established by the Osun State government of Nigeria. The university currently operates six campuses and has 8 colleges distributed across the six administrative or geopolitical zones of the state.

The national University Commission approved osun State university on December 21, 2006; as the 30th state university and 80th in Nigerian university system. It has its campuses in Osogbo (College of Health sciences, College of Engineering and College of Science and Technology), Ikire (College of Humanity and Culture), Okuku (College of Social Sciences and Management), Ifetedo (College of Law), Ipetu-Ijesha (College of Education), and Ejigbo (College of Agricultural Sciences).

Study Design

This was a descriptive cross sectional study.

Study Population

Undergraduate students in Osun State University, Osogbo Campus.

Inclusion criteria

Undergraduate students aged 19 to 25 years.

Exclusion criteria

Students with chronic medical conditions and those with established eating disorders.

Sample size determination

Using the Leslie Fisher's formulae (Z^2pq/d^2)[13], the minimum sample size calculated was 186 respondents using a prevalence of 14.1% from a previous study[13]. However, this was rounded up to 250 respondents to enhance representativeness.

Multistage sampling technique was used in selecting the study participants.

Stage 1: From all the eight colleges in Osun State University, Osogbo, two colleges (college of Health Sciences and college of Engineering) were selected by simple random sampling via balloting technique.

Stage 2: From the list of all the departments in the two selected colleges, five (5) departments were then chosen by simple random sampling (balloting technique) making a total of ten (10) departments.

Stage 3: A proportional allocation was used to determine the number of students that were interviewed in each of the ten (10) selected departments.

Proportional allocation of students was obtained using $= \frac{xa}{NT} \times$ sample size

Where Xa = Number of students (from 200L-400L) in a particular department.

NT = Total number of students in each of the selected departments

Sample size = 250

Stage 4: The study participants were thereafter selected by systematic random sampling. Using the formula;Kth= N/n, the sampling interval was determined (where N= units in the population and n= the units to be selected, and K is the sampling interval). The first student in each chosen department, was selected by simple random sampling through balloting method. The subsequent students (Kth respondent) were chosen systematically by using the sampling interval determined based on the number of students in each level (200L-400L) obtained from their attendance register (the sampling frame) at the respective department.

Research Instrument

Data was collected through the use of a pretested self-administered, semi-structured questionnaire which was adapted from a careful review of relevant literatures.

The questionnaire was divided into four sections to collect relevant information from the respondents.

Measurement of outcome variables

Body image discrepancy using the Body Shape Questionnaire (BSQ)

The BID (body image discrepancy) was derived from participants rate items on a scale from 1 (never) to 6 (always). The overall total score for each respondent was 204, those that scored above the mean scores reflect greater dissatisfaction with their image and those that scored below the mean score reflect low dissatisfaction with their image.

Screening for Abnormal Eating Attitude (Using EAT-26)

The rating of the Eating Attitude Test (EAT) for each respondent was carried out by giving a point each to statements under EAT-26 questions according to the responses given by the respondents. The total points for each respondent was scored and the result was multiplied by 100 and divided by the overall EAT score to give the nutrition rating percent. The cut off score used is 20% and respondents who had a rating of 20% and above were categorized as having abnormal eating attitude while those below 20% have less likelihood of developing an abnormal eating attitude

In this study, dieting subscale were assessed using items 1, 6, 7, 10, 11, 12,14, 16, 17, 22, 23, 24, 26; bulimia and food preoccupation subscale was derived from items 3,4,9,18,21 and 25 while oral control subscale items 2, 5, 8, 13, 15, 19 and 20. On scoring, each item in the instrument is scored on a scale of Sometimes, Rarely, Never (0 point), Often (1 point), Usually (2 points) and Always (3 points), and with score range of 0-78, the cut-off score is 20,

thus a score of 20 and above is positive screen for abnormal eating attitude,

Self-Esteem: Rosenberg Self-Esteem Scale (RSE):

This is a measure of self-esteem with the total obtainable scores ranging from 0-30. Score of 0-10 indicate low self-esteem, while 11-20 was rated as normal self-esteem and score 21-30 as high self-esteem[13].

Data Analysis

The questionnaires were manually sorted out, entered into a computer and the obtained data was analyzed using IBM Statistical Package for Social Sciences (SPSS) version 20. The socio-demographic details of respondents were reported using descriptive statistics such as frequency, means, and standard deviation (SD). The data was subjected to different tests statistics including univariate analysis and bivariate analysis while data was presented using frequency distribution tables and charts. At the bivariate level, associations between categorical variables were assessed using the Pearson Chi-square test. Significant findings were so judged at p-value less than 0.05.

Ethical Considerations

Ethical clearance for the study was obtained from the Ethical Review Committee of Ladoke Akintola University of Technology, Teaching Hospital, Osogbo. (Protocol number; LTH/EC/2018/04/365) Permission was obtained from the Osun State University Authority, Osogbo. Individual written consent was also obtained from respondents. All information gathered were kept confidential and participants were identified using only serial numbers. The outcome of the study was communicated to the participants, and those of them discovered to have any issues were counselled and referred appropriately.

RESULTS

Two hundred and fifty (250) research instruments were distributed to respondents and two hundred and forty-seven (247) were retrieved and analyzed giving a response rate of 98.8%.

Table 1 below showed the socio-demographic characteristics of the respondents. The age range of the students ranges between 19-25 years and the mean age of respondents was 20.04 ± 2.6 years. Majority 186, (75.3%) of them were less than 20 years of age. Over three-quarter 197, (79.8%) of the respondents were females. A significant proportion 235, (95.2%) of the study participants belonged to the yoruba ethnic group while others constitute about 12, (4.8%). More than three-fourths 192, (77.7%) of the respondents received less than eighteen thousand naira per month while less than a quarter 55, (22.3%) received more than eighteen thousand naira as allowances. Slightly above a third of the respondents 99, (40.1%) were in 200 level while over a quarter of them 69 (27.9%) were in 400 level. (Table 1)

Nearly three-fourths of the students (72%) had no eating disorder, while slightly above one-quarter (28%) had eating disorder. (Figure 1)

The mean score for body image discrepancy was 102 ± 6.3, and majority 182(73.70%) of the respondents were satisfied with their body image while 65(26.30%) of them were dissatisfied with their body image. (Figure 2)

The mean ± S.D of the study participants' self-esteem was 15.0 ± 3.7. Slightly above half 129 (52.0%) of the respondents were found to have high self-esteem and nearly one- third 74 (30.0%) had average self-esteem while 44 (18.0%) rated themselves low in self-esteem (Figure 3)

In this study, significantly higher proportion (90.2%) of those who had unhealthy eating index were dissatisfied with their body compared with 36.1% of them who were satisfied with their body image but had unhealthy eating index. This difference was statistically significant at $p<0.001$. (Table 2)

Over two-thirds 120 (69.0%) of the respondents without eating disorders had high self- esteem, followed by less than a quarter 38 (21.8%) who had average self esteem. A little above half of the study participants with eating disorders 39 (53.4%) had low self esteem while about one-third 24 (32.9%) and 10 (13.7%) of them had average self-esteem and high self-esteem respectively. This difference was

not statistically significant (p = 0.679). (Table 3)

Using Pearson correlation analysis for eating disorders, body image discrepancy and self-esteem, a positive relationship was found between body image discrepancy and eating disorders (r = 0.18). This relationship was such that as the body image discrepancy increases, so the rate of eating disorders among the respondents. The association was statistically significant at p = 0.002. A negative correlation was observed between self-esteem and eating disorders (r = - 0.4). The relationship was such that as the self-esteem of the students increase, the rate of eating disoders decreases among them. The association between eating disorders and self-esteem of the students was not statistically significant at p = 0.278.

A binary logistic regression model was used to explore factors that are associated with eating disorders among the respondents. The male study participants were three times less likely to develop eating disorders compared to their female counterparts (O.R = 0.319). Respondents who reported dissatisfaction about their body image were four times more likely to develop eating disorders compared to those that were satisfied with their body image (O.R = 4.100). Also the students whose BMI and waist and hip ratio are in the over-weight categories are almost three times (O.R = 2.928) and four times (O.R = 4.469) more likely to develop eating disorders compared to those in the underweight and obese categories.

Table 1: Socio-demographic Characteristics of Respondents (N = 247)

Variables	Frequency (n)	Percentage (%)
Age (years)		
≤20	186	75.3
>20	61	24.7
Sex		
Male	50	20.2
Female	197	79.8
Ethnicity		
Yoruba	235	95.2
Others	12	4.8
Father educational status		
Primary	15	6.1
Secondary	36	14.5
Tertiary	196	79.4
Mother educational status		
Primary	14	5.7
Secondary	43	17.4
Tertiary	190	76.9
Monthly income (Naira)		
<18000	192	77.7
>18000	55	22.3
Level in school		
200	99	40.1
300	79	32.0
400	69	27.9

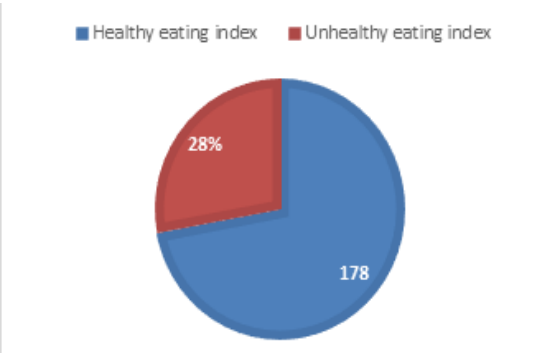

Figure 1: Prevalence of Eating Disorders among Respondents (N = 247)

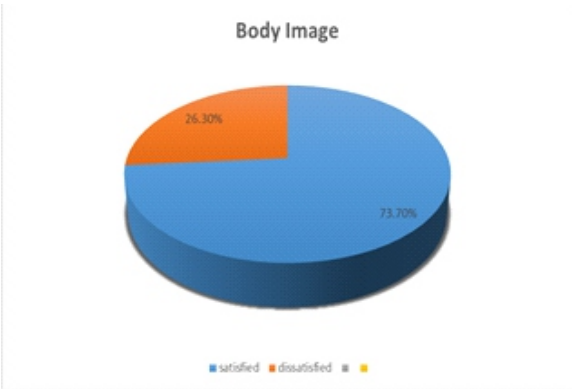

Figure 2: Body Image Discrepancy using (BSQ) among Respondents (N = 247)

Table 2: Association between Eating Disorders and Body Image Discrepancy

Variables	Eating Disorders (%)		Total (%)	Statistics
	Yes	No		
Body image discrepancy				
Satisfied with body image	116 (63.9)	66 (36.1)	182 (100.0)	$\chi2 = 23.076$
Dissatisfied with body image	6 (9.8)	59 (90.2)	65 (100.0)	df = 1
				p < 0.001*

***Statistically significant <0.05**

Table 3: Association between Eating Disorders and Self-esteem

Variables	Eating Disorder		Total	Statistics
	No	Yes		
Self-esteem				
Low self-esteem	16 (9.2%)	39 (53.4%)	55 (22.3)	$\chi2 = 8.325$
				df = 2
Average self-esteem	38 (21.8%)	24 (32.9%)	66 (25.1)	p = 0.679
High self-esteem	120 (69.0%)	10 (13.7%)	130 (52.6)	

Table 4: Factors associated with Eating Disorders among the Respondents using logisticregression

Variables	p-value	Odds ratio	Confidence interval	
			Lower	Upper
Sex				
Female (Reference Value)				
Male	*0.002	0.319	0.607	14.386
Body image discrepancy				
Satisfied about image (Reference value)				
Dissatisfied about image				
	*0.006	0.410	0.216	0.777
Body mass index				
Normal (Reference Value)				
Under weight	0.180	0.487	0.170	1.395
Over weight	< 0.001*	2.928	15.572	65.052
Obesity	0.489	0.682	0.230	2.018
Waist and hip ratio				
Normal (Reference Value)				
Overweight	0.031*	4.469	1.370	25.555
Obesity	0.171	2.584	0.663	10.074

***Statistical Significance p<0.05**

DISCUSSION

The prevalence of eating disorder found in this study is 28%. Similar studies done in Nigeria, which used the same instrument however, reported lower prevalence of 14.1%, 14.3% and 15.3% respectively compared to that in this study[4,15,16]. This result, may however be due to the differences in the categories of respondents used in the current study, who were young adults who constitutes a high risk group for development of eating disorders. This lesser prevalence may be due to the higher EAT-26 cut off score used in the study. In tandem with this study, was the finding of a similar study among Undergraduates in Saudi-Arabia, whose prevalence of eating disorders among health specialties students was 28.7%[17].

Also, a significant proportion of the respondents in this study were less than 20 years with the mean age

of 20.04 ± 2.6years. Previous studies done among undergraduates on eating disorders also reported similar mean ages of 21.63 ± 1.80 and 19.5 ± 1.4 respectively[18,19]. Over three-quarters of the study participants were females and this is in keeping with a study in Pakistan in which 56% of the students (respondents) were females[20]. However, in Lagos state Nigeria, Fadipe et al reported a contrasting finding in which over half of their respondents were males (55.6%)[14]. In this study, a significantly higher proportion (90.2%) of the respondents who had eating disorder were dissatisfied with their body compared with 36.1% of them who were satisfied with their body image but had eating disorder. This finding is in agreement with that of a study among adolescents in Australia which also reported a higher level of dissatisfaction among the young people with more than half of them practicing different forms of dieting in order to have thinner bodies[21]. Youth Risk Surveillance Report also showed that 27.7% of high school students in the United States described themselves as slightly or very overweight[22]. A total 44.4% reported that they were trying to lose weight, and this percentage was higher for girls (59.3%) than for boys (30.5%)[23].

This study also found that over a quarter of the respondents were dissatisfied with their body image. The dissatisfaction is reflected by a discrepancy between the actual and perceived body shapes[5]. The finding is much lower than that reported by a study conducted among undergraduates in Brazil and among adolescents in Nigeria whose results showed that 67.1% and 61% respectively were dissatisfied with their body image[23,24]. A probable reason for the wide difference in the prevalence of body-image dissatisfaction may be dissimilarities in the instrument used to assess the body-image dissatisfaction. While this study used a self-reported questionnaire, the study by Sabageh et al used the 7 silhouette figures. The implication of the dissatisfaction among the respondents, is that they begin to seek body weight control measures, some of which are unhealthy. A common measure is the eating pattern, hence why some begin to develop disordered eating[25,27]

In this study, using the Rosenberg Self-Esteem Scale (RSE) to assess the self-esteem of respondents, one-fifth of the respondents had low self-esteem, while half of them had a high self-esteem. The present study found that more people with low self-esteem had unhealthy eating behaviour, but this difference was not statistically significant. This finding is different from what has been reported by many previous studies, which have shown significant associations between self-esteem and eating disorders[7,12,28]. In fact, some showed that improving a person's self-esteem may improve, not only eating behaviour but also the body image satisfaction among young people[29]. Other authors have similarly found low self-esteem to be predictive of increased vulnerability to body-image dissatisfaction[30]. The lack of statistically significant association in the present study may be due to the relatively small sample size, and may not be unconnected with the different scales for assessing self-esteem in the different studies.

The degree of body satisfaction and dissatisfaction is believed to be an integral part of self-esteem. Individuals assess their bodies by measuring them against ideal body type of culture and the result of this self-assessment often determines body satisfaction or dissatisfaction[31].

The current study found that body image discrepancy, body mass index and waist-hip ratio were the only explanatory variables. Also, the respondents who reported dissatisfaction about their body image were two times less likely to have healthy eating index compared to those that were satisfied with their body image ((O.R = 0.410). Our findings was corroborated by a previous study on eating disorders conducted among students in Taiba University, Saudi Arabia. Their results also showed that gender, age, BMI and academic performance of the students were significant predictors of eating disorders. Although it has been hypothesized that eating disorders have multiple and often shared biological, psychological, developmental, and sociocultural etiologies[17]. Therefore, assessment of other variables that decrease or increase the risk of eating disorders may be require to address the lack of unanimous agreement about role of body dissatisfaction in development of eating disorders

among undergraduates.

CONCLUSION

The study found that 28% of the respondent had abnormal eating attitude and were predisposed to eating disorders. Majority of the respondents were satisfied with their body image while a few had low self-esteem. The findings reveal a strong association between body image dissatisfaction and abnormal eating attitudes, highlighting body image as a critical factor in predicting unhealthy eating behaviors among students. However, self-esteem showed no statistically significant association with abnormal eating attitudes. This study identified sex, dissatisfaction with body image, BMI and waist-hip ratio, as predictors of eating disorders among undergraduates. These findings underscores the need for targeted interventions addressing body image concerns to promote healthier eating behaviors among undergraduates.

Limitations of the Study

The responses of the students in this study was self-reported and have to be accepted as they were stated, however the research assistants were well trained in the use of the research instrument to minimize reporting bias. Also, the effect of the current dietary pattern of the students and its relationship with the body image discrepancy and their self-esteem were not investigated in this study.

Competing interests

The authors declared no competing interests.

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Data Availability

The data can be made from the corresponding author upon request.

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